



# Powering the nation's lifeline reliably

SVARN ROLLING STOCK CABLES



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TELECOM | AUTOMOTIVE | DEFENCE | **RAILWAYS** | POWER | PROJECTS

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## **SVARN ROLLING STOCK CABLES**

# **A comprehensive range for internal and external wiring of rolling stock**

In the rapidly evolving rail transportation industry, where passenger comfort, operational efficiency, safety, and speed are critical, advanced technology demands cables that deliver superior performance. With over two decades of expertise, Svarn stands at the forefront of innovation, offering a comprehensive range of rolling stock cables to meet these dynamic requirements.

From low-voltage to high-temperature, fire-resistant, and advanced data cables, Svarn's products are engineered with materials that enhance electrical, mechanical, and thermal properties while ensuring fire safety and extended lifespan. Technologies like electron beam irradiation and silane cross-linking ensure durability and reliability in demanding conditions.

Manufactured in state-of-the-art facilities and certified to industry benchmarks, Svarn's cables exemplify precision and excellence. Trusted for our unmatched expertise, we power modern rail systems with solutions that drive smarter, safer, and more efficient transportation.



## ABOUT US

At Svarn, we're pioneers in turning big ideas into real-world solutions. Our legacy of innovation, rooted in the essence of "Svarn" or Gold, has thrived since 2005. With over 3,000 dedicated employees, we're constantly pushing the boundaries of technology to benefit our customers and society. Our impact spans across six key industries, supported by seven cutting-edge manufacturing facilities and global offices in strategic locations. Through relentless innovation, we're shaping a prosperous and sustainable future — **inspired by possibilities.**



Know more at [www.svarn.com](http://www.svarn.com)



## SINGLE CORE THIN WALLED FLEXIBLE EBXL CABLES FOR ELECTRIC LOCOMOTIVES

**Above 750V and up to 1.8/3KV**

**Svarn Single Core Thin Walled Flexible EBXL Cables** are suitable for tap changer of electric locomotives, AC/DC EMU, BG, AC EMU & MEMU coaching stock.



### CABLE STRUCTURE

- Conductor: Annealed Tinned Flexible Copper Conductor
- Insulation: Electron Beam Cross-linked Insulation Polyolefin
- Outer sheath: Electron Beam Cross-linked Polyolefin

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated voltage : +750V up to 1.5/3 KV
- Short circuit temperature : +280°C
- Test voltage : 8kV for 15 mins.
- Min bending radius : 3 X D for cable dia.<10mm, 5 X D for cable dia.>10mm
- Insulation resistance constant :  $K \geq 12000 \text{ M}\Omega \cdot \text{Km}$
- Specification : ELRS / SPEC / ELC / 0019 Rev-4

### FEATURES

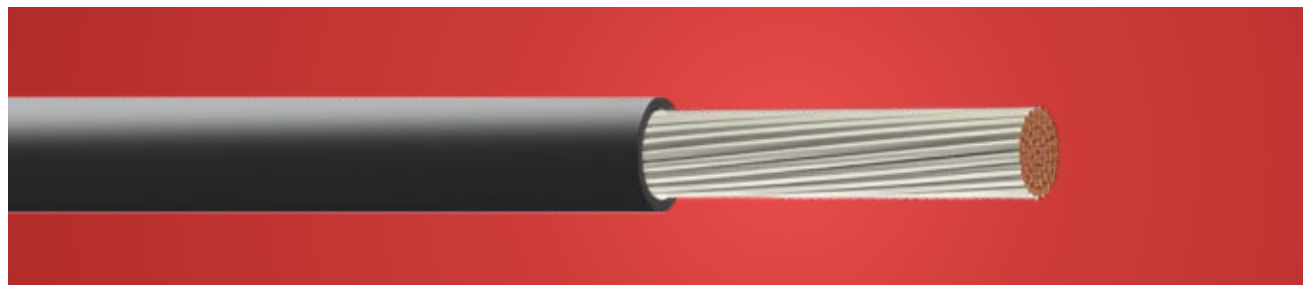
- Limited fire hazard type
- Minimum flame spread
- Low smoke emission
- Limited toxic fume emission
- Resistant to mineral oil, diesel, etc.

| Nominal Cross Sectional Area of Core (Mm <sup>2</sup> ) | No. of Wires X Wire Dia. (Max) (Nos. X Mm) | Conductor Dia. Nominal (Mm) | Minimum wall Thickness of Insulation (Mm) | Minimum wall Thickness of Sheath (Mm) | Overall Cable Dia (D) (Mm) | Max. Resistance of Conductor at 20 deg. C (ohm/km) | Approx. Cable Weight (Kg/Km) |
|---------------------------------------------------------|--------------------------------------------|-----------------------------|-------------------------------------------|---------------------------------------|----------------------------|----------------------------------------------------|------------------------------|
| 1.5                                                     | 30 x 0.26                                  | 1.6                         | 0.30                                      | 0.40                                  | 3.20 ± 0.10                | 13.7                                               | 20                           |
| 2.5                                                     | 50 x 0.26                                  | 2.1                         | 0.30                                      | 0.40                                  | 3.70 ± 0.15                | 8.21                                               | 30                           |
| 4.0                                                     | 56 x 0.31                                  | 2.7                         | 0.35                                      | 0.45                                  | 4.50 ± 0.15                | 5.09                                               | 50                           |
| 6.0                                                     | 84 x 0.31                                  | 3.3                         | 0.35                                      | 0.45                                  | 5.10 ± 0.15                | 3.39                                               | 70                           |
| 10                                                      | 80 x 0.41                                  | 4.2                         | 0.40                                      | 0.50                                  | 6.30 ± 0.20                | 1.95                                               | 120                          |
| 16                                                      | 126 x 0.41                                 | 5.5                         | 0.50                                      | 0.70                                  | 8.30 ± 0.20                | 1.24                                               | 190                          |
| 25                                                      | 198 x 0.41                                 | 6.8                         | 0.60                                      | 0.80                                  | 10.2 ± 0.30                | 0.795                                              | 280                          |
| 35                                                      | 266 x 0.41                                 | 7.8                         | 0.65                                      | 0.85                                  | 11.7 ± 0.30                | 0.565                                              | 390                          |
| 50                                                      | 385 x 0.41                                 | 9.5                         | 0.70                                      | 0.90                                  | 13.6 ± 0.30                | 0.393                                              | 550                          |
| 70                                                      | 348 x 0.51                                 | 11.5                        | 0.75                                      | 0.95                                  | 15.6 ± 0.30                | 0.277                                              | 740                          |
| 95                                                      | 468 x 0.51                                 | 12.9                        | 0.85                                      | 1.05                                  | 17.3 ± 0.30                | 0.210                                              | 960                          |
| 120                                                     | 589 x 0.51                                 | 14.8                        | 0.95                                      | 1.15                                  | 19.6 ± 0.30                | 0.164                                              | 1200                         |
| 150                                                     | 741 x 0.51                                 | 16.3                        | 1.00                                      | 1.20                                  | 21.9 ± 0.30                | 0.132                                              | 1550                         |
| 185                                                     | 912 x 0.51                                 | 18.5                        | 1.05                                      | 1.25                                  | 23.8 ± 0.30                | 0.108                                              | 1898                         |
| 240                                                     | 1184 x 0.51                                | 21.0                        | 1.10                                      | 1.30                                  | 26.9 ± 0.30                | 0.0817                                             | 2449                         |
| 300                                                     | 1480 x 0.51                                | 23.5                        | 1.15                                      | 1.35                                  | 29.7 ± 0.30                | 0.0654                                             | 3036                         |

## SINGLE CORE THIN WALLED FLEXIBLE EBXL CONTROL CABLES FOR ELECTRIC LOCOMOTIVES

### 750V

**Svarn Single Core Thin Walled Flexible EBXL Control Cables** are suitable for tap changer of electric locomotives, AC/DC EMU, BG, AC EMU & MEMU coaching stock.



#### CABLE STRUCTURE

- Annealed Tinned Flexible Copper Conductor
- Insulation : Electron Beam Cross Linked Polyolefin rated 1500C, Single layer

#### TECHNICAL DATA

- Temperature Range : -40°C to +150°C
- Rated voltage : 750V
- Short circuit temperature : +280°C
- Test voltage : 6kV for 5 mins
- Min. bending radius : 3 x D for cable dia <10mm, 5 x D for cable dia >10mm
- Insulation resistance constant(at room temp) : K ≥2000 MΩ. Km
- Specification : ELRS / SPEC / ELC / 0019 Rev 3

#### FEATURES

- Limited fire hazard type
- Minimum flame spread
- Low smoke emission
- Limited toxic fume emission
- Resistant to mineral oil, diesel, etc.

| Nominal Cross Sectional Area of Core (Mm <sup>2</sup> ) | No. of Wires X Wire Dia. (Max) (Nos. X Mm) | Conductor Dia. Nominal (Mm) | Minimum wall Thickness of Insulation (Mm) | Overall Cable Dia (D) (Mm) | Max. Resistance of Conductor at 20 deg. C (ohm/km) | Approx. Cable Weight (Kg/Km) |
|---------------------------------------------------------|--------------------------------------------|-----------------------------|-------------------------------------------|----------------------------|----------------------------------------------------|------------------------------|
| 1.5                                                     | 30 x 0.26                                  | 1.6                         | 0.55                                      | 2.70 ± 0.10                | 13.7                                               | 19.5                         |
| 2.5                                                     | 50 x 0.26                                  | 2.1                         | 0.60                                      | 3.30 ± 0.15                | 8.21                                               | 30.5                         |
| 4.0                                                     | 56 x 0.31                                  | 2.7                         | 0.65                                      | 3.95 ± 0.15                | 5.09                                               | 46.5                         |
| 6.0                                                     | 84 x 0.31                                  | 3.3                         | 0.70                                      | 4.50 ± 0.20                | 3.39                                               | 69.0                         |
| 10                                                      | 80 x 0.41                                  | 4.2                         | 0.80                                      | 5.60 ± 0.30                | 1.95                                               | 113                          |
| 16                                                      | 126 x 0.41                                 | 5.5                         | 0.86                                      | 7.20 ± 0.30                | 1.24                                               | 166                          |
| 25                                                      | 198 x 0.41                                 | 6.8                         | 0.96                                      | 8.60 ± 0.30                | 0.795                                              | 250                          |
| 35                                                      | 266 x 0.41                                 | 7.8                         | 1.10                                      | 10.00 ± 0.30               | 0.565                                              | 350                          |
| 50                                                      | 385 x 0.41                                 | 9.5                         | 1.20                                      | 11.90 ± 0.30               | 0.393                                              | 500                          |
| 70                                                      | 348 x 0.51                                 | 11.5                        | 1.30                                      | 14.20 ± 0.30               | 0.277                                              | 690                          |
| 95                                                      | 468 x 0.51                                 | 12.9                        | 1.40                                      | 15.70 ± 0.30               | 0.210                                              | 900                          |
| 120                                                     | 589 x 0.51                                 | 14.8                        | 1.50                                      | 17.70 ± 0.30               | 0.164                                              | 1180                         |
| 150                                                     | 741 x 0.51                                 | 16.3                        | 1.60                                      | 20.30 ± 0.30               | 0.132                                              | 1460                         |

## 3 GKW/T EMC MULTI CORE, SCREENED, EBXL ROLLING STOCK CABLE

600/1000V AC, 900/1500V DC, 120°C

**Svarn 3 GKW/T EMC Multi Core Screened EBXL Rolling Stock Cables** are suitable for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle, rail/bus and other transport vehicles, switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL Grey color
- Screen : Tinned Copper Braid
- Separator : Polyester Tape
- Outer sheath : LSZH - EBXL Black color or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 600/1000V AC 900/1500V DC
- Specification : In addition to BS EN 50306spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

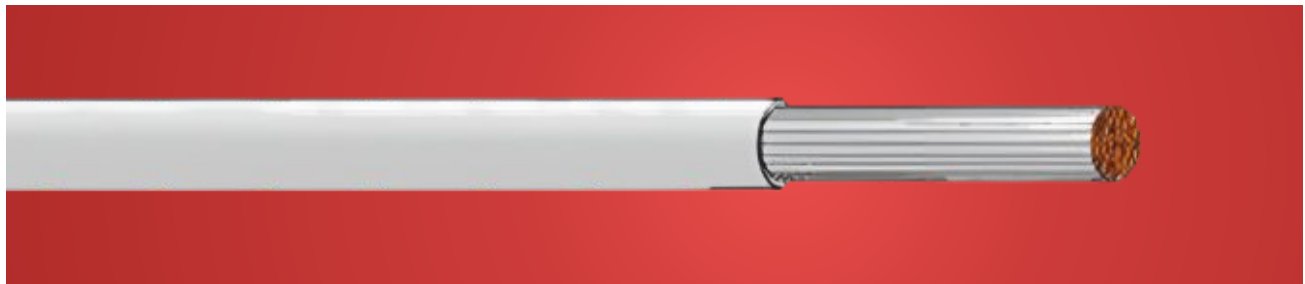
- Excellent resistance to high and low temperature.
- Outstanding Flame retardant
- Halogen free.
- Thin walled with excellent flexibility
- Low smoke density.

| NO. of cores X Cross section (Nos) X (mm) | Conductor Construction No of strands x strand Dia. (No's) X (mm) | Conductor Dia. (Mm) | Max. Conductor Resistance at 20°C (Ω/km) | Nom. Core Dia. (mm) | Nom. outer dia. (mm) | Cable weight (Kg/Km) approx. |
|-------------------------------------------|------------------------------------------------------------------|---------------------|------------------------------------------|---------------------|----------------------|------------------------------|
| 2 X 0.5                                   | 16 X 0.20                                                        | 0.93                | 40.1                                     | 2.00                | 6.5 ± 0.3            | 58                           |
| 3 X 0.5                                   | 16 X 0.20                                                        | 0.93                | 40.1                                     | 2.00                | 6.9 ± 0.3            | 75                           |
| 4 X 0.5                                   | 16 X 0.20                                                        | 0.93                | 40.1                                     | 2.00                | 7.6 ± 0.3            | 88                           |
| 7 X 0.5                                   | 16 X 0.20                                                        | 0.93                | 40.1                                     | 2.00                | 9.9 ± 0.3            | 140                          |
| 2 X 2 X 0.5                               | 16 X 0.20                                                        | 0.93                | 40.1                                     | 2.00                | 10.6 ± 0.4           | 150                          |
| 2 X 0.75                                  | 24 X 0.20                                                        | 1.14                | 26.7                                     | 2.20                | 7.1 ± 0.3            | 74                           |
| 3 X 0.75                                  | 24 X 0.20                                                        | 1.14                | 26.7                                     | 2.20                | 7.7 ± 0.3            | 90                           |
| 4 X 0.75                                  | 24 X 0.20                                                        | 1.14                | 26.7                                     | 2.20                | 8.4 ± 0.3            | 110                          |
| 9 X 0.75                                  | 24 X 0.20                                                        | 1.14                | 26.7                                     | 2.20                | 12.7 ± 0.4           | 240                          |
| 16                                        | 24 X 0.20                                                        | 1.14                | 26.7                                     | 2.20                | 15.4 ± 0.4           | 370                          |
| 5 X 2 X 0.75                              | 24 X 0.20                                                        | 1.14                | 26.7                                     | 2.20                | 16.0 ± 0.5           | 355                          |
| 2 X 1                                     | 32 X 0.20                                                        | 1.31                | 20.0                                     | 2.45                | 7.9 ± 0.3            | 90                           |
| 3 X 1                                     | 32 X 0.20                                                        | 1.31                | 20.0                                     | 2.45                | 8.5 ± 0.3            | 105                          |
| 4 X 1                                     | 32 X 0.20                                                        | 1.31                | 20.0                                     | 2.45                | 9.0 ± 0.3            | 140                          |
| 7 X 1                                     | 32 X 0.20                                                        | 1.31                | 20.0                                     | 2.45                | 12.0 ± 0.4           | 230                          |
| 2 X 1.5                                   | 30 X 0.25                                                        | 1.59                | 13.7                                     | 2.70                | 8.2 ± 0.3            | 110                          |
| 3 X 1.5                                   | 30 X 0.25                                                        | 1.59                | 13.7                                     | 2.70                | 8.6 ± 0.3            | 135                          |
| 4 X 1.5                                   | 30 X 0.25                                                        | 1.59                | 13.7                                     | 2.70                | 9.6 ± 0.3            | 165                          |
| 5 X 1.5                                   | 30 X 0.25                                                        | 1.59                | 13.7                                     | 2.70                | 10.9 ± 0.4           | 205                          |
| 2 X 2 X 1.5                               | 30 X 0.25                                                        | 1.59                | 13.7                                     | 2.70                | 12.7 ± 0.4           | 220                          |

## 3 GKW SINGLE CORE EBXL ROLLING STOCK CABLE

600/1000V AC, 900/1500V DC, 120°C

**Svarn 3 GKW Single Core EBXL Rolling Stock Cables** are suitable for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle, rail/bus and other transport vehicles, switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Insulation : LSZH - EBXL.
- Colour : Grey or as per Customer order.
- Specification : In addition to BS EN 50306 spec , cables also meet fire performance tests as per
- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)

### TECHNICAL DATA

- Operating Temperature : -40°C to +120°C
- Rated voltage : 600/1000V AC  
900/1500V DCV

### FEATURES

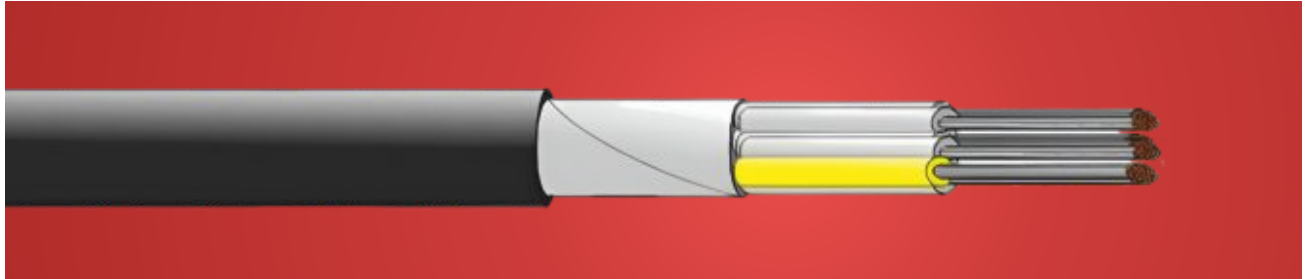
- Excellent resistance to high and low temperature.
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Dia.<br>(Mm) | Max.<br>Conductor<br>Resistance at<br>20°C (Ω/km) | Insulation<br>Thickness<br>(Mm) | Nom. Outer Dia.<br>(Mm) | Cable Weight<br>Approx.<br>(Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|------------------------|---------------------------------------------------|---------------------------------|-------------------------|------------------------------------|
| 0.5                              | 16 X 0.20                                                              | 0.93                   | 40.1                                              | 0.50                            | 2.00 ± 0.10             | 8                                  |
| 0.75                             | 24 X 0.20                                                              | 1.14                   | 26.7                                              | 0.50                            | 2.20 ± 0.10             | 11                                 |
| 1                                | 32 X 0.20                                                              | 1.31                   | 20.0                                              | 0.55                            | 2.45 ± 0.10             | 14                                 |
| 1.5                              | 30 X 0.25                                                              | 1.59                   | 13.7                                              | 0.55                            | 2.70 ± 0.10             | 19                                 |
| 2.5                              | 50 X 0.25                                                              | 2.05                   | 8.21                                              | 0.60                            | 3.30 ± 0.10             | 31                                 |
| 4                                | 56 X 0.30                                                              | 2.60                   | 5.09                                              | 0.65                            | 3.95 ± 0.10             | 46                                 |
| 6                                | 84 X 0.30                                                              | 3.19                   | 3.39                                              | 0.70                            | 4.70 ± 0.15             | 68                                 |
| 10                               | 80 X 0.40                                                              | 4.15                   | 1.95                                              | 0.80                            | 5.85 ± 0.15             | 110                                |
| 16                               | 126 X 0.40                                                             | 5.21                   | 1.24                                              | 0.90                            | 7.25 ± 0.15             | 166                                |
| 25                               | 196 X 0.40                                                             | 6.50                   | 0.795                                             | 1.00                            | 8.90 ± 0.20             | 252                                |
| 35                               | 276 X 0.40                                                             | 7.71                   | 0.565                                             | 1.10                            | 10.20 ± 0.20            | 355                                |
| 50                               | 396 X 0.40                                                             | 9.23                   | 0.393                                             | 1.20                            | 11.90 ± 0.20            | 500                                |
| 70                               | 360 X 0.50                                                             | 11.00                  | 0.277                                             | 1.30                            | 14.30 ± 0.30            | 695                                |
| 95                               | 475 X 0.50                                                             | 12.64                  | 0.210                                             | 1.40                            | 15.90 ± 0.30            | 905                                |
| 120                              | 608 X 0.50                                                             | 14.30                  | 0.164                                             | 1.50                            | 17.90 ± 0.40            | 1141                               |
| 150                              | 756 X 0.50                                                             | 15.95                  | 0.132                                             | 1.60                            | 20.30 ± 0.40            | 1417                               |
| 185                              | 925 X 0.50                                                             | 17.64                  | 0.108                                             | 1.70                            | 22.00 ± 0.40            | 1777                               |
| 240                              | 1221 X 0.50                                                            | 20.27                  | 0.0817                                            | 1.90                            | 25.20 ± 0.50            | 2315                               |
| 300                              | 1525 X 0.50                                                            | 22.65                  | 0.0654                                            | 2.00                            | 28.00 ± 0.50            | 2878                               |

## 3 GKW/T MULTI CORE EBXL ROLLING STOCK CABLE

600/1000V AC, 900/1500V DC, 120°C

**Svarn 3 GKW/T Multi Core EBXL Rolling Stock Cables** are suitable for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle, rail/bus and other transport vehicles, switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL.
- Outer sheath : LSZH - EBXL. Black colour.

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 600/1000V AC 900/1500V DC
- Specification : In addition to BS EN 50306 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temperature.
- Outstanding Flame retardant
- Halogen free.
- Thin walled with excellent flexibility

| NO. of cores X Cross section (Nos) X (mm) | Conductor Construction No of strands x strand Dia. (No's) X (mm) | Conductor Dia. (Mm) | Max. Conductor Resistance at 20°C (Ω/km) | Nom. Core Dia. (mm) | Nom. outer dia. (mm) | Cable weight (Kg/Km) approx. |
|-------------------------------------------|------------------------------------------------------------------|---------------------|------------------------------------------|---------------------|----------------------|------------------------------|
| 2 X 0.5                                   | 16 X 0.20                                                        | 0.93                | 40.10                                    | 2.00                | 6.9 ± 0.3            | 47                           |
| 3 X 0.5                                   | 16 X 0.20                                                        | 0.93                | 40.10                                    | 2.00                | 6.25 ± 0.3           | 54                           |
| 5 X 0.5                                   | 16 X 0.20                                                        | 0.93                | 40.10                                    | 2.00                | 7.6 ± 0.3            | 85                           |
| 6 X 0.5                                   | 16 X 0.20                                                        | 0.93                | 40.10                                    | 2.00                | 8.4 ± 0.3            | 100                          |
| 9 X 0.5                                   | 16 X 0.20                                                        | 0.93                | 40.10                                    | 2.00                | 10.5 ± 0.4           | 105                          |
| 12 X 0.5                                  | 16 X 0.20                                                        | 0.93                | 40.10                                    | 2.20                | 10.8 ± 0.4           | 170                          |
| 15 X 0.5                                  | 16 X 0.20                                                        | 0.93                | 40.10                                    | 2.20                | 12.3 ± 0.4           | 210                          |
| 18 X 0.5                                  | 16 X 0.20                                                        | 0.93                | 26.70                                    | 2.20                | 12.9 ± 0.4           | 240                          |
| 2 X 0.75                                  | 24 X 0.20                                                        | 1.14                | 26.70                                    | 2.20                | 6.4 ± 0.3            | 57                           |
| 3 X 0.75                                  | 24 X 0.20                                                        | 1.14                | 26.70                                    | 2.20                | 6.9 ± 0.3            | 69                           |
| 4 X 0.75                                  | 24 X 0.20                                                        | 1.14                | 26.70                                    | 2.20                | 7.6 ± 0.3            | 84                           |
| 5G X 0.75                                 | 24 X 0.20                                                        | 1.14                | 26.70                                    | 2.20                | 8.5 ± 0.3            | 105                          |
| 7G X 0.75                                 | 24 X 0.20                                                        | 1.14                | 26.70                                    | 2.20                | 10.1 ± 0.3           | 150                          |
| 2 X 1.0                                   | 32 X 0.20                                                        | 1.31                | 20.0                                     | 2.45                | 7.1 ± 0.3            | 70                           |
| 4 X 1.0                                   | 32 X 0.20                                                        | 1.31                | 20.0                                     | 2.45                | 8.6 ± 0.3            | 110                          |
| 6 X 1.0                                   | 32 X 0.20                                                        | 1.31                | 20.0                                     | 2.45                | 10.4 ± 0.3           | 155                          |
| 9 X 1.0                                   | 32 X 0.20                                                        | 1.31                | 20.0                                     | 2.45                | 13.1 ± 0.3           | 240                          |
| 2 X 1.5                                   | 30 X 0.25                                                        | 1.59                | 13.70                                    | 2.70                | 7.8 ± 0.3            | 90                           |
| 3 X 1.5                                   | 30 X 0.25                                                        | 1.59                | 13.70                                    | 2.70                | 8.4 ± 0.3            | 110                          |
| 4 X 1.5                                   | 30 X 0.25                                                        | 1.59                | 13.70                                    | 2.70                | 9.3 ± 0.3            | 135                          |
| 5 X 1.5                                   | 30 X 0.25                                                        | 1.59                | 13.70                                    | 2.70                | 10.4 ± 0.4           | 170                          |
| 7 X 1.5                                   | 30 X 0.25                                                        | 1.59                | 13.70                                    | 2.70                | 12.2 ± 0.4           | 240                          |
| 7G X 1.5                                  | 30 X 0.25                                                        | 1.59                | 13.70                                    | 2.70                | 12.2 ± 0.4           | 240                          |
| 2 X 2.5                                   | 50 X 0.25                                                        | 1.59                | 8.21                                     | 3.30                | 9.0 ± 0.3            | 125                          |
| 3 X 2.5                                   | 50 X 0.25                                                        | 1.59                | 8.21                                     | 3.30                | 9.7 ± 0.3            | 160                          |

## 4 GKW SINGLE CORE, SHEATHED, EBXL ROLLING STOCK CABLE

1800/3000V AC, 2700/4500V DC, 120°C

**Svarn 4 GKW Single Core Sheathed EBXL Rolling Stock Cables** are suitable for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle, rail/bus and other transport vehicles, switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL. Grey or as per customer order
- Outer sheath : LSZH - EBXL
- Black colour or as per Customer order

### TECHNICAL DATA

- Operating Temperature : -40°C to +120°C
- Rated Voltage : 800/3000V AC 2700/4500V DC
- Specification : In addition to BS EN 50306 spec, cables also meet fire performance tests As per EN 45545-2

### FEATURES

- Excellent resistance to high and low temperature.
- Outstanding Flame retardant
- Halogen free.
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant
- High melting points for insulation

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Insulation<br>Thickness<br>(Mm) | Min. Sheath<br>Thickness<br>(Mm) | Nom. Outer Dia.<br>(Mm) | Cable Weight<br>Approx.<br>(Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|------------------------|------------------------------------------------|---------------------------------|----------------------------------|-------------------------|------------------------------------|
| 1.5                              | 30 X 0.25                                                              | 1.6                    | 13.70                                          | 0.30                            | 0.40                             | 3.2 ± 0.10              | 20                                 |
| 2.5                              | 50 X 0.25                                                              | 2.1                    | 8.21                                           | 0.30                            | 0.40                             | 3.7 ± 0.15              | 30                                 |
| 4                                | 56 X 0.30                                                              | 2.6                    | 5.09                                           | 0.35                            | 0.45                             | 4.5 ± 0.15              | 50                                 |
| 6                                | 84 X 0.30                                                              | 3.3                    | 3.39                                           | 0.35                            | 0.45                             | 5.1 ± 0.15              | 70                                 |
| 10                               | 80 X 0.40                                                              | 4.2                    | 1.95                                           | 0.40                            | 0.50                             | 6.3 ± 0.20              | 110                                |
| 16                               | 126 X 0.40                                                             | 5.5                    | 1.24                                           | 0.50                            | 0.70                             | 8.3 ± 0.20              | 180                                |
| 25                               | 189 X 0.40                                                             | 6.8                    | 0.795                                          | 0.60                            | 0.80                             | 10.2 ± 0.30             | 260                                |
| 35                               | 259 X 0.40                                                             | 7.8                    | 0.565                                          | 0.65                            | 0.89                             | 11.7 ± 0.30             | 360                                |
| 50                               | 378 X 0.40                                                             | 9.5                    | 0.393                                          | 0.70                            | 0.90                             | 13.6 ± 0.30             | 520                                |
| 70                               | 348 X 0.50                                                             | 11.5                   | 0.277                                          | 0.75                            | 0.95                             | 16.6 ± 0.30             | 720                                |
| 95                               | 456 X 0.50                                                             | 12.9                   | 0.210                                          | 0.85                            | 1.05                             | 17.8 ± 0.30             | 950                                |
| 120                              | 570 X 0.50                                                             | 14.8                   | 0.164                                          | 0.95                            | 1.15                             | 19.6 ± 0.30             | 1240                               |
| 150                              | 741 X 0.50                                                             | 16.3                   | 0.132                                          | 1.00                            | 1.20                             | 21.9 ± 0.30             | 1520                               |
| 185                              | 925 X 0.50                                                             | 18.0                   | 0.0817                                         | 1.05                            | 1.25                             | 23.8 ± 0.30             | 1880                               |
| 240                              | 1221 X 0.50                                                            | 20.5                   | 0.817                                          | 1.10                            | 1.30                             | 26.8 ± 0.30             | 2400                               |
| 300                              | 1525 X 0.50                                                            | 23.0                   | 0.0654                                         | 1.15                            | 1.35                             | 29.7 ± 0.30             | 2940                               |
| 400                              | 2013 X 0.50                                                            | 29.0                   | 0.0495                                         | 1.20                            | 1.40                             | 35.8 ± 0.50             | 3900                               |

## 4 GKW/T EMC SINGLE CORE, SCREENED, EBXL ROLLING STOCK CABLE

1800/3000V AC, 2700/4500V DC, 120°C

**Svarn 4 GKW/T EMC Single Core Screened EBXL Rolling Stock Cables** are suitable for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle, rail/bus and other transport vehicles, switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL White colour
- Inner sheath : LSZH - EBXL Black colour
- Tinned Copper Braid Screen
- Separator : Polyester Tape
- Outer sheath : LSZH - EBXL Black colour or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 1800/3000V AC 2700/4500V DC
- Specification : In addition to BS EN 50264 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temp.
- Outstanding Flame retardant
- Halogen free.
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant
- High melting points for insulation

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Dia.<br>(Mm) | Max.<br>Conductor<br>Resistance at<br>20°C (Ω/km) | Nom. Core Dia.<br>(Mm) | Nom. Outer Dia.<br>(Mm) | Cable Weight<br>Approx.<br>(Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|------------------------|---------------------------------------------------|------------------------|-------------------------|------------------------------------|
| 1.5                              | 30 X 0.25                                                              | 1.6                    | 13.7                                              | 3.20                   | 5.40 ± 0.15             | 56                                 |
| 2.5                              | 50 X 0.25                                                              | 2.1                    | 8.21                                              | 3.70                   | 6.10 ± 0.15             | 70                                 |
| 4                                | 56 X 0.30                                                              | 2.6                    | 5.09                                              | 4.50                   | 6.80 ± 0.15             | 95                                 |
| 6                                | 84 X 0.30                                                              | 3.3                    | 3.39                                              | 5.10                   | 7.70 ± 0.15             | 120                                |
| 10                               | 80 X 0.40                                                              | 4.2                    | 1.95                                              | 6.30                   | 9.20 ± 0.20             | 185                                |
| 15                               | 126 X 0.40                                                             | 5.5                    | 1.24                                              | 8.30                   | 11.30 ± 0.20            | 280                                |
| 25                               | 189 X 0.40                                                             | 6.8                    | 0.795                                             | 10.20                  | 13.70 ± 0.25            | 400                                |
| 35                               | 259 X 0.40                                                             | 7.8                    | 0.565                                             | 11.70                  | 15.10 ± 0.25            | 530                                |
| 50                               | 378 X 0.40                                                             | 9.5                    | 0.393                                             | 13.60                  | 17.00 ± 0.30            | 710                                |
| 70                               | 348 X 0.50                                                             | 11.5                   | 0.277                                             | 16.60                  | 19.50 ± 0.30            | 980                                |
| 95                               | 456 X 0.50                                                             | 12.9                   | 0.210                                             | 17.80                  | 21.20 ± 0.30            | 1240                               |
| 120                              | 570 X 0.50                                                             | 14.8                   | 0.164                                             | 19.60                  | 23.60 ± 0.30            | 1500                               |
| 150                              | 741 X 0.50                                                             | 16.3                   | 0.132                                             | 21.90                  | 26.20 ± 0.30            | 1900                               |
| 185                              | 925 X 0.50                                                             | 18.0                   | 0.108                                             | 23.80                  | 28.20 ± 0.30            | 2310                               |
| 240                              | 1221 X 0.50                                                            | 20.5                   | 0.0817                                            | 26.80                  | 31.40 ± 0.30            | 2900                               |
| 300                              | 1525 X 0.50                                                            | 23.0                   | 0.0654                                            | 29.70                  | 34.60 ± 0.40            | 3600                               |

## 9 GKW SINGLE CORE, SHEATHED, EBXL ROLLING STOCK CABLE

3600/6000V AC, 5400/9000V DC, 120°C

**Svarn 9 GKW Single Core Sheathed EBXL Rolling Stock Cables** are suitable for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle, rail/bus and other transport vehicles, switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL White colour
- Outer sheath : LSZH - EBXL. Black colour or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 600/1000V AC 900/1500V DC
- Specification : In addition to BS EN 50264 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temp.
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant
- High melting points for insulation
- Resistant to corona effect

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Dia. (Mm) | Max. Conductor Resistance at 20°C (Ω/km) | Min. Insulation Thickness (Mm) | Min. Sheath Thickness (Mm) | Nom. Outer Dia. (Mm) | Cable Weight Approx. (Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|---------------------|------------------------------------------|--------------------------------|----------------------------|----------------------|------------------------------|
| 1.5                              | 30 X 0.25                                                              | 1.6                 | 13.7                                     | 0.60                           | 0.70                       | 4.5                  | 31                           |
| 2.5                              | 50 X 0.25                                                              | 2.1                 | 8.21                                     | 0.65                           | 0.75                       | 5.0                  | 43                           |
| 4                                | 56 X 0.30                                                              | 2.6                 | 5.09                                     | 0.65                           | 0.75                       | 5.5                  | 60                           |
| 6                                | 84 X 0.30                                                              | 3.3                 | 3.39                                     | 0.70                           | 0.80                       | 6.3                  | 81                           |
| 10                               | 80 X 0.40                                                              | 4.2                 | 1.95                                     | 0.70                           | 0.80                       | 7.5                  | 124                          |
| 16                               | 126 X 0.40                                                             | 5.5                 | 1.24                                     | 0.80                           | 0.95                       | 9.4                  | 200                          |
| 25                               | 189 X 0.40                                                             | 6.8                 | 0.795                                    | 0.85                           | 0.95                       | 10.9                 | 295                          |
| 35                               | 259 X 0.40                                                             | 7.8                 | 0.565                                    | 0.95                           | 1.05                       | 12.5                 | 397                          |
| 50                               | 378 X 0.40                                                             | 9.5                 | 0.393                                    | 1.00                           | 1.10                       | 14.4                 | 541                          |
| 70                               | 348 X 0.50                                                             | 11.5                | 0.277                                    | 1.05                           | 1.15                       | 16.5                 | 732                          |
| 95                               | 456 X 0.50                                                             | 12.9                | 0.210                                    | 1.20                           | 1.30                       | 18.3                 | 977                          |
| 120                              | 570 X 0.50                                                             | 14.8                | 0.164                                    | 1.30                           | 1.40                       | 20.6                 | 1230                         |
| 150                              | 741 X 0.50                                                             | 16.3                | 0.132                                    | 1.35                           | 1.45                       | 22.9                 | 1526                         |
| 185                              | 847 X 0.50                                                             | 18.0                | 0.108                                    | 1.40                           | 1.50                       | 25.0                 | 1858                         |
| 240                              | 1147 X 0.50                                                            | 20.5                | 0.0817                                   | 1.50                           | 1.60                       | 27.5                 | 2374                         |
| 300                              | 1443 X 0.50                                                            | 23.0                | 0.0654                                   | 1.70                           | 1.80                       | 30.8                 | 2933                         |
| 400                              | 2016 X 0.50                                                            | 29.0                | 0.0495                                   | 1.80                           | 1.90                       | 35.0                 | 3950                         |

## 9 GKW/T EMC SINGLE CORE, SCREENED, EBXL ROLLING STOCK CABLE

3600/6000V AC, 5400/9000V DC, 120°C

**Svarn9 GKW/T EMC Single Core Screened EBXL Rolling Stock Cables** are suitable for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle, rail/bus and other transport vehicles, switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL
- Inner sheath : LSZH - EBXL Black colour
- Tinned Copper Braid Screen
- Separator : Polyester Tape
- Outer sheath : LSZH - EBXL Black colour or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 3600/6000V AC, 5400/9000V DC.
- Specification : In addition to BS EN 50264-1 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temp.
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant
- High melting points for insulation

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Max.<br>Conductor<br>Resistance at<br>20°C (Ω/km) | Min. Core Dia.<br>(Mm) | Nom. Outer Dia.<br>(Mm) | Cable Weight<br>Approx.<br>(Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|---------------------------------------------------|------------------------|-------------------------|------------------------------------|
| 1.5                              | 30 X 0.25                                                              | 13.7                                              | 4.35                   | 6.5                     | 71                                 |
| 2.5                              | 50 X 0.25                                                              | 8.21                                              | 4.85                   | 7.2                     | 87                                 |
| 4                                | 56 X 0.30                                                              | 5.09                                              | 5.65                   | 8.2                     | 118                                |
| 6                                | 84 X 0.30                                                              | 3.39                                              | 6.25                   | 9.0                     | 147                                |
| 10                               | 80 X 0.40                                                              | 1.95                                              | 7.35                   | 10.3                    | 216                                |
| 15                               | 126 X 0.40                                                             | 1.24                                              | 9.25                   | 12.3                    | 323                                |
| 25                               | 189 X 0.40                                                             | 0.795                                             | 10.85                  | 14.2                    | 382                                |
| 35                               | 259 X 0.40                                                             | 0.565                                             | 12.35                  | 15.6                    | 539                                |
| 50                               | 378 X 0.40                                                             | 0.393                                             | 14.35                  | 17.6                    | 725                                |
| 70                               | 348 X 0.50                                                             | 0.277                                             | 16.35                  | 20.0                    | 951                                |
| 95                               | 456 X 0.50                                                             | 0.210                                             | 18.35                  | 21.9                    | 1215                               |
| 120                              | 570 X 0.50                                                             | 0.164                                             | 20.65                  | 24.6                    | 1480                               |
| 150                              | 741 X 0.50                                                             | 0.132                                             | 22.65                  | 27.0                    | 1862                               |
| 185                              | 847 X 0.50                                                             | 0.108                                             | 24.85                  | 29.0                    | 2176                               |
| 240                              | 1147 X 0.50                                                            | 0.0817                                            | 27.85                  | 32.2                    | 2773                               |
| 300                              | 1443 X 0.50                                                            | 0.0654                                            | 30.70                  | 35.4                    | 3450                               |

## SINGLE CORE HIGH CONDUCTIVITY COPPER CONDUCTOR RUBBER COMPOUND SHEATHED WELDING CABLE

### EM-5 90°C, as per BS 638 Specification

**Svarn Single Core High Conductivity Copper Conductor Rubber Compound Sheathed Welding Cables** are suitable for transmission of high currents from the electric welding machine to the welding tool, assembly lines and conveyor systems, in machine tool and motor car manufacturing, ship building, Manually and automatically operated line and spot welding machines.



#### CABLE STRUCTURE

- Conductor : Plain or Tinned Annealed, high conductivity, class 6 copper wires
- Separator : Dry Paper, Polyester Tape
- Sheath : Rubber compound type EM5 Conforming to BS 7655:section 2.4 Optional inner layer shall be rubber compound type EM5 or type E17 conforming to HD 22.152

#### TECHNICAL DATA

- Temperature Range : 90°C
- Voltage for Testing : 1000 V AC
- Bending Radius (Minimum) : 6x Overall dia

#### FEATURES

- Flexibility under rough conditions
- Excellent Flame Retardant
- Highly Resistant to effects of cold, heat and fire

| Nominal Conductor area (Mm <sup>2</sup> ) | Maximum Strand Dia. (Mm) | Thickness of Insulation (Mm) | Approx. overall Dia. (Kg/Km) | Approx. weight of cable (Kg/Km) | Maximum Conductor Resistance at 20°C (Ω/km) |              |
|-------------------------------------------|--------------------------|------------------------------|------------------------------|---------------------------------|---------------------------------------------|--------------|
|                                           |                          |                              |                              |                                 | Plain Wires                                 | Tinned Wires |
| 10                                        | 0.21                     | 2.0                          | 8.4                          | 140                             | 1.21                                        | 1.95         |
| 16                                        | 0.21                     | 2.0                          | 9.5                          | 196                             | 1.21                                        | 1.24         |
| 25                                        | 0.21                     | 2.0                          | 10.8                         | 280                             | 0.780                                       | 0.795        |
| 35                                        | 0.21                     | 2.0                          | 12.0                         | 370                             | 0.554                                       | 0.565        |
| 50                                        | 0.21                     | 2.2                          | 14.0                         | 518                             | 0.386                                       | 0.393        |
| 70                                        | 0.21                     | 2.4                          | 16.1                         | 704                             | 0.272                                       | 0.277        |
| 95                                        | 0.21                     | 2.6                          | 18.3                         | 942                             | 0.206                                       | 0.210        |
| 120                                       | 0.51                     | 2.8                          | 20.2                         | 1175                            | 0.161                                       | 0.164        |
| 150                                       | 0.51                     | 3.0                          | 22.3                         | 1450                            | 0.129                                       | 0.132        |
| 185                                       | 0.51                     | 3.2                          | 24.5                         | 1780                            | 0.106                                       | 0.108        |

| Ambient Temperature °C | Factor |      |
|------------------------|--------|------|
|                        | 85°C   | 60°C |
| 30                     | 0.96   | 0.92 |
| 35                     | 0.91   | 0.84 |
| 40                     | 0.87   | 0.75 |
| 45                     | 0.82   | 0.65 |

## BS EN 50264-3-1 SINGLE CORE, SHEATHED, EBXL ROLLING STOCK CABLE

600/6000V AC, 5400V DC, 120°C

Svarn BS EN 50264-3-1 Single Core Sheathed EBXL Rolling Stock Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicles.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed, Electro Tinned Copper, Class 5
- Conductor screen : Semi-conductor material
- Insulation : EBXL - EI109
- Outer sheath : EBXL - EM104

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Specification : BS EN 50264 - 3 - 1
- Conductor : BS EN 60228, Class 5
- In addition to BS EN 50264 spec, cables also meet fire performance tests as per UNI CEI 11170-3, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temp.
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Resistance to Oil, fuel, ozone and weathering
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked.
- Resistance to corona effect

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Dia. | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Insulation<br>thickness<br>(Mm) | Sheath<br>Thickness<br>(Mm) | Outer Dia .<br>(Mm) | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|----------------|------------------------------------------------|---------------------------------|-----------------------------|---------------------|------------------------------------|
| 2.5                              | 50 X 0.25                                                              | 1.95           | 8.21                                           | 2.6                             | 0.8                         | 8.9                 | 108                                |
| 4                                | 56 X 0.30                                                              | 2.5            | 5.09                                           | 2.6                             | 0.8                         | 9.4                 | 130                                |
| 6                                | 84 X 0.30                                                              | 3.0            | 3.39                                           | 2.6                             | 0.8                         | 10.0                | 156                                |
| 10                               | 80 X 0.40                                                              | 3.9            | 1.95                                           | 2.6                             | 0.8                         | 11.0                | 205                                |
| 16                               | 126 X 0.40                                                             | 5.0            | 1.24                                           | 2.9                             | 0.8                         | 11.9                | 271                                |
| 25                               | 196 X 0.40                                                             | 6.4            | 0.795                                          | 2.9                             | 1.0                         | 14.5                | 411                                |
| 35                               | 276 X 0.40                                                             | 7.7            | 0.565                                          | 2.9                             | 1.0                         | 15.7                | 510                                |
| 50                               | 396 X 0.40                                                             | 9.2            | 0.393                                          | 2.9                             | 1.0                         | 17.4                | 671                                |
| 70                               | 360 X 0.40                                                             | 11.0           | 0.277                                          | 2.9                             | 1.0                         | 19.0                | 866                                |
| 95                               | 475 X 0.40                                                             | 12.5           | 0.210                                          | 2.9                             | 1.0                         | 20.6                | 1102                               |
| 120                              | 608 X 0.50                                                             | 14.2           | 0.164                                          | 2.9                             | 1.2                         | 22.4                | 1355                               |
| 150                              | 756 X 0.50                                                             | 15.8           | 0.132                                          | 3.2                             | 1.2                         | 24.4                | 1641                               |
| 185                              | 925 X 0.50                                                             | 17.5           | 0.108                                          | 3.4                             | 1.2                         | 26.9                | 2005                               |
| 240                              | 1221 X 0.50                                                            | 20.1           | 0.0871                                         | 3.4                             | 1.4                         | 31.2                | 2565                               |
| 300                              | 1525 X 0.50                                                            | 22.5           | 0.0654                                         | 3.4                             | 1.4                         | 34.0                | 3113                               |

## BS EN 50264-3-1 SINGLE CORE, SHEATHED, EBXL ROLLING STOCK CABLE

1800/3000V AC, 2700V DC, 120°C

Svarn BS EN 50264-3-1 Single Core Sheathed EBXL Rolling Stock Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicles.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5
- Conductor screen : Semi-conductor material
- Insulation : EBXL - EI109
- Outer sheath : EBXL -EM104

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Specification : BS EN 50264 - 3 - 1
- Conductor : BS EN 60228, Class 5
- In addition to BS EN 50264 spec, cables also meet fire performance tests as per UNI CEI 11170-3

### FEATURES

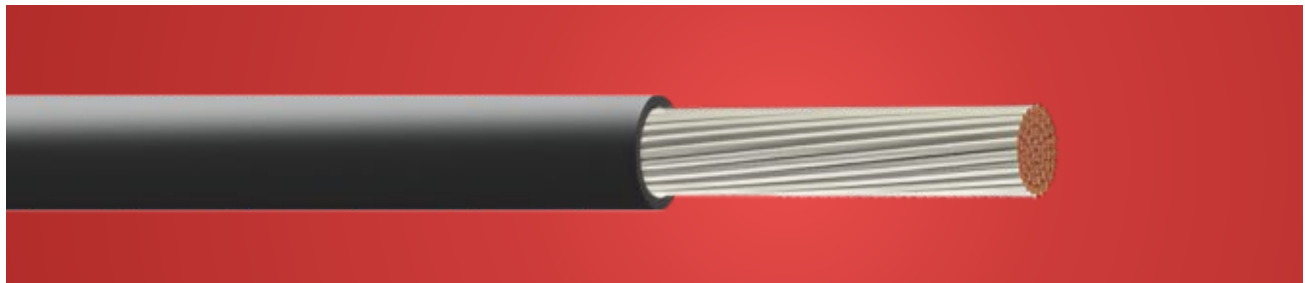
- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free.
- Thin walled with excellent flexibility
- Resistance to Oil, fuel, ozone and weathering
- Low smoke density
- Soldering iron resistant

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Dia. | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Insulation<br>thickness<br>(Mm) | Sheath<br>Thickness<br>(Mm) | Outer Dia .<br>(Mm) | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|----------------|------------------------------------------------|---------------------------------|-----------------------------|---------------------|------------------------------------|
| 1.5                              | 30 X 0.25                                                              | 1.5            | 13.7                                           | 1.3                             | 0.8                         | 5.9                 | 51                                 |
| 2.5                              | 50 X 0.25                                                              | 1.95           | 8.21                                           | 1.3                             | 0.8                         | 6.4                 | 64                                 |
| 4                                | 56 X 0.30                                                              | 2.5            | 5.09                                           | 1.3                             | 0.8                         | 6.9                 | 82                                 |
| 6                                | 84 X 0.30                                                              | 3.0            | 3.39                                           | 1.3                             | 0.8                         | 7.5                 | 105                                |
| 10                               | 80 X 0.40                                                              | 3.9            | 1.95                                           | 1.5                             | 0.8                         | 8.9                 | 160                                |
| 16                               | 126 X 0.40                                                             | 5.0            | 1.24                                           | 1.5                             | 0.8                         | 9.9                 | 220                                |
| 25                               | 196 X 0.40                                                             | 6.4            | 0.79                                           | 1.8                             | 1.0                         | 12.3                | 342                                |
| 35                               | 276 X 0.40                                                             | 7.7            | 0.565                                          | 1.8                             | 1.0                         | 13.5                | 470                                |
| 50                               | 396 X 0.40                                                             | 9.2            | 0.40                                           | 1.8                             | 1.0                         | 15.0                | 590                                |
| 70                               | 360 X 0.40                                                             | 11.0           | 0.28                                           | 1.8                             | 1.0                         | 16.6                | 820                                |
| 95                               | 475 X 0.40                                                             | 12.5           | 0.21                                           | 2.2                             | 1.0                         | 19.0                | 1050                               |
| 120                              | 608 X 0.50                                                             | 14.2           | 0.16                                           | 2.2                             | 1.0                         | 20.4                | 1345                               |
| 150                              | 756 X 0.50                                                             | 15.8           | 0.13                                           | 2.2                             | 1.2                         | 22.8                | 1634                               |
| 185                              | 925 X 0.50                                                             | 17.5           | 0.11                                           | 2.4                             | 1.2                         | 25.1                | 1895                               |
| 240                              | 1221 X 0.50                                                            | 20.1           | 0.08                                           | 2.4                             | 1.2                         | 27.6                | 2400                               |
| 300                              | 1525 X 0.50                                                            | 22.5           | 0.06                                           | 2.4                             | 1.2                         | 29.9                | 3000                               |

## BS EN 50264-3-1 SINGLE CORE EBXL ROLLING STOCK CABLE

600/1000V AC, 120°C

**Svarn BS EN 50264-3-1 Single Core EBXL Rolling Stock Cables** are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicles.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5
- Conductor screen : Semi-conductor material
- Insulation : EBXL - EI109
- Outer sheath : EBXL - EM104 (Black)

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Specification : BS EN 50264 - 3 - 1
- Conductor : BS EN 60228, Class 5
- In addition to BS EN 50264 spec, cables also meet fire performance tests as per UNI CEI 11170-3

### FEATURES

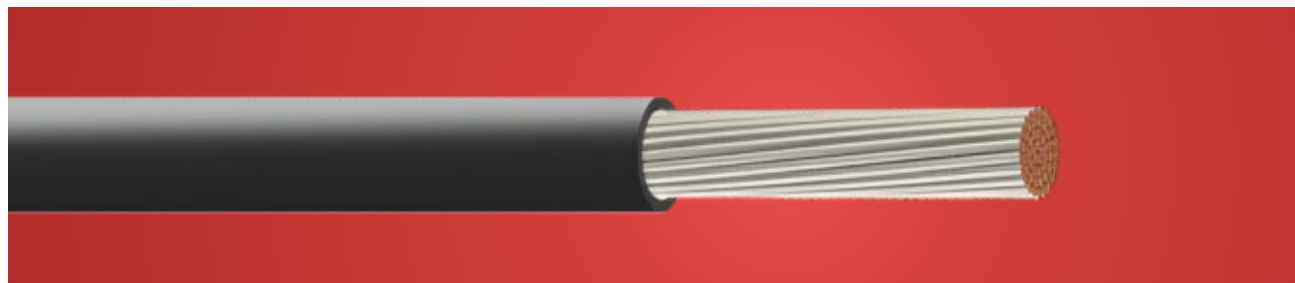
- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Resistance to Oil, fuel, ozone and weathering.
- Low smoke density
- Soldering iron resistant

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Dia. | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Insulation<br>thickness<br>(Mm) | Outer Dia. (Mm) |      | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|----------------|------------------------------------------------|---------------------------------|-----------------|------|------------------------------------|
|                                  |                                                                        |                |                                                |                                 | Min.            | Max. |                                    |
| 1                                | 32 X 0.20                                                              | 1.25           | 20.0                                           | 0.6                             | 2.4             | 2.8  | 15                                 |
| 1.5                              | 30 X 0.25                                                              | 1.5            | 13.7                                           | 0.7                             | 2.8             | 3.3  | 20                                 |
| 2.5                              | 50 X 0.25                                                              | 1.95           | 8.21                                           | 0.7                             | 3.2             | 3.8  | 30                                 |
| 4                                | 56 X 0.30                                                              | 2.5            | 5.09                                           | 0.7                             | 3.8             | 4.4  | 45                                 |
| 6                                | 84 X 0.30                                                              | 3.0            | 3.39                                           | 0.7                             | 4.2             | 5.0  | 65                                 |
| 10                               | 80 X 0.40                                                              | 3.9            | 1.95                                           | 0.7                             | 5.1             | 5.9  | 105                                |
| 16                               | 126 X 0.40                                                             | 5.0            | 1.24                                           | 0.7                             | 6.1             | 7.2  | 165                                |
| 25                               | 196 X 0.40                                                             | 6.4            | 0.795                                          | 0.9                             | 7.8             | 9.1  | 255                                |
| 35                               | 276 X 0.40                                                             | 7.7            | 0.565                                          | 0.9                             | 9.0             | 10.6 | 350                                |
| 50                               | 396 X 0.40                                                             | 9.2            | 0.393                                          | 1.0                             | 10.6            | 12.4 | 495                                |
| 70                               | 360 X 0.40                                                             | 11.0           | 0.277                                          | 1.1                             | 12.5            | 14.6 | 690                                |
| 95                               | 475 X 0.40                                                             | 12.5           | 0.210                                          | 1.1                             | 13.9            | 16.3 | 915                                |
| 120                              | 608 X 0.50                                                             | 14.2           | 0.164                                          | 1.2                             | 15.7            | 18.4 | 1155                               |
| 150                              | 756 X 0.50                                                             | 15.8           | 0.132                                          | 1.4                             | 17.6            | 20.6 | 1440                               |
| 185                              | 925 X 0.50                                                             | 17.5           | 0.108                                          | 1.6                             | 19.6            | 22.9 | 1780                               |
| 240                              | 1221 X 0.50                                                            | 20.1           | 0.0871                                         | 1.7                             | 22.2            | 26.0 | 2295                               |
| 300                              | 1525 X 0.50                                                            | 22.5           | 0.0654                                         | 1.8                             | 24.6            | 28.8 | 2850                               |
| 400                              | 2013 X 0.50                                                            | 25.8           | 0.0495                                         | 2.0                             | 28.1            | 32.9 | 3800                               |

## BS EN 50264-3-1 SINGLE CORE EBXL ROLLING STOCK CABLE

1800/3000V AC, 120°C

Svarn BS EN 50264-3-1 Single Core EBXL Rolling Stock Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicles.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5
- Conductor screen : Semi-conductor material
- Insulation : EBXL - Ei109 (Black)

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 1800/3000V AC
- Specification : BS EN 50264 - 3 - 1
- Conductor : BS EN 60228, Class 5
- In addition to BS EN 50264 spec, cables also meet fire performance tests as per UNI CEI 11170-3

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Resistance to Oil, fuel, ozone and weathering
- Low smoke density
- Soldering iron resistant

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Dia. | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Insulation<br>thickness<br>(Mm) | Outer Dia. (Mm) |      | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|----------------|------------------------------------------------|---------------------------------|-----------------|------|------------------------------------|
|                                  |                                                                        |                |                                                |                                 | Min.            | Max. |                                    |
| 1.5                              | 30 X 0.25                                                              | 1.5            | 13.7                                           | 2.0                             | 5.3             | 6.2  | 55                                 |
| 2.5                              | 50 X 0.25                                                              | 1.95           | 8.21                                           | 2.0                             | 5.7             | 6.7  | 65                                 |
| 4                                | 56 X 0.30                                                              | 2.5            | 5.09                                           | 2.0                             | 6.2             | 7.3  | 85                                 |
| 6                                | 84 X 0.30                                                              | 3.0            | 3.39                                           | 2.0                             | 6.7             | 7.8  | 110                                |
| 10                               | 80 X 0.40                                                              | 3.9            | 1.95                                           | 2.0                             | 7.5             | 8.8  | 155                                |
| 16                               | 126 X 0.40                                                             | 5.0            | 1.24                                           | 2.0                             | 8.6             | 10.0 | 220                                |
| 25                               | 196 X 0.40                                                             | 6.4            | 0.795                                          | 2.0                             | 9.9             | 11.6 | 315                                |
| 35                               | 276 X 0.40                                                             | 7.7            | 0.565                                          | 2.0                             | 11.1            | 13.0 | 415                                |
| 50                               | 396 X 0.40                                                             | 9.2            | 0.393                                          | 2.0                             | 12.5            | 14.6 | 565                                |
| 70                               | 360 X 0.40                                                             | 11.0           | 0.277                                          | 2.0                             | 14.2            | 16.6 | 755                                |
| 95                               | 475 X 0.40                                                             | 12.5           | 0.210                                          | 2.2                             | 16.0            | 18.7 | 1010                               |
| 120                              | 608 X 0.50                                                             | 14.2           | 0.164                                          | 2.2                             | 17.6            | 20.6 | 1245                               |
| 150                              | 756 X 0.50                                                             | 15.8           | 0.132                                          | 2.2                             | 19.1            | 22.3 | 1530                               |
| 185                              | 925 X 0.50                                                             | 17.5           | 0.108                                          | 2.4                             | 20.9            | 24.4 | 1875                               |
| 240                              | 1221 X 0.50                                                            | 20.1           | 0.0871                                         | 2.4                             | 23.7            | 27.5 | 2385                               |
| 300                              | 1525 X 0.50                                                            | 22.5           | 0.0654                                         | 2.4                             | 25.6            | 30.1 | 2940                               |
| 400                              | 2013 X 0.50                                                            | 25.8           | 0.0495                                         | 2.6                             | 29.2            | 34.2 | 3885                               |

## BS EN 50264-3-2 MULTI CORE EBXL ROLLING STOCK CABLE

600/1000V AC, 120°C

**Svarn BS EN 50264-3-2 Multi Core EBXL Rolling Stock Cables** are suitable for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicle



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5
- Insulation : EBXL - EI 109
- Separator : Polyester Tape
- Outer Sheath : EBXL - EM 104
- Color : Black or as per customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300/500V AC
- Specification : BS EN 50264 - 3 - 2
- Conductor : BS EN 60228, Class 5
- In addition to BS EN 50264 spec, cables also meet fire performance tests as per UNI CEI 11170-3, DIN 5510-2, NF F 16-101 CEN /TS 45545

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked
- Resistance to corona effect

| No of Cores X Cross Section<br>No's X (Mm <sup>2</sup> ) | Core Dia.<br>(Mm) | Conductor<br>Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Outer Sheath<br>thickness<br>(Mm) | Insulation<br>thickness<br>(Mm) | Outer Dia. (Mm) |      | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------------------------------|-------------------|---------------------------|------------------------------------------------|-----------------------------------|---------------------------------|-----------------|------|------------------------------------|
|                                                          |                   |                           |                                                |                                   |                                 | Min.            | Max. |                                    |
| 2 X 1.5                                                  | 3.3               | 1.5                       | 13.7                                           | 0.70                              | 0.70                            | 7.2             | 9.0  | 130                                |
| 3 X 1.5                                                  | 3.3               | 1.5                       | 13.7                                           | 0.70                              | 0.70                            | 7.7             | 9.5  | 150                                |
| 4 X 1.5                                                  | 3.3               | 1.5                       | 13.7                                           | 0.70                              | 0.70                            | 8.5             | 10.5 | 185                                |
| 2 X 2.5                                                  | 3.8               | 1.95                      | 8.21                                           | 0.70                              | 0.70                            | 8.0             | 10.0 | 165                                |
| 3 X 2.5                                                  | 3.8               | 1.95                      | 8.21                                           | 0.70                              | 0.70                            | 8.5             | 11.3 | 195                                |
| 4 X 2.5                                                  | 3.8               | 1.95                      | 8.21                                           | 0.70                              | 0.70                            | 9.4             | 11.6 | 240                                |
| 2 X 4                                                    | 4.4               | 2.5                       | 5.09                                           | 0.70                              | 0.70                            | 9.1             | 11.3 | 225                                |
| 3 X 4                                                    | 4.4               | 2.5                       | 5.09                                           | 0.70                              | 0.70                            | 9.7             | 12.0 | 270                                |
| 4 X 4                                                    | 4.4               | 2.5                       | 5.09                                           | 0.80                              | 0.80                            | 10.9            | 13.4 | 335                                |
| 2 X 6                                                    | 5.0               | 3.0                       | 3.39                                           | 0.80                              | 0.80                            | 10.1            | 12.4 | 295                                |
| 3 X 6                                                    | 5.0               | 3.0                       | 3.39                                           | 0.80                              | 0.80                            | 10.7            | 13.2 | 360                                |
| 4 X 6                                                    | 5.0               | 3.0                       | 3.39                                           | 1.00                              | 1.00                            | 12.2            | 14.9 | 450                                |
| 2 X 10                                                   | 5.9               | 3.9                       | 1.95                                           | 1.00                              | 1.00                            | 12.5            | 15.4 | 435                                |
| 3 X 10                                                   | 5.9               | 3.9                       | 1.95                                           | 1.00                              | 1.00                            | 13.3            | 16.5 | 550                                |
| 4 X 10                                                   | 5.9               | 3.9                       | 1.95                                           | 1.00                              | 1.00                            | 18.0            | 18.2 | 695                                |
| 2 X 16                                                   | 7.2               | 5.0                       | 1.24                                           | 1.00                              | 1.00                            | 14.9            | 18.4 | 620                                |
| 3 X 16                                                   | 7.2               | 5.0                       | 1.24                                           | 1.00                              | 1.00                            | 16.0            | 19.6 | 790                                |
| 4 X 16                                                   | 7.2               | 5.0                       | 1.24                                           | 1.20                              | 1.20                            | 22.6            | 22.1 | 1010                               |
| 2 X 25                                                   | 9.1               | 6.4                       | 0.795                                          | 1.20                              | 1.20                            | 18.7            | 23.0 | 905                                |
| 3 X 25                                                   | 9.1               | 6.4                       | 0.795                                          | 1.20                              | 1.20                            | 20.0            | 24.7 | 1165                               |
| 4 X 25                                                   | 9.1               | 6.4                       | 0.795                                          | 1.40                              | 1.40                            | 25.7            | 27.6 | 1505                               |
| a2 X 35                                                  | 10.6              | 7.7                       | 0.565                                          | 1.20                              | 1.20                            | 21.2            | 25.9 | 1200                               |
| 3 X 35                                                   | 10.6              | 7.7                       | 0.565                                          | 1.20                              | 1.20                            | 23.0            | 28.2 | 1550                               |
| 3.5 X 3.5                                                | 10.6              | 7.7                       | 0.565                                          | 1.40                              | 1.40                            | 25.7            | 31.2 | 2005                               |
| 2 X 50                                                   | 12.4              | 9.2                       | 0.393                                          | 1.40                              | 1.40                            | 25.1            | 30.7 | 1660                               |
| 3 X 50                                                   | 12.4              | 9.2                       | 0.393                                          | 1.40                              | 1.40                            | 26.3            | 32.2 | 2135                               |
| 3.5 X 50                                                 | 12.4              | 9.2                       | 0.393                                          | 1.40                              | 1.60                            | 25.7            | 31.2 | 2765                               |

## BS EN 50264-3-2 MULTI CORE EBXL ROLLING STOCK CABLE

300/500 V AC, 120°C

**Svarn BS EN 50264-3-2 Multi Core EBXL Rolling Stock Cables** are used for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicle



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5
- Insulation : EBXL - EI 109
- Separator : Polyester Tape
- Outer Sheath : EBXL - EM 104
- Color : Black or as per customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300/500V AC
- Specification : BS EN 50264 - 3 - 2 Conductor : BS EN 60228, Class 5
- In addition to BS EN 50264 spec, cables also meet fire performance tests as per UNI CEI 11170-3, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant.
- Electron Beam Cross Linked

| No of Cores X Cross Section<br>No's X (Mm <sup>2</sup> ) | Core Dia.<br>(Mm) | Conductor<br>Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Insulation<br>thickness<br>(Mm) | Outer Dia. (Mm) |      | Insulation<br>thickness<br>(Mm) |
|----------------------------------------------------------|-------------------|---------------------------|------------------------------------------------|---------------------------------|-----------------|------|---------------------------------|
|                                                          |                   |                           |                                                |                                 | Min.            | Max. |                                 |
| 2 X 1                                                    | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 5.3             | 6.2  | 57                              |
| 4 X 1                                                    | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 6.1             | 7.2  | 84                              |
| 7 X 1                                                    | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 7.5             | 8.7  | 130                             |
| 9 X 1                                                    | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 9.1             | 10.6 | 170                             |
| 12 X 1                                                   | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 9.8             | 11.5 | 205                             |
| 19 x 1                                                   | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 11.7            | 13.7 | 315                             |
| 24 x 1                                                   | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 14.1            | 16.5 | 410                             |
| 32 X 1                                                   | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 15.5            | 18.2 | 525                             |
| 37 X 1                                                   | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 16.1            | 18.9 | 595                             |
| 40 X 1                                                   | 2.4               | 1.25                      | 20.0                                           | 0.4                             | 16.7            | 19.6 | 640                             |
| 4 X 1.5                                                  | 2.9               | 1.5                       | 13.7                                           | 0.5                             | 7.3             | 8.6  | 120                             |
| 7 X 1.5                                                  | 2.9               | 1.5                       | 13.7                                           | 0.5                             | 8.7             | 10.2 | 180                             |
| 9 X 1.5                                                  | 2.9               | 1.5                       | 13.7                                           | 0.5                             | 10.9            | 12.7 | 245                             |
| 12 X 1.5                                                 | 2.9               | 1.5                       | 13.7                                           | 0.5                             | 11.8            | 13.8 | 320                             |
| 19 X 1.5                                                 | 2.9               | 1.5                       | 13.7                                           | 0.5                             | 14.2            | 16.6 | 465                             |
| 24 X 1.5                                                 | 2.9               | 1.5                       | 13.7                                           | 0.5                             | 16.6            | 19.5 | 585                             |
| 32 X 1.5                                                 | 2.9               | 1.5                       | 13.7                                           | 0.5                             | 18.7            | 21.9 | 770                             |
| 37 X 1.5                                                 | 2.9               | 1.5                       | 13.7                                           | 0.5                             | 19.5            | 22.8 | 875                             |
| 4 X 2.5                                                  | 3.4               | 1.95                      | 8.21                                           | 0.5                             | 8.3             | 9.8  | 170                             |
| 7 X 2.5                                                  | 3.4               | 1.95                      | 8.21                                           | 0.5                             | 10.2            | 11.9 | 275                             |
| 9 X 2.5                                                  | 3.4               | 1.95                      | 8.21                                           | 0.5                             | 12.9            | 15.1 | 385                             |
| 12 X 2.5                                                 | 3.4               | 1.95                      | 8.21                                           | 0.5                             | 13.9            | 16.3 | 480                             |
| 19 X 2.5                                                 | 3.4               | 1.95                      | 8.21                                           | 0.5                             | 16.3            | 19.1 | 710                             |
| 24 X 2.5                                                 | 3.4               | 1.95                      | 8.21                                           | 0.5                             | 19.6            | 22.9 | 945                             |

## BS EN 50264-3-2 MULTI CORE EBXL ROLLING STOCK CABLE

600/1000V AC, 120°C

**Svarn BS EN 50264-3-2 Multi Core EBXL Rolling Stock Cables** are used for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicle.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5
- Insulation : EBXL - EI 109
- Separator : Polyester Tape
- Outer Sheath : EBXL - EM 104
- Color : Black or as per customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 600/1000V AC
- Specification : BS EN 50264 - 3 - 1
- Conductor : BS EN 60228, Class 5
- In addition to BS EN 50264 spec, cables also meet fire performance tests as per UNI CEI 11170-3, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| No of Cores X Cross Section<br>No's X (Mm <sup>2</sup> ) | Core Dia.<br>(Mm) | Conductor<br>Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Insulation<br>thickness<br>(Mm) | Outer Sheath<br>thickness<br>(Mm) | Outer Dia. (Mm) |      | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------------------------------|-------------------|---------------------------|------------------------------------------------|---------------------------------|-----------------------------------|-----------------|------|------------------------------------|
|                                                          |                   |                           |                                                |                                 |                                   | Min.            | Max. |                                    |
| 2 X 1.5                                                  | 3.3               | 1.5                       | 13.7                                           | 0.70                            | 0.70                              | 7.2             | 9.0  | 130                                |
| 3 X 1.5                                                  | 3.3               | 1.5                       | 13.7                                           | 0.70                            | 0.70                              | 7.7             | 9.5  | 150                                |
| 4 X 1.5                                                  | 3.3               | 1.5                       | 13.7                                           | 0.70                            | 0.70                              | 8.5             | 10.5 | 185                                |
| 2 X 2.5                                                  | 3.8               | 1.95                      | 8.21                                           | 0.70                            | 0.70                              | 8.0             | 10.0 | 165                                |
| 3 X 2.5                                                  | 3.8               | 1.95                      | 8.21                                           | 0.70                            | 0.70                              | 8.5             | 11.6 | 195                                |
| 4 X 2.5                                                  | 3.8               | 1.95                      | 8.21                                           | 0.70                            | 0.70                              | 9.4             | 11.6 | 240                                |
| 2 X 4                                                    | 4.4               | 2.5                       | 5.09                                           | 0.70                            | 0.70                              | 9.1             | 11.3 | 225                                |
| 3 X 4                                                    | 4.4               | 2.5                       | 5.09                                           | 0.70                            | 0.70                              | 9.7             | 12.0 | 270                                |
| 4 X 4                                                    | 4.4               | 2.5                       | 5.09                                           | 0.80                            | 0.80                              | 10.9            | 13.4 | 335                                |
| 2 X 6                                                    | 5.0               | 3.0                       | 3.39                                           | 0.80                            | 0.80                              | 10.1            | 12.4 | 295                                |
| 3 X 6                                                    | 5.0               | 3.0                       | 3.39                                           | 0.80                            | 0.80                              | 10.7            | 13.2 | 360                                |
| 4 X 6                                                    | 5.0               | 3.0                       | 3.39                                           | 1.00                            | 1.00                              | 12.2            | 14.9 | 450                                |
| 2 X 10                                                   | 5.9               | 3.9                       | 1.95                                           | 1.00                            | 1.00                              | 12.5            | 15.4 | 435                                |
| 3 X 10                                                   | 5.9               | 3.9                       | 1.95                                           | 1.00                            | 1.00                              | 13.3            | 16.5 | 550                                |
| 4 X 10                                                   | 5.9               | 3.9                       | 1.95                                           | 1.00                            | 1.00                              | 18.0            | 18.2 | 695                                |
| 2 X 16                                                   | 7.2               | 5.0                       | 1.24                                           | 1.00                            | 1.00                              | 14.9            | 18.4 | 620                                |
| 3 X 16                                                   | 7.2               | 5.0                       | 1.24                                           | 1.00                            | 1.00                              | 16.0            | 19.6 | 790                                |
| 4 X 16                                                   | 7.2               | 5.0                       | 1.24                                           | 1.20                            | 1.20                              | 22.6            | 22.1 | 1010                               |
| 2 X 25                                                   | 9.1               | 6.4                       | 0.795                                          | 1.20                            | 1.20                              | 18.7            | 23.0 | 905                                |
| 3 X 25                                                   | 9.1               | 6.4                       | 0.795                                          | 1.20                            | 1.20                              | 20.0            | 24.7 | 1165                               |
| 4 X 25                                                   | 9.1               | 6.4                       | 0.795                                          | 1.40                            | 1.40                              | 25.7            | 27.6 | 1505                               |
| 2 X 35                                                   | 10.6              | 7.7                       | 0.565                                          | 1.20                            | 1.20                              | 21.2            | 25.9 | 1200                               |
| 3 X 35                                                   | 10.6              | 7.7                       | 0.565                                          | 1.20                            | 1.20                              | 23.0            | 28.2 | 1550                               |
| 3.5 X 35                                                 | 10.6              | 7.7                       | 0.565                                          | 1.40                            | 1.40                              | 25.7            | 31.2 | 2005                               |
| 2 X 50                                                   | 12.4              | 9.2                       | 0.393                                          | 1.40                            | 1.40                              | 25.1            | 30.7 | 1660                               |
| 3 X 50                                                   | 12.4              | 9.2                       | 0.393                                          | 1.40                            | 1.40                              | 26.3            | 32.2 | 2135                               |
| 3.5 X 50                                                 | 12.4              | 9.2                       | 0.393                                          | 1.60                            | 1.40                              | 25.7            | 31.2 | 2765                               |

## BS EN 50264-3-2 MULTI CORE SCREENED EBXL ROLLING STOCK CABLE

600/1000V AC, 900V DC, 120°C

**Svarn BS EN 50264-3-2 Multi Core Screened EBXL Rolling Stock Cables** are used for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicle.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5
- Insulation : EBXL - EI 109
- Separator : Polyester Tape
- Outer Sheath : EBXL - EM 104
- Color : Black or as per customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 600/1000V AC
- Specification : BS EN 50264-3-1
- Conductor : BS EN 60228, Class 5
- In addition to BS EN 50264 spec, cables also meet fire performance tests as per UNI CEI 11170-3, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| No of Cores X Cross Section<br>No's X (Mm <sup>2</sup> ) | Core Dia.<br>(Mm) | Conductor<br>Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Outer Sheath<br>thickness<br>(Mm) | Insulation<br>thickness<br>(Mm) | Outer Dia. (Mm) |      | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------------------------------|-------------------|---------------------------|------------------------------------------------|-----------------------------------|---------------------------------|-----------------|------|------------------------------------|
|                                                          |                   |                           |                                                |                                   |                                 | Min.            | Max. |                                    |
| 2 X 1.5                                                  | 3.00              | 1.5                       | 13.7                                           | 0.7                               | 0.7                             | 0.16            | 8.3  | 118                                |
| 3 X 1.5                                                  | 3.00              | 1.5                       | 13.7                                           | 0.7                               | 0.7                             | 0.16            | 8.7  | 139                                |
| 4 X 1.5                                                  | 3.00              | 1.5                       | 13.7                                           | 0.7                               | 0.7                             | 0.16            | 10.0 | 180                                |
| 2 X 2.5                                                  | 3.35              | 1.95                      | 8.21                                           | 0.7                               | 0.7                             | 0.16            | 9.0  | 149                                |
| 3 X 2.5                                                  | 3.35              | 1.95                      | 8.21                                           | 0.7                               | 0.7                             | 0.16            | 9.5  | 179                                |
| 4 X 2.5                                                  | 3.35              | 1.95                      | 8.21                                           | 0.7                               | 0.7                             | 0.21            | 11.1 | 237                                |
| 2 X 4                                                    | 3.95              | 2.5                       | 5.09                                           | 0.7                               | 0.7                             | 0.21            | 10.6 | 205                                |
| 3 X 4                                                    | 3.95              | 2.5                       | 5.09                                           | 0.7                               | 0.7                             | 0.21            | 11.3 | 250                                |
| 4 X 4                                                    | 3.95              | 2.5                       | 5.09                                           | 0.7                               | 0.8                             | 0.21            | 12.8 | 322                                |
| 2 X 6                                                    | 4.50              | 3.0                       | 3.39                                           | 0.7                               | 0.8                             | 0.21            | 11.8 | 263                                |
| 3 X 6                                                    | 4.50              | 3.0                       | 3.39                                           | 0.7                               | 0.8                             | 0.21            | 12.9 | 336                                |
| 4 X 6                                                    | 4.50              | 3.0                       | 3.39                                           | 0.7                               | 1.0                             | 0.21            | 14.5 | 429                                |
| 2 X 10                                                   | 5.60              | 3.9                       | 1.95                                           | 0.7                               | 1.0                             | 0.26            | 14.4 | 408                                |
| 3 X 10                                                   | 5.60              | 3.9                       | 1.95                                           | 0.7                               | 1.0                             | 0.21            | 15.5 | 515                                |
| 4 X 10                                                   | 5.60              | 3.9                       | 1.95                                           | 0.7                               | 1.0                             | 0.26            | 17.5 | 664                                |
| 2 X 16                                                   | 7.05              | 5.0                       | 1.24                                           | 0.7                               | 1.0                             | 0.26            | 17.6 | 616                                |
| 3 X 16                                                   | 7.05              | 5.0                       | 1.24                                           | 0.7                               | 1.0                             | 0.26            | 19.2 | 794                                |
| 4 X 16                                                   | 7.05              | 5.0                       | 1.24                                           | 0.9                               | 1.2                             | 0.26            | 21.4 | 1006                               |
| 2 X 25                                                   | 8.60              | 6.4                       | 0.795                                          | 0.9                               | 1.2                             | 0.26            | 21.4 | 947                                |
| 3 X 25                                                   | 8.60              | 6.4                       | 0.795                                          | 0.9                               | 1.2                             | 0.26            | 22.7 | 1191                               |
| 4 X 25                                                   | 8.60              | 6.4                       | 0.795                                          | 0.9                               | 1.4                             | 0.31            | 26.1 | 1553                               |
| 2 X 35                                                   | 10.10             | 7.7                       | 0.565                                          | 0.9                               | 1.2                             | 0.31            | 24.6 | 1267                               |
| 3 X 35                                                   | 10.10             | 7.7                       | 0.565                                          | 0.9                               | 1.2                             | 0.31            | 26.7 | 1628                               |
| 3.5 X 35                                                 | 10.10             | 7.7                       | 0.565                                          | 0.9                               | 1.4                             | 0.31            | 30.0 | 2102                               |
| 2 X 50                                                   | 11.60             | 9.2                       | 0.393                                          | 1.0                               | 1.4                             | 0.31            | 28.3 | 1705                               |
| 3 X 50                                                   | 11.60             | 9.2                       | 0.393                                          | 1.0                               | 1.4                             | 0.31            | 30.8 | 2215                               |
| 3.5 X 50                                                 | 11.60             | 9.2                       | 0.393                                          | 1.0                               | 1.6                             | 0.31            | 33.7 | 3503                               |

## BS EN 50306-2 SINGLE CORE EBXL ROLLING STOCK CABLE

300 V AC, 120°C

**Svarn BS EN 50306-2 Single Core EBXL Rolling Stock Cables** are used for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, control panels, wiring harness in inside/outside moving vehicle.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, (Unilay\*)
- Insulation : EBXL - EI 109
- Outer Sheath : EBXL - EI 109
- Color : White or as per customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300 V AC
- Specification : BS EN 50306-2
- Conductor : BS EN 50306-2
- In addition to BS EN 50306 spec, cables also meet fire performance tests as per UNI CEI 11170-3, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked
- Resistance to corona effect

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Dia. | Insulation thickness (Mm) | Outer Dia. (Mm) |      | Max. Conductor Resistance at 20°C (Ω/km) | Cable weight Approx. (Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|----------------|---------------------------|-----------------|------|------------------------------------------|------------------------------|
|                                  |                                                                        |                |                           | Min.            | Max. |                                          |                              |
| 0.5                              | 19 X 0.18                                                              | 0.95           | 0.18                      | 1.15            | 1.45 | 40.1                                     | 6                            |
| 0.75                             | 37 X 0.16                                                              | 1.15           | 0.18                      | 1.35            | 1.65 | 26.7                                     | 8                            |
| 1.0                              | 37 X 0.18                                                              | 1.30           | 0.18                      | 1.45            | 1.80 | 20.0                                     | 10                           |
| 1.5                              | 37 X 0.23                                                              | 1.65           | 0.22                      | 1.95            | 2.30 | 13.7                                     | 15                           |
| 2.5                              | 37 X 0.30                                                              | 2.15           | 0.28                      | 2.50            | 2.85 | 8.21                                     | 25                           |

## BS EN 50306-3 SINGLE AND MULTI CORE SCREENED EBXL ROLLING STOCK CABLE

**300V AC, 120°C**

**Svarn BS EN 50306-3 Single and Multi Core Screened EBXL Rolling Stock Cables** are used for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicle.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, (Unilay\*)
- Insulation : EBXL - EI 109 (White)
- Outer Sheath : EBXL - EM 104 (Black)
- Screen: Tinned Copper Braid

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300 V AC
- Specification : BS EN 50306-3
- Conductor : BS EN 50306-2
- In addition to BS EN 50306 spec, cables also meet fire performance tests as per UNI CEI 11170-3, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temperature.
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked
- Resistance to corona effect

| No of Cores X Cross Section<br>No's X (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Core Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Outer Sheath<br>thickness<br>(Mm) | Outer Dia. (Mm) |      | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------------------------------|------------------------------------------------------------------------|-------------------|------------------------------------------------|-----------------------------------|-----------------|------|------------------------------------|
|                                                          |                                                                        |                   |                                                |                                   | Min.            | Max. |                                    |
| 1 X 0.5                                                  | 19 X 0.18                                                              | 1.45              | 40.1                                           | 0.20                              | 2.3             | 2.8  | 15                                 |
| 2 X 0.5                                                  | 19 X 0.18                                                              | 1.45              | 40.1                                           | 0.20                              | 3.5             | 4.3  | 32                                 |
| 3 X 0.5                                                  | 19 X 0.18                                                              | 1.45              | 40.1                                           | 0.20                              | 3.7             | 4.5  | 38                                 |
| 4 X 0.5                                                  | 19 X 0.18                                                              | 1.45              | 40.1                                           | 0.20                              | 4.0             | 5.0  | 46                                 |
| 1 X 0.75                                                 | 37 X 0.16                                                              | 1.65              | 26.7                                           | 0.20                              | 2.5             | 3.0  | 19                                 |
| 2 X 0.75                                                 | 37 X 0.16                                                              | 1.65              | 26.7                                           | 0.20                              | 3.9             | 4.7  | 41                                 |
| 3 X 0.75                                                 | 37 X 0.16                                                              | 1.65              | 26.7                                           | 0.20                              | 4.0             | 5.5  | 49                                 |
| 4 X 0.75                                                 | 37 X 0.16                                                              | 1.65              | 26.7                                           | 0.20                              | 4.5             | 5.0  | 59                                 |
| 1 X 1.0                                                  | 37 X 0.18                                                              | 1.80              | 20.0                                           | 0.20                              | 2.7             | 3.2  | 21                                 |
| 2 X 1.0                                                  | 37 X 0.18                                                              | 1.80              | 20.0                                           | 0.20                              | 4.2             | 5.2  | 46                                 |
| 3 X 1.0                                                  | 37 X 0.18                                                              | 1.80              | 20.0                                           | 0.20                              | 4.5             | 5.5  | 56                                 |
| 4 X 1.0                                                  | 37 X 0.18                                                              | 1.80              | 20.0                                           | 0.20                              | 5.0             | 6.0  | 70                                 |
| 1 X 1.5                                                  | 37 X 0.23                                                              | 2.30              | 13.7                                           | 0.20                              | 3.1             | 3.6  | 28                                 |
| 2 X 1.5                                                  | 37 X 0.23                                                              | 2.30              | 13.7                                           | 0.20                              | 5.1             | 6.1  | 65                                 |
| 3 X 1.5                                                  | 37 X 0.23                                                              | 2.30              | 13.7                                           | 0.20                              | 5.4             | 6.4  | 80                                 |
| 4 X 1.5                                                  | 37 X 0.23                                                              | 2.30              | 13.7                                           | 0.20                              | 6.0             | 7.0  | 100                                |
| 1 X 2.5                                                  | 37 X 0.30                                                              | 2.85              | 8.21                                           | 0.20                              | 3.6             | 4.4  | 43                                 |
| 2 X 2.5                                                  | 37 X 0.30                                                              | 2.85              | 8.21                                           | 0.20                              | 6.4             | 7.4  | 95                                 |
| 3 X 2.5                                                  | 37 X 0.30                                                              | 2.85              | 8.21                                           | 0.20                              | 6.8             | 7.8  | 120                                |
| 4 X 2.5                                                  | 37 X 0.30                                                              | 2.85              | 8.21                                           | 0.20                              | 7.5             | 8.5  | 150                                |

## BS EN 50306-4 P MULTI CORE EBXL ROLLING STOCK CABLE

300V AC, 450V DC, 120°C

**Svarn BS EN 50306-4 P Multi Core EBXL Rolling Stock Cables** are used for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, control panels, wiring harness in inside/outside moving vehicle.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, (Unilay\*)
- Insulation : EBXL - EI 109
- Separator : Polyester Tape
- Outer Sheath : EBXL - EM 104 (Black)

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300V AC 450V DC
- Specification :BS EN 50306-4
- Conductor : BS EN 50306-2
- In addition to BS EN 50306 spec, cables also meet fire performance tests as per UNI CEI 11170-3

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant

| No of Cores X Cross Section<br>No's X (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Core Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Outer Dia.<br>(Mm) | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------------------------------|------------------------------------------------------------------------|-------------------|------------------------------------------------|--------------------|------------------------------------|
| 4 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 4.9                | 42                                 |
| 7 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 5.6                | 60                                 |
| 13 X 0.5                                                 | 19 X 0.18                                                              | 1.43              | 40.1                                           | 8.0                | 106                                |
| 19 X 0.5                                                 | 19 X 0.18                                                              | 1.43              | 40.1                                           | 8.8                | 150                                |
| 37 X 0.5                                                 | 19 X 0.18                                                              | 1.43              | 40.1                                           | 11.6               | 261                                |
| 4 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 5.4                | 53                                 |
| 4G X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 5.4                | 53                                 |
| 7 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 6.2                | 78                                 |
| 7G X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 6.2                | 78                                 |
| 13 X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 8.9                | 144                                |
| 19 X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 9.9                | 202                                |
| 37 X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 13.1               | 373                                |
| 48 X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 15.1               | 151                                |
| 4 X 1                                                    | 37 X 0.18                                                              | 1.75              | 26.7                                           | 5.7                | 64                                 |
| 7 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 6.7                | 97                                 |
| 13 X 1                                                   | 37 X 0.18                                                              | 1.75              | 20.0                                           | 9.6                | 175                                |
| 19 X 1                                                   | 37 X 0.18                                                              | 1.75              | 20.0                                           | 10.7               | 251                                |
| 37 X 1                                                   | 37 X 0.18                                                              | 1.75              | 20.0                                           | 14.1               | 467                                |
| 4 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 20.0                                           | 6.7                | 90                                 |
| 7 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 8.3                | 144                                |
| 13 X 1.5                                                 | 37 X 0.23                                                              | 2.17              | 13.7                                           | 11.5               | 258                                |
| 19 X 1.5                                                 | 37 X 0.23                                                              | 2.17              | 13.7                                           | 12.7               | 365                                |
| 37 X 1.5                                                 | 37 X 0.23                                                              | 2.17              | 13.7                                           | 17.4               | 683                                |
| 2 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 13.7                                           | 7.3                | 94                                 |
| 3 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 7.8                | 117                                |
| 3G X 2.5                                                 | 37 X 0.30                                                              | 2.75              | 8.21                                           | 7.8                | 117                                |
| 4 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 8.6                | 145                                |
| 4G X 2.5                                                 | 37 X 0.30                                                              | 2.75              | 8.21                                           | 8.6                | 145                                |

## BS EN 50306-4 PS MULTI CORE SCREENED EBXL ROLLING STOCK CABLE

**300V AC, 450V DC, 120°C**

**Svarn BS EN 50306-4 PS Multi Core Screened EBXL Rolling Stock Cables** are used for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicle.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, (Unilay\*)
- Insulation : EBXL - EI 109
- Separator : Polyester Tape
- Outer Sheath : EBXL - EM 104 (Black)

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300V AC 450V DC
- Specification : BS EN 50306-4
- Conductor : BS EN 50306-2
- In addition to BS EN 50306 spec, cables also meet fire performance tests as per UNI CEI 11170-3

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant

| No of Cores X Cross Section<br>No's X (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Core Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Outer Dia.<br>(Mm) | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------------------------------|------------------------------------------------------------------------|-------------------|------------------------------------------------|--------------------|------------------------------------|
| 2 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 4.8                | 40                                 |
| 3 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 5.0                | 46                                 |
| 4 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 5.4                | 55                                 |
| 6 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 6.3                | 75                                 |
| 8 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 6.7                | 93                                 |
| 2 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 5.1                | 51                                 |
| 3 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 5.4                | 60                                 |
| 4 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 5.9                | 69                                 |
| 6 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 6.8                | 93                                 |
| 8 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 7.4                | 116                                |
| 2 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 5.4                | 55                                 |
| 3 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 5.8                | 67                                 |
| 4 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 6.3                | 84                                 |
| 6 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 7.3                | 113                                |
| 8 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 8.3                | 147                                |
| 2 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 6.4                | 79                                 |
| 3 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 6.7                | 96                                 |
| 4 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 7.3                | 116                                |
| 6 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 8.9                | 164                                |
| 8 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 9.8                | 200                                |
| 2 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 7.9                | 117                                |
| 3 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 8.3                | 143                                |
| 4 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 9.3                | 175                                |

## BS EN 50306-4 UP MULTI CORE EBXL ROLLING STOCK CABLE

300V AC, 450V DC, 120°C

**Svarn BS EN 50306-4 UP Multi Core EBXL Rolling Stock Cables** are used for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, control panels, wiring harness in inside/outside moving vehicle.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, (Unilay\*)
- Insulation : EBXL - EI 109
- Separator : Polyester Tape.
- Outer Sheath : EBXL - EM 104 (Black)

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300V AC 450V DC
- Specification : BS EN 50306-4
- Conductor : BS EN 50306 - 2
- In addition to BS EN 50306 spec, cables also meet fire performance tests as per UNI CEI 11170-3

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant

| No of Cores X Cross Section<br>No's X (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Core Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Outer Dia.<br>(Mm) | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------------------------------|------------------------------------------------------------------------|-------------------|------------------------------------------------|--------------------|------------------------------------|
| 4 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 6.1                | 56                                 |
| 7 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 3.1                | 76                                 |
| 13 X 0.5                                                 | 19 X 0.18                                                              | 1.43              | 40.1                                           | 5.9                | 124                                |
| 19 X 0.5                                                 | 19 X 0.18                                                              | 1.43              | 40.1                                           | 8.6                | 164                                |
| 37 X 0.5                                                 | 19 X 0.18                                                              | 1.43              | 40.1                                           | 16.8               | 296                                |
| 4 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 6.5                | 69                                 |
| 7 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 7.4                | 98                                 |
| 13 X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 9.8                | 165                                |
| 19 X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 10.7               | 220                                |
| 37 X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 14.0               | 399                                |
| 48 X 0.75                                                | 37 X 0.16                                                              | 1.63              | 26.7                                           | 15.9               | 507                                |
| 4 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 6.9                | 80                                 |
| 7 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 7.9                | 118                                |
| 13 X 1                                                   | 37 X 0.18                                                              | 1.75              | 20.0                                           | 10.5               | 200                                |
| 19 X 1                                                   | 37 X 0.18                                                              | 1.75              | 20.0                                           | 11.5               | 272                                |
| 37 X 1                                                   | 37 X 0.18                                                              | 1.75              | 20.0                                           | 15.1               | 494                                |
| 4 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 7.9                | 110                                |
| 7 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 9.0                | 168                                |
| 13 X 1.5                                                 | 37 X 0.23                                                              | 2.17              | 13.7                                           | 12.3               | 283                                |
| 19 X 1.5                                                 | 37 X 0.23                                                              | 2.17              | 13.7                                           | 16.5               | 390                                |
| 37 X 1.5                                                 | 37 X 0.23                                                              | 2.17              | 13.7                                           | 18.2               | 716                                |
| 2 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 8.0                | 108                                |
| 3 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 8.5                | 131                                |
| 4 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 9.5                | 165                                |

## BS EN 50306-4 UPS MULTI CORE SCREENED EBXL ROLLING STOCK CABLE

**300V AC, 450V DC, 120°C**

**Svarn BS EN 50306-4 UPS Multi Core Screened EBXL Rolling Stock Cables** are used for mechanically protected installation in Rail / Bus and other transport vehicles. Cables are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicle.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, (Unilay\*)
- Insulation : EBXL - EI 109
- Separator : Polyester Tape
- Outer Sheath : EBXL - EM 104 (Black)

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300V AC 450V DC
- Specification : BS EN 50306 - 4
- Conductor : BS EN 50306 - 2
- In addition to BS EN 50306 spec, cables also meet fire performance tests as per UNI CEI 11170-3

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Thin walled with excellent flexibility
- Low smoke density
- Soldering iron resistant

| No of Cores X Cross Section<br>No's X (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Core Dia.<br>(Mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Outer Dia.<br>(Mm) | Cable weight<br>Approx.<br>(Kg/Km) |
|----------------------------------------------------------|------------------------------------------------------------------------|-------------------|------------------------------------------------|--------------------|------------------------------------|
| 2 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 5.9                | 55                                 |
| 3 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 6.1                | 60                                 |
| 4 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 6.6                | 74                                 |
| 6 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 7.5                | 95                                 |
| 8 X 0.5                                                  | 19 X 0.18                                                              | 1.43              | 40.1                                           | 8.2                | 112                                |
| 2 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 6.3                | 65                                 |
| 3 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 6.6                | 75                                 |
| 4 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 7.1                | 90                                 |
| 6 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 8.2                | 118                                |
| 8 X 0.75                                                 | 37 X 0.16                                                              | 1.63              | 26.7                                           | 8.9                | 140                                |
| 2 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 6.9                | 73                                 |
| 3 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 6.9                | 85                                 |
| 4 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 7.6                | 103                                |
| 6 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 8.5                | 137                                |
| 8 X 1                                                    | 37 X 0.18                                                              | 1.75              | 20.0                                           | 9.5                | 162                                |
| 2 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 7.5                | 94                                 |
| 3 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 7.8                | 110                                |
| 4 X 1.5                                                  | 37 X 0.23                                                              | 2.17              | 13.7                                           | 8.6                | 138                                |
| 37 X 1.5                                                 | 37 X 0.23                                                              | 2.17              | 13.7                                           | 9.7                | 180                                |
| 37 X 1.5                                                 | 37 X 0.23                                                              | 2.17              | 13.7                                           | 11.1               | 224                                |
| 2 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 8.7                | 136                                |
| 3 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 9.1                | 163                                |
| 4 X 2.5                                                  | 37 X 0.30                                                              | 2.75              | 8.21                                           | 10.0               | 197                                |

## BS EN 50382-2 SINGLE CORE ATC CONDUCTOR SILICONE INSULATED SHEATHED ROLLING STOCK CABLE

### 1.8/3KV Rated Type FF, 120°C

**Svarn BS EN 50382-2 Single Core ATC Conductor Silicone Insulated Sheathed Rolling Stock Cables** are used for high temperature applications in railway vehicles. (locomotives, trains, trolley buses). Used as power and control cables for protected installation inside & outside of rolling stock. Used in auxiliary & main circuit wiring such as control panels, monitoring control, electric heating, lighting etc.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Class 5
- Conductor as per EN 60228
- Insulation : EBXL - EI 111 as per BS EN 50382-1
- Sheath : EBXL - EM 106 with properties according to BS EN 50382-1

#### TECHNICAL DATA

- Specification : BS EN 50382-2:2008
- Test voltage : 6.5kV
- Maximum Temperature Range : 120°C
- Working Voltage : 1.8/3kV
- Type FF as per BS EN 50382-2  
F: EI 111 (Insulation Material)  
F: EM 106 (Sheath Material)
- Cables also meet fire performance tests as per: EN 50306-2, DIN 5510-2, NF F 16-101, BS 6853

#### FEATURES

- Halogen free
- Flame retardant
- Oil resistant
- Low temperature resistant
- Resistance to ozone, chemical oil and fuel

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Insulation Thickness (Mm) | Sheath thickness (Mm) | Max. Conductor Resistance at 20°C (Ω/km) | Outer Dia. (Mm) |      | Cable weight Approx. (Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|---------------------------|-----------------------|------------------------------------------|-----------------|------|------------------------------|
|                                  |                                                                        |                           |                       |                                          | Min.            | Max. |                              |
| 1.5                              | 30 X 0.25                                                              | 1.3                       | 1.4                   | 13.7                                     | 6.8             | 7.9  | 78                           |
| 2.5                              | 50 X 0.25                                                              | 1.3                       | 1.4                   | 8.21                                     | 7.2             | 8.4  | 93                           |
| 4                                | 56 X 0.30                                                              | 1.3                       | 1.4                   | 5.09                                     | 7.7             | 9.0  | 113                          |
| 6                                | 84 X 0.30                                                              | 1.3                       | 1.4                   | 3.39                                     | 8.2             | 9.6  | 137                          |
| 10                               | 80 X 0.40                                                              | 1.5                       | 1.4                   | 1.95                                     | 9.4             | 11.0 | 199                          |
| 16                               | 126 X 0.40                                                             | 1.5                       | 1.4                   | 1.24                                     | 10.5            | 12.2 | 265                          |
| 25                               | 196 X 0.40                                                             | 1.8                       | 1.4                   | 0.795                                    | 12.3            | 14.4 | 377                          |
| 35                               | 276 X 0.40                                                             | 1.8                       | 1.4                   | 0.565                                    | 13.6            | 15.9 | 479                          |
| 50                               | 396 X 0.40                                                             | 1.8                       | 1.4                   | 0.393                                    | 15.0            | 17.5 | 627                          |
| 70                               | 360 X 0.50                                                             | 1.8                       | 1.5                   | 0.277                                    | 16.8            | 19.7 | 837                          |
| 95                               | 475 X 0.50                                                             | 2.2                       | 1.5                   | 0.210                                    | 19.0            | 22.2 | 1119                         |
| 120                              | 608 X 0.50                                                             | 2.2                       | 1.6                   | 0.164                                    | 20.8            | 24.3 | 1366                         |
| 150                              | 756 X 0.50                                                             | 2.2                       | 1.6                   | 0.132                                    | 22.3            | 26.1 | 1644                         |
| 185                              | 925 X 0.50                                                             | 2.4                       | 1.7                   | 0.108                                    | 24.5            | 28.6 | 2001                         |
| 240                              | 1221 X 0.50                                                            | 2.4                       | 1.8                   | 0.0817                                   | 27.1            | 31.7 | 2520                         |
| 300                              | 1525 X 0.50                                                            | 2.4                       | 1.9                   | 0.0654                                   | 29.5            | 34.6 | 3040                         |
| 400                              | 2013 X 0.50                                                            | 2.6                       | 2.0                   | 0.0495                                   | 33.2            | 38.9 | 3894                         |

## BS EN 50382-2 SINGLE CORE ATC CONDUCTOR SILICONE INSULATED SHEATHED ROLLING STOCK CABLE

1.8/3KV Rated Type FF, 120°C

**Svarn BS EN 50382-2 Single Core ATC Conductor Silicone Insulated Sheathed Rolling Stock Cables** are used in Driver desks, Control panels, wiring harness in inside/outside moving vehicles.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5
- Insulation : Cross linked Silicone Rubber
- Screen : Tinned Copper Braid
- Outer sheath : Cross linked Silicone Rubber Black color or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 3.6/6kV
- Specification : BS EN 50382 - 2
- In addition to BS EN 50382 spec, cables also meet fire performance tests as per EN 50306-2, DIN 5510-2, BS 6853, NF F 16-101

### FEATURES

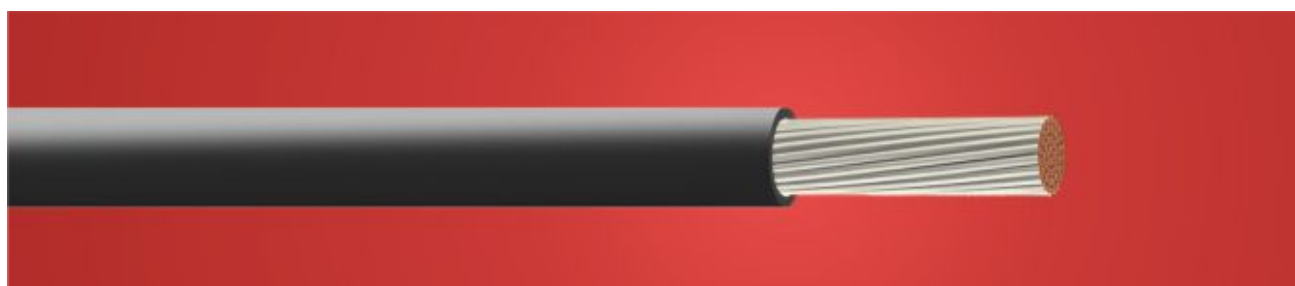
- Halogen free
- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Flame retardant
- Oil resistant
- Low temperature resistant
- Resistance to ozone, chemical oil and fuel

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Insulation Thickness (Mm) | Sheath thickness (Mm) | Max. Conductor Resistance at 20°C (Ω/km) | Conductor Dia. (Mm) | Outer Dia. (Mm) | Cable weight Approx. (Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|---------------------------|-----------------------|------------------------------------------|---------------------|-----------------|------------------------------|
| 1.5                              | 30 X 0.25                                                              | 1.3                       | 1.4                   | 13.7                                     | 1.5                 | 7.4             | 111                          |
| 2.5                              | 50 X 0.25                                                              | 1.3                       | 1.4                   | 8.21                                     | 1.95                | 7.8             | 131                          |
| 4                                | 56 X 0.30                                                              | 1.3                       | 1.4                   | 5.09                                     | 2.5                 | 8.4             | 168                          |
| 6                                | 84 X 0.30                                                              | 1.3                       | 1.4                   | 3.39                                     | 3.0                 | 8.9             | 201                          |
| 10                               | 80 X 0.40                                                              | 1.3                       | 1.4                   | 1.95                                     | 3.9                 | 10.2            | 277                          |
| 16                               | 126 X 0.40                                                             | 1.5                       | 1.4                   | 1.24                                     | 5.0                 | 11.4            | 373                          |
| 25                               | 196 X 0.40                                                             | 1.5                       | 1.4                   | 0.795                                    | 6.4                 | 13.4            | 528                          |
| 35                               | 276 X 0.40                                                             | 1.8                       | 1.4                   | 0.565                                    | 7.7                 | 14.8            | 668                          |
| 50                               | 396 X 0.40                                                             | 1.8                       | 1.4                   | 0.393                                    | 9.2                 | 16.3            | 864                          |
| 70                               | 360 X 0.50                                                             | 1.8                       | 1.5                   | 0.277                                    | 11.0                | 18.3            | 1151                         |
| 95                               | 475 X 0.50                                                             | 1.8                       | 1.5                   | 0.210                                    | 12.5                | 20.6            | 1453                         |
| 120                              | 608 X 0.50                                                             | 2.2                       | 1.6                   | 0.164                                    | 14.2                | 22.6            | 1783                         |
| 150                              | 756 X 0.50                                                             | 2.2                       | 1.6                   | 0.132                                    | 15.8                | 24.2            | 2144                         |
| 185                              | 925 X 0.50                                                             | 2.4                       | 1.7                   | 0.108                                    | 17.5                | 26.6            | 2554                         |
| 240                              | 1221 X 0.50                                                            | 2.4                       | 1.8                   | 0.0817                                   | 20.1                | 29.4            | 3252                         |
| 300                              | 1525 X 0.50                                                            | 2.4                       | 1.9                   | 0.0654                                   | 22.5                | 32.1            | 3935                         |
| 400                              | 2013 X 0.50                                                            | 2.6                       | 2.0                   | 0.0495                                   | 25.8                | 36.1            | 5067                         |

## BS EN 50382-2 SINGLE CORE ATC CONDUCTOR SILICONE RUBBER INSULATED UNSHEATHED ROLLING STOCK CABLE

### 3.6/6KV Rated Type F

**Svarn BS EN 50382-2 Single Core ATC Conductor Silicone Rubber Insulated Unsheathed Rolling Stock Cables** are used for high temperature applications in railway vehicles. Also used as power and control cables for protected installation inside & outside of rolling stock. Used in auxiliary & main circuit wiring such as control panels, monitoring control, electric heating, lighting etc.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Class 5 Conductor as per EN 60228
- Insulation : EBXL- EI 111 with properties according BS EN 50382-1

#### TECHNICAL DATA

- Specification : BS EN 50382-2:2008
- Test voltage : 2kV
- Working Voltage : 3.6/6kV
- Max. Operating temperature : 120°C
- Type F as per BS EN 50382-2 F : EI 111 (Insulation Material)
- Cables also meet fire performance tests as per : EN 50306-2, DIN 5510-2, BS 6853, NF F 16-101

#### FEATURES

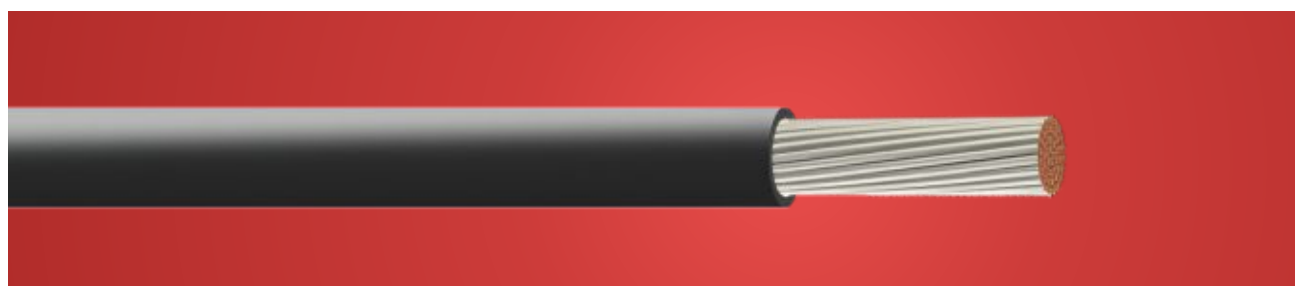
- Halogen free
- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Flame retardant
- Oil resistant
- Low temperature resistant
- Resistance to ozone, chemical oil and fuel

| Cross Section (mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (mm) | Insulation Thickness (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Outer Dia. (mm) |      | Cable weight Approx. (kg/km) |
|----------------------------------|------------------------------------------------------------------------|---------------------------|------------------------------------------|-----------------|------|------------------------------|
|                                  |                                                                        |                           |                                          | Min.            | Max. |                              |
| 2.5                              | 50 X 0.25                                                              | 3.0                       | 8.21                                     | 7.6             | 8.9  | 78                           |
| 4                                | 56 X 0.30                                                              | 3.0                       | 5.09                                     | 8.1             | 9.5  | 97                           |
| 6                                | 84 X 0.30                                                              | 3.0                       | 3.39                                     | 9.0             | 10.6 | 120                          |
| 10                               | 80 X 0.40                                                              | 3.0                       | 1.95                                     | 9.5             | 11.1 | 169                          |
| 16                               | 126 X 0.40                                                             | 3.0                       | 1.24                                     | 10.5            | 12.3 | 232                          |
| 25                               | 196 X 0.40                                                             | 3.0                       | 0.795                                    | 11.8            | 13.8 | 322                          |
| 35                               | 276 X 0.40                                                             | 3.0                       | 0.565                                    | 13.0            | 15.2 | 418                          |
| 50                               | 396 X 0.40                                                             | 3.0                       | 0.396                                    | 14.4            | 16.9 | 559                          |
| 70                               | 360 X 0.40                                                             | 3.0                       | 0.277                                    | 16.1            | 18.9 | 744                          |
| 95                               | 475 X 0.50                                                             | 3.0                       | 0.210                                    | 17.5            | 20.5 | 994                          |
| 120                              | 608 X 0.50                                                             | 3.1                       | 0.164                                    | 19.3            | 22.6 | 1220                         |
| 150                              | 756 X 0.50                                                             | 3.1                       | 0.132                                    | 20.8            | 24.4 | 1487                         |
| 185                              | 925 X 0.50                                                             | 3.2                       | 0.108                                    | 22.6            | 26.5 | 1794                         |
| 240                              | 1221 X 0.50                                                            | 3.4                       | 0.0817                                   | 25.4            | 29.8 | 2277                         |
| 300                              | 1525 X 0.50                                                            | 3.4                       | 0.0654                                   | 27.7            | 32.4 | 2775                         |
| 400                              | 2013 X 0.50                                                            | 3.4                       | 0.0495                                   | 30.8            | 36.0 | 3610                         |

## BS EN 50382-2 SINGLE CORE ATC CONDUCTOR SILICONE RUBBER INSULATED & UNSHEATHED ROLLING STOCK CABLE

### 3.6/6kV Rated Type FX, 120°C

**Svarn BS EN 50382-2 Single Core ATC Conductor Silicone Rubber Insulated & Unsheathed Rolling Stock Cables** are used for high temperature applications in railway vehicles. Used as power and control cables for protected installation inside & outside of rolling stock.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Class 5 Conductor as per EN 60228
- Insulation : EBXL- EI 111 with properties according BS EN 50382-1

#### TECHNICAL DATA

- Specification : BS EN 50382-2:2008
- Test voltage : 11kV
- Working Voltage : 3.6/6kV
- Max. Operating Temperature : 120°C
- Type FX as per BS EN 503382-2  
F: EI 111(Insulation Material) X: Class 6 Conductor
- Cables also meet fire performance tests as per EN 50306-2, DIN 5510-2, BS 6853

#### FEATURES

- Halogen free
- Flame retardant
- Oil resistant
- Low temperature resistant
- Resistance to ozone, chemical oil and fuel

| Cross Section (mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (mm) | Insulation Thickness (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Outer Dia. (mm) |      | Cable weight Approx. (kg/km) |
|----------------------------------|------------------------------------------------------------------------|---------------------------|------------------------------------------|-----------------|------|------------------------------|
|                                  |                                                                        |                           |                                          | Min.            | Max. |                              |
| 50                               | 650 X 0.31                                                             | 3.0                       | 0.393                                    | 15.2            | 17.8 | 559                          |
| 70                               | 930 X 0.31                                                             | 3.0                       | 0.277                                    | 16.9            | 19.8 | 744                          |
| 95                               | 1200 X 0.31                                                            | 3.0                       | 0.210                                    | 18.3            | 21.4 | 994                          |
| 120                              | 1550 X 0.31                                                            | 3.1                       | 0.164                                    | 20.1            | 23.5 | 1220                         |
| 150                              | 1920 X 0.31                                                            | 3.1                       | 0.132                                    | 21.6            | 25.3 | 1487                         |
| 185                              | 1350 X 0.41                                                            | 3.2                       | 0.108                                    | 23.4            | 27.4 | 1794                         |

## BS EN 50382-2 SINGLE CORE ATC CONDUCTOR SILICONE RUBBER INSULATED & SHEATHED ROLLING STOCK CABLE

### 3.6/6kV Rated Type FF, 120°C

**Svarn BS EN 50382-2 Single Core ATC Conductor Silicone Rubber Insulated & Sheathed Rolling Stock Cables** are used for high temperature applications in railway vehicles. Used as power and control cables for protected installation inside & outside of rolling stock. Used in auxiliary & main circuit wiring such as control panels, monitoring control, electric heating, lighting etc.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper class 5 Conductor as per EN 60228
- Insulation : EBXL- EI 111 with properties according BS EN 50382-1
- Sheath : EBXL - EM 106 with properties according BS EN 50382-4

#### TECHNICAL DATA

- Specification : BS EN 50382-2:2008
- Test voltage : 11kV
- Working Voltage : 3.6/6kV
- Max. Operating Temperature : 120°C
- Type FX as per BS EN 50382-2  
F: EI 111(Insulation Material)  
F: EM106 (Sheath Material)
- Cables also meet fire performance tests as per EN 50306-2, DIN 5510-2, BS 6853

#### FEATURES

- Halogen free
- Flame retardant
- Oil resistant
- Low temperature resistant
- Resistance to ozone, chemical oil and fuel

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Insulation Thickness (mm) | Sheath Thickness (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Outer Dia. (Mm) |      | Cable weight Approx. (Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|---------------------------|-----------------------|------------------------------------------|-----------------|------|------------------------------|
|                                  |                                                                        |                           |                       |                                          | Min.            | Max. |                              |
| 2.5                              | 50 X 0.25                                                              | 2.6                       | 1.4                   | 8.21                                     | 9.9             | 11.6 | 93                           |
| 4                                | 56 X 0.30                                                              | 2.6                       | 1.4                   | 5.09                                     | 10.4            | 12.2 | 113                          |
| 6                                | 84 X 0.40                                                              | 2.6                       | 1.4                   | 3.39                                     | 10.9            | 12.8 | 137                          |
| 10                               | 80 X 0.40                                                              | 2.6                       | 1.4                   | 1.95                                     | 11.8            | 13.8 | 199                          |
| 16                               | 126 X 0.40                                                             | 2.6                       | 1.4                   | 1.24                                     | 12.8            | 15.0 | 265                          |
| 25                               | 196 X 0.40                                                             | 2.9                       | 1.4                   | 0.795                                    | 14.7            | 17.2 | 377                          |
| 35                               | 276 X 0.40                                                             | 2.9                       | 1.4                   | 0.565                                    | 15.9            | 18.6 | 479                          |
| 50                               | 396 X 0.40                                                             | 2.9                       | 1.5                   | 0.393                                    | 17.5            | 20.5 | 627                          |
| 70                               | 360 X 0.40                                                             | 2.9                       | 1.5                   | 0.277                                    | 19.2            | 22.4 | 837                          |
| 95                               | 475 X 0.50                                                             | 2.9                       | 1.6                   | 0.210                                    | 20.8            | 24.3 | 1119                         |
| 120                              | 608 X 0.50                                                             | 2.9                       | 1.6                   | 0.164                                    | 22.4            | 26.2 | 1366                         |
| 150                              | 756 X 0.50                                                             | 2.9                       | 1.7                   | 0.132                                    | 24.1            | 28.2 | 1644                         |
| 185                              | 925 X 0.50                                                             | 3.2                       | 1.8                   | 0.108                                    | 26.4            | 30.9 | 2001                         |
| 240                              | 1221 X 0.50                                                            | 3.4                       | 1.9                   | 0.0817                                   | 29.4            | 34.4 | 2520                         |
| 300                              | 1525 X 0.50                                                            | 3.4                       | 1.9                   | 0.0654                                   | 31.7            | 37.1 | 3040                         |
| 400                              | 2013 X 0.50                                                            | 3.4                       | 2.0                   | 0.0495                                   | 35.0            | 40.9 | 3894                         |

## MULTICORE/MULTIPAIR CORE INSULATED EBXL CABLES FOR ELECTRIC LOCOMOTIVES

### 300/300V Dual Wall

**Svarn Multicore/Multipair Core Insulated EBXL Cables for Electric Locomotives** are used for protecting permanent installation inside and out side railway rolling stock to connect fixed and moving parts. Used for WAG - 9 / WAP - 5 Locomotive.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper conductor, according to IEC 228, Class 5
- Insulation : EBXL - EPDM
- Braiding : ATC
- Outer sheath : EBXL - XLPO

#### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300/300V
- Short Circuit Temp : +280°C
- Test Voltage : 1.5 kv, 50hz for 15 min
- Min. Bending Radius : 5 x OD Cable
- Flame propagation : As per IEC 332 - 3 Cat C
- Specification: CLW / ES / 3 / 0459 DS-1

#### FEATURES

- Halogen free
- Minimum Flame spread
- Low smoke Emission
- Less Toxic Fume Emission
- Electron Beam Irradiated Cross Linked
- Easy to strip
- Excellent resistance to high & low temperature, Oil, Ozone, Weathering and Abrasion
- Limited Fire Hazard Type

| No of cores X<br>Nominal Cross Section<br>Area Of Core | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (mm) | Nominal<br>Conductor<br>Dia. | Cable Dia.<br>(mm) | Max. Conductor<br>Resistance at<br>20°C (Ω/km) | Min. Wall Thickness (mm) |                | Cable weight<br>Approx.<br>(kg/km) |
|--------------------------------------------------------|------------------------------------------------------------------------|------------------------------|--------------------|------------------------------------------------|--------------------------|----------------|------------------------------------|
|                                                        |                                                                        |                              |                    |                                                | Insulation<br>(mm)       | Sheath<br>(mm) |                                    |
| Multicore Screened Cable                               |                                                                        |                              |                    |                                                |                          |                |                                    |
| 2 X 0.5                                                | 19 X 0.176                                                             | 0.86                         | 5.3 ± 0.3          | 41.1                                           | 0.25                     | 0.75           | 43                                 |
| 3 X 0.5                                                | 19 X 0.176                                                             | 0.86                         | 5.5 ± 0.3          | 41.1                                           | 0.25                     | 0.75           | 47                                 |
| 5 X 0.5                                                | 19 X 0.176                                                             | 0.86                         | 6.8 ± 0.3          | 41.1                                           | 0.25                     | 0.80           | 79                                 |
| 9 X 0.5                                                | 19 X 0.176                                                             | 0.86                         | 8.2 ± 0.3          | 41.1                                           | 0.25                     | 0.80           | 118                                |
| Twisted Cable                                          |                                                                        |                              |                    |                                                |                          |                |                                    |
| 9 X 0.5                                                | 19 X 0.176                                                             | 0.89                         | 7.0 ± 0.3          | 41.1                                           | 0.25                     | 0.80           | 86                                 |
| 25 X 0.5                                               | 19 X 0.176                                                             | 0.89                         | 11.2 ± 0.4         | 41.1                                           | 0.25                     | 0.95           | 210                                |
| Multipair Screened Cable                               |                                                                        |                              |                    |                                                |                          |                |                                    |
| 2 X 2 X 0.5                                            | 19 X 0.176                                                             | 0.86                         | 7.8 ± 0.3          | 43.1                                           | 0.25                     | 0.90           | 92                                 |

## SINGLE CORE HIGH CONDUCTIVITY COPPER CONDUCTOR SHEATHED WELDING CABLE

### EM-5 Chlorinated Rubber Compound 85°C, as per DIN VDE 0282

**Svarn Single Core High Conductivity Copper Conductor Sheathed Welding Cables** are used for use between welding generator and the hand electrode and the work piece. For use in automobile industry, in ship building, in transport and conveyor systems, tool making machinery, welding robots, etc.



#### CABLE STRUCTURE

- Conductor : Fine stranded plain or tinned class-6 copper conductors conforming to DIN VDE 0295, IEC 60228 and HD 383
- Separator : Dry Paper, Polyester Tape
- Sheath : Neoprene outer jacket, chlorinated rubber compound Em5
- Color : Orange or Black

#### TECHNICAL DATA

- Temperature Range : 85°C
- Voltage for Testing : 1000 V AC
- Bending Radius(Minimum) : 6x Overall dia.

#### FEATURES

- Flexibility under rough, open dry, damp conditions
- Oil resistant to DIN EN 60811-2-1
- High flexibility under the effect of ozone, light oxygen, inert gas, oil or petrol

| Nominal conductor area (mm <sup>2</sup> ) | Maximum strand Dia. (mm) | Insulation Thickness (mm) | Approx. overall Dia. (mm) | Cable weight Approx. (Kg/Km) | Max. Conductor Resistance at 20°C (Ω/km) |             |
|-------------------------------------------|--------------------------|---------------------------|---------------------------|------------------------------|------------------------------------------|-------------|
|                                           |                          |                           |                           |                              | Plain wire                               | Tinned wire |
| 10                                        | 0.21                     | 2.0                       | 8.8                       | 153                          | 1.83                                     | 1.84        |
| 16                                        | 0.21                     | 2.0                       | 9.9                       | 220                          | 1.15                                     | 1.16        |
| 25                                        | 0.21                     | 2.0                       | 11.2                      | 310                          | 0.727                                    | 0.734       |
| 35                                        | 0.21                     | 2.0                       | 12.4                      | 410                          | 0.524                                    | 0.529       |
| 50                                        | 0.21                     | 2.2                       | 14.4                      | 565                          | 0.387                                    | 0.391       |
| 70                                        | 0.21                     | 2.4                       | 16.5                      | 780                          | 0.268                                    | 0.270       |
| 95                                        | 0.21                     | 2.6                       | 18.7                      | 1040                         | 0.193                                    | 0.195       |
| 120                                       | 0.51                     | 2.8                       | 20.6                      | 1300                         | 0.153                                    | 0.154       |
| 150                                       | 0.51                     | 3.0                       | 22.7                      | 1600                         | 0.124                                    | 0.126       |

## EMD/4002337 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLES

125°C

**Svarn EMD/4002337 ATC Diesel Electric Locomotive EBXL Cables** are used for tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Tape : Polyester
- Drain wire : ATC
- Screening: Al.Mylar tape
- Outer Sheath: Specially formulated dual layer EBXL 125°C
- Color: Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 250 V AC
- Specification: EDPS 179 - 4002337

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| No of cores and conductor size | Outer Diameter |               | Total weight Approx. (kg/km) |
|--------------------------------|----------------|---------------|------------------------------|
|                                | mm             | inches        |                              |
| 4Cx16 AWG                      | 7.1628 ± 0.381 | 0.282 ± 0.015 | 86.31                        |

## EMD/4002337 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLE

125°C

**Svarn EMD/4002337 ATC Diesel Electric Locomotive EBXL Cables** are used for Tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 250 V AC
- Specification: EDPS 179 & 304 - 9094883

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| EDPS specification | No of Cores X Conductor size (No's X mm) | Voltage rating AC(V) | Outer Diameter |        | Total weight approx. (kg/km) |
|--------------------|------------------------------------------|----------------------|----------------|--------|------------------------------|
|                    |                                          |                      | mm             | inches |                              |
| 179                | 1Cx18 AWG                                | 600                  | 2.82           | 0.111  | 16.52                        |
| 179                | 1Cx18 AWG                                | 600                  | 2.82           | 0.111  | 16.52                        |
| 179                | 1Cx16 AWG                                | 600                  | 3.10           | 0.122  | 21.58                        |
| 179                | 1Cx16 AWG                                | 600                  | 3.10           | 0.122  | 21.58                        |
| 179                | 1Cx16 AWG                                | 2000                 | 3.86           | 0.152  | 27.98                        |
| 179                | 1Cx14 AWG                                | 600                  | 3.53           | 0.139  | 32.14                        |
| 179                | 1Cx14 AWG                                | 1500                 | 4.19           | 0.165  | 38.10                        |
| 179                | 1Cx14 AWG                                | 600                  | 4.19           | 0.139  | 28.05                        |
| 179                | 1Cx12 AWG                                | 600                  | 4.04           | 0.159  | 46.73                        |
| 179                | 1Cx12 AWG                                | 2000                 | 4.80           | 0.189  | 54.91                        |
| 179                | 1Cx12 AWG                                | 1600                 | 4.80           | 0.189  | 51.60                        |
| 179                | 1Cx8 AWG                                 | 2000                 | 6.63           | 0.261  | 105.66                       |
| 179                | 1Cx5 AWG                                 | 2000                 | 9.12           | 0.359  | 235.12                       |
| 179                | 1Cx3 AWG                                 | 2000                 | 10.34          | 0.407  | 306.55                       |

| EDPS specification | No of Cores X Conductor size<br>(No's X mm) | Voltage rating AC(V) | Outer Diameter |        | Total weight approx. (kg/km) |
|--------------------|---------------------------------------------|----------------------|----------------|--------|------------------------------|
|                    |                                             |                      | mm             | inches |                              |
| 304                | 1Cx1 AWG                                    | 2000                 | 13.46          | 0.53   | 543.16                       |
| 304                | 1Cx2/0 AWG                                  | 2000                 | 15.75          | 0.62   | 735.12                       |
| 304                | 1Cx4/0 AWG                                  | 2100                 | 21.51          | 0.847  | 1297.62                      |
| 304                | 1Cx313 AWG                                  | 2100                 | 24.46          | 0.963  | 1809.53                      |
| 304                | 1Cx225.2 Sq.mm                              | 2100                 | 26.88          | 1.058  | 2428.58                      |
| 304                | 1Cx535 AWG                                  | 2100                 | 31.62          | 1.245  | 3025.31                      |
| 304                | 1Cx597 AWG                                  | 2100                 | 33.02          | 1.3    | 3252.99                      |
| 179                | 1Cx10 AWG                                   | 2000                 | 5.54           | 0.218  | 75.89                        |
| 179                | 1Cx20 AWG                                   | 600                  | 1.80           | 0.071  | 8.02                         |
| 179                | 1Cx20 AWG                                   | 600                  | 2.54           | 0.1    | 11.90                        |
| 304                | 1Cx2/0 AWG                                  | 2100                 | 17.53          | 0.69   | 821.43                       |
| 304                | 1Cx1 AWG                                    | 2100                 | 15.75          | 0.62   | 607.14                       |
| 304                | 1Cx535 AWG                                  | 2100                 | 29.08          | 1.145  | 2815.49                      |
| 304                | 1Cx646 AWG                                  | 2100                 | 32.26          | 1.27   | 3306.56                      |
| 304                | 1Cx585 MCM                                  | 2000                 | 29.04          | 1.143  | 2788.41                      |
| 304                | 1Cx444 AWG                                  | 2100                 | 27.43          | 1.08   | 2200.90                      |
| 304                | 1Cx597 AWG                                  | 2100                 | 30.61          | 1.205  | 3132.45                      |
| 304                | 1Cx4/0 AWG                                  | 2100                 | 20.96          | 0.825  | 1272.33                      |
| 304                | 1Cx777 AWG                                  | 2100                 | 35.66          | 1.404  | 4159.24                      |

## EMD/9513207 ATC DIESEL ELECTRIC LOCOMOTIVE CABLE

125°C

**Svarn EMD/9513207 ATC Diesel Electric Locomotive Cables** are used for Tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Tape : Polyester
- Drain wire : ATC
- Screening : Al.Mylar tape
- Outer Sheath : Neoprene
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Specification: EDPS 179 - 9513207

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| No of cores and conductor size | Outer Diameter |             | Total weight Approx. (kg/km) |
|--------------------------------|----------------|-------------|------------------------------|
|                                | mm             | inches      |                              |
| 5Cx16 AWG                      | 10.414 ± 0.508 | 0.41 ± 0.02 | 178.57                       |

## EMD/40012496 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLES

125°C

Svarn EMD/40012496 ATC Diesel Electric Locomotive EBXL Cables are used for tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Tape : Polyester
- Drain wire : ATC
- Screening : Al.Mylar tape
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 250 V DC
- Specification : EDPS 179-40012496

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| No of cores and conductor size | Outer Diameter |              | Total weight Approx. (kg/km) |
|--------------------------------|----------------|--------------|------------------------------|
|                                | mm             | inches       |                              |
| 4Cx 16 AWG                     | 8.6614 ± 0.508 | 0.341± 0.020 | 127.93                       |

## EMD/9513207 ATC DIESEL ELECTRIC LOCOMOTIVE CABLE

125°C

**Svarn EMD/9513207 ATC Diesel Electric Locomotive Cables** are used for Tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Tape : Polyester
- Drain wire : ATC
- Screening : Al.Mylar tape
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Specification: EDPS 179 - 9513207

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X Conductor Size<br>(No's X mm) | Outer Diameter                 |                               | Total weight Approx.<br>(kg/km) |
|-------------------------------------------------|--------------------------------|-------------------------------|---------------------------------|
|                                                 | mm                             | inches                        |                                 |
| 2Cx20 AWG                                       | 6.1976+0.152 /<br>6.1976-0.381 | 0.244+ 0.006 /<br>0.244-0.015 | 73.21                           |

## EMD/40020750 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLES

125°C

**Svarn EMD/40020750 ATC Diesel Electric Locomotive EBXL Cables** are used for tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Tape : Polyester
- Drain wire : ATC
- Screening : Al.Mylar tape
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 900 V AC
- Specification: EDPS 179 - 40020750

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X Conductor Size<br>(No's X mm) | Outer Diameter  |               | Total weight Approx.<br>(kg/km) |
|-------------------------------------------------|-----------------|---------------|---------------------------------|
|                                                 | mm              | inches        |                                 |
| 6Px20 AWG                                       | 12.4714 ± 0.635 | 0.491 ± 0.025 | 238.10                          |

## EMD/40028096 ATC DIESEL ELECTRIC LOCOMOTIVE CABLE

125°C

Svarn EMD/40028096 ATC Diesel Electric Locomotive Cables are used for Tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Tape : Polyester
- Drain wire : ATC
- Screening : Al.Mylar tape
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 300 V AC
- Specification: EDPS 179 - 40028096

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X<br>Conductor Size<br>(No's X mm) | Outer Diameter  |              | Total weight Approx.<br>(kg/km) |
|----------------------------------------------------|-----------------|--------------|---------------------------------|
|                                                    | mm              | inches       |                                 |
| 11Px20 AWG                                         | 14.1224 ± 0.508 | 0.556 ± 0.02 | 260.42                          |

## EMD/40036047 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLES

125°C

**Svarn EMD/40036047 ATC Diesel Electric Locomotive EBXL Cables** are used for tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Laid up : Cores are twisted
- Outer Sheath : Specially formulated Dual Layer, EBXL 125°C
- Color: Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 600 V AC
- Specification: EDPS 179 - 40036047

### FEATURES

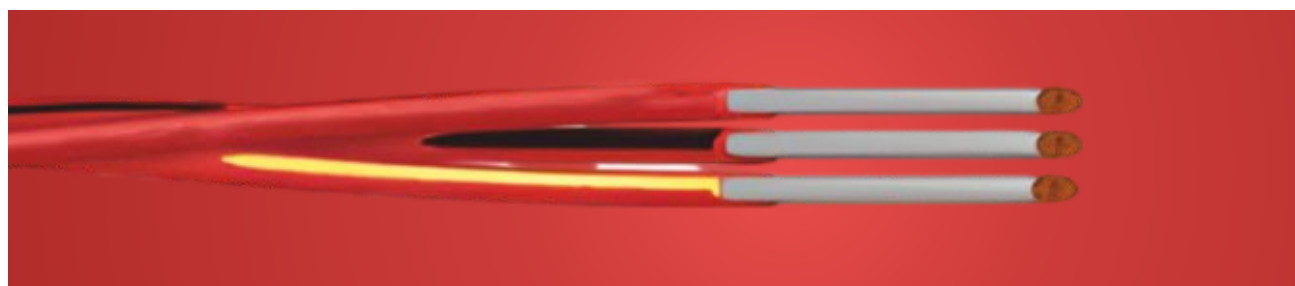
- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X Conductor Size<br>(No's X mm) | Outer Diameter |        | Total weight Approx.<br>(kg/km) |
|-------------------------------------------------|----------------|--------|---------------------------------|
|                                                 | mm             | inches |                                 |
| 3Cx18 AWG                                       | 5.84           | 0.230  | 49.94                           |

## EMD/40036048 ATC DIESEL ELECTRIC LOCOMOTIVE CABLE

125°C

**Svarn EMD/40036048 ATC Diesel Electric Locomotive Cables** are used for Tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Laid up : Cores are twisted
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 600 V AC
- Specification : EDPS 179 - 40036048

### FEATURES

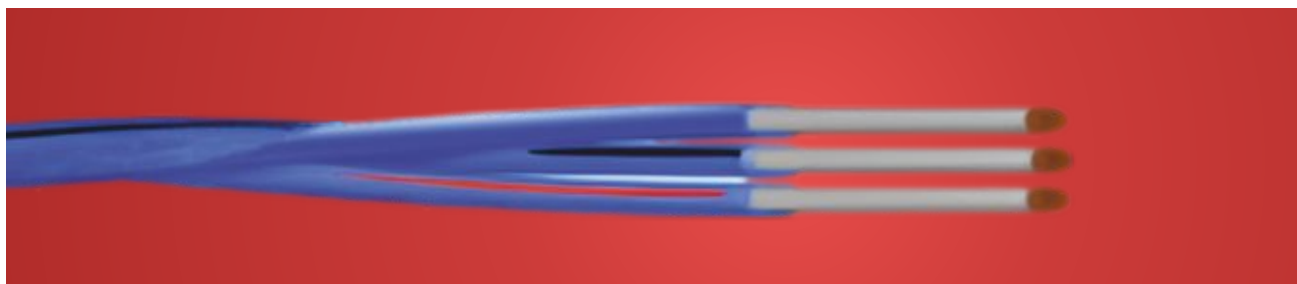
- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X<br>Conductor Size<br>(No's X mm) | Outer Diameter |        | Total weight Approx.<br>(kg/km) |
|----------------------------------------------------|----------------|--------|---------------------------------|
|                                                    | mm             | inches |                                 |
| 3Cx16 AWG                                          | 6.45           | 0.254  | 65.80                           |

## EMD/40036049 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLES

125°C

**Svarn EMD/40036049 ATC Diesel Electric Locomotive EBXL Cables** are used for tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Laid up : Cores are twisted
- Color: Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 2000 V AC
- Specification: EDPS 179 - 40036049

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X<br>Conductor Size<br>(No's X mm) | Outer Diameter |        | Total weight Approx.<br>(kg/km) |
|----------------------------------------------------|----------------|--------|---------------------------------|
|                                                    | mm             | inches |                                 |
| 3Cx12 AWG                                          | 10.11          | 0.398  | 169.66                          |

## EMD/40052869 ATC DIESEL ELECTRIC LOCOMOTIVE CABLE

125°C

**Svarn EMD/40052869 ATC Diesel Electric Locomotive Cables** are used for Tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Laid up : Cores are twisted
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 600 V AC
- Specification : EDPS 179 - 40052869

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X<br>Conductor Size<br>(No's X mm) | Outer Diameter |        | Total weight Approx.<br>(kg/km) |
|----------------------------------------------------|----------------|--------|---------------------------------|
|                                                    | mm             | inches |                                 |
| 1Cx10 AWG<br>+<br>9C X 12 AWG<br>+<br>17C X AWG    | 24.13          | 0.95   | 1161                            |

## EMD/40059175 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLES

125°C

**Svarn EMD/40059175 ATC Diesel Electric Locomotive EBXL Cables** are used for tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Drain wire : ATC
- Screening : Al.Mylar tape
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 250 V AC
- Specification: EDPS 179 - 40059175

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X Conductor Size<br>(No's X mm) | Outer Diameter  |              | Total weight Approx.<br>(kg/km) |
|-------------------------------------------------|-----------------|--------------|---------------------------------|
|                                                 | mm              | inches       |                                 |
| 14Cx16 AWG                                      | 12.3952 ± 0.508 | 0.488 ± 0.02 | 285.72                          |

## EMD/40061670 ATC DIESEL ELECTRIC LOCOMOTIVE CABLE

125°C

**Svarn EMD/40061670 ATC Diesel Electric Locomotive Cables** are used for Tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Drain wire : ATC
- Screening : Al.Mylar tape
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 1800 V AC
- Specification : EDPS 179 - 40061670

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X Conductor Size<br>(No's X mm) | Outer Diameter |               | Total weight Approx.<br>(kg/km) |
|-------------------------------------------------|----------------|---------------|---------------------------------|
|                                                 | mm             | inches        |                                 |
| 3Cx16 AWG                                       | 8.4328 ± 0.381 | 0.332 ± 0.015 | 111.61                          |

## EMD/40071800 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLES

125°C

**Svarn EMD/40071800 ATC Diesel Electric Locomotive EBXL Cables** are used for tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Drain wire : ATC
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 2000 V AC
- Specification: EDPS 179 - 40071800

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X Conductor Size<br>(No's X mm) | Outer Diameter |              | Total weight Approx.<br>(kg/km) |
|-------------------------------------------------|----------------|--------------|---------------------------------|
|                                                 | mm             | inches       |                                 |
| 1Px12 AWG                                       | 9.398 ± 0.381  | 0.37 ± 0.015 | 111.61                          |

## EMD/40071801 ATC DIESEL ELECTRIC LOCOMOTIVE CABLE

125°C

**Svarn EMD/40071801 ATC Diesel Electric Locomotive Cables** are used for Tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Laid up : Cores are twisted
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 1000 V AC
- Specification: EDPS 179 - 40071801

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X Conductor Size<br>(No's X mm) | Outer Diameter |        | Total weight Approx.<br>(kg/km) |
|-------------------------------------------------|----------------|--------|---------------------------------|
|                                                 | mm             | inches |                                 |
| 1Px14 AWG                                       | 7.24           | 0.285  | 61.59                           |

## EMD/40071896 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLES

125°C

**Svarn EMD/40071896 ATC Diesel Electric Locomotive EBXL Cables** are used for tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Laid up : Cores are twisted
- Screening : Al.Mylar tape
- Tape : Polyester
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 600 V AC
- Specification: EDPS 179 - 40071896

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X Conductor Size<br>(No's X mm) | Outer Diameter  |               | Total weight Approx.<br>(kg/km) |
|-------------------------------------------------|-----------------|---------------|---------------------------------|
|                                                 | mm              | inches        |                                 |
| 2P×16 AWG                                       | 13.1572 ± 0.508 | 0.518 ± 0.020 | 163.69                          |

## EMD/40210762 ATC DIESEL ELECTRIC LOCOMOTIVE CABLE

125°C

**Svarn EMD/40210762 ATC Diesel Electric Locomotive Cables** are used for Tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Laid up : Cores are twisted
- Screening : Al.Mylar tape
- Tape : Polyester
- Color : Grey or As per customer order

### TECHNICAL DATA

- Temperature Range : -55°C to +125°C (>10000 hrs. @ +125°C)
- Rated Voltage : 600 V AC (1800 V DC)
- Specification: EDPS 179 - 40210762
- Insulation Resistance (IR) : 3547M $\Omega$ /1000ft

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| Number of cores X<br>Conductor Size<br>(No's X mm) | Outer Diameter   |                   | Total weight Approx.<br>(kg/km) |
|----------------------------------------------------|------------------|-------------------|---------------------------------|
|                                                    | mm               | inches            |                                 |
| 2P x 40 AWG                                        | 10.49 $\pm$ 0.64 | 0.413 $\pm$ 0.025 | 139.83                          |

## EMD/EL/PT/505 ATC DIESEL ELECTRIC LOCOMOTIVE EBXL CABLES

### 125°C

**Svarn EMD/EL/PT/505 ATC Diesel Electric Locomotive EBXL Cables** are used for tap Changer of Electric Locomotives. For Diesel Electric Locomotive Cables.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Copper Flexible Conductor
- Insulation : Specially formulated Dual Layer, EBXL 125°C
- Outer Sheath : Specially formulated dual layer EBXL 125°C
- Color : Grey or As per customer order

#### TECHNICAL DATA

- Temperature Range : -65°C to +125°C (>10000 hrs. @ +125°C)
- Specification: EDPS 179 & 304 - EL/PT/505

#### FEATURES

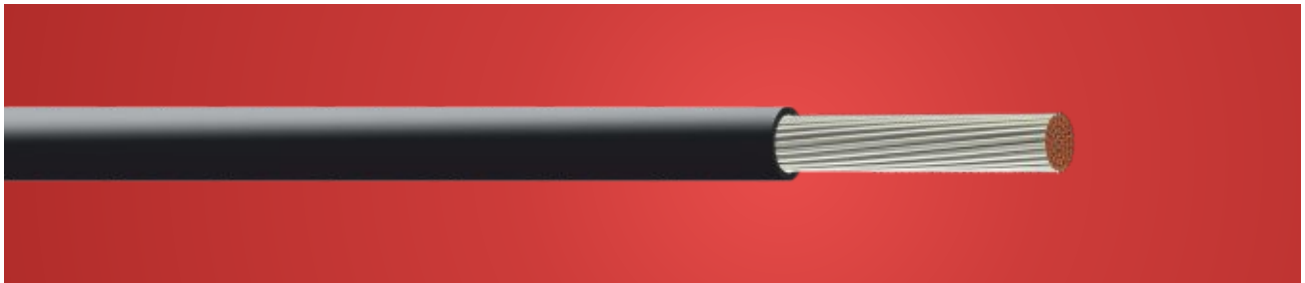
- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Excellent flexibility
- Resistance to Oil, Fuel, Ozone and Weathering
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked

| EDPS Specification | Number of cores and mm2 per conductor | Voltage Rating AC (V) | Outer Diameter in mm Approx | Total weight Approx. (kg/km) |
|--------------------|---------------------------------------|-----------------------|-----------------------------|------------------------------|
| 179                | 1Cx1.5                                | 1800                  | 3.90-4.06                   | 30                           |
| 179                | 1Cx3                                  | 2000                  | 4.56-4.72                   | 50                           |
| 179                | 1Cx6                                  | 2000                  | 6.14-6.35                   | 90                           |
| 179                | 1Cx35                                 | 2000                  | 11.16-11.50                 | 390                          |
| 304                | 1Cx95                                 | 2100                  | 18.20-18.50                 | 990                          |
| 304                | 1Cx240                                | 2100                  | 28.98-29.60                 | 2520                         |
| 304                | 1Cx300                                | 2100                  | 32.04-32.60                 | 3110                         |
| 179                | 1Cx1.5                                | 600                   | 2.60-2.80                   | 20                           |

## GKW-LW SINGLE CORE EBXL ROLLING STOCK CABLE

600/1000V AC, 900/1500V DC, 120°C

**Svarn GKW-LW Single Core EBXL Rolling Stock Cables** are used for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle. For rail/Bus and other transport vehicles. Wiring in space saving applications. For switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL
- White color or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 600/1000V AC 900/1500V DC
- Specification : In addition to BS EN 50306 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

- Excellent resistance to high and low temperature
- Outstanding Flame retardant
- Halogen free
- Special construction to save space and weight
- Thin walled with excellent flexibility
- Smooth and abrasion resistant surface
- Electron Beam Cross Linked
- Resistance to corona effect

| Cross Section (Mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's) X (Mm) | Conductor Resistance (Ω/km) | Outer Diameter (mm) | Maximum Conductor Resistance at 20 °C (Ω/km) | Cable weight Approx. (Kg/Km) |
|----------------------------------|------------------------------------------------------------------------|-----------------------------|---------------------|----------------------------------------------|------------------------------|
| 0.5                              | 19 X 0.18                                                              | 40.1                        | 1.27                | 0.90                                         | 5                            |
| 20 AWG                           | 19 X 0.18                                                              | 31.1                        | 1.35                | 0.90                                         | 5                            |
| 0.75                             | 19 X 0.23                                                              | 26.7                        | 1.50                | 1.10                                         | 7                            |
| 18 AWG                           | 19 X 0.25                                                              | 20.0                        | 1.65                | 1.10                                         | 8                            |
| 16 AWG                           | 19 X 0.28                                                              | 15.5                        | 1.80                | 1.25                                         | 12                           |
| 1.5                              | 37 X 0.23                                                              | 13.7                        | 2.05                | 1.25                                         | 15                           |
| 14 AWG                           | 37 X 0.25                                                              | 10.5                        | 2.25                | 1.50                                         | 19                           |
| 2.5                              | 19 X 0.40                                                              | 8.21                        | 2.50                | 1.98                                         | 24                           |
| 12 AWG                           | 37 X 0.3                                                               | 6.56                        | 2.75                | 2.45                                         | 31                           |
| 4                                | 56 X 0.3                                                               | 5.09                        | 3.20                | 2.45                                         | 38                           |

## GKW-LW/T EMC MULTI CORE SCREENED EBXL ROLLING STOCK CABLE

600/1000V AC, 900/1500V DC, 120°C

**Svarn GKW-LW/T EMC Multi Core Screened EBXL Rolling Stock Cables** are used for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle. For rail/Bus and other transport vehicles. Wiring in space saving applications. For switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL
- Screen : Annealed Tinned Copper Braid
- Separator : Polyester Tape
- Outer sheath : LSZH - EBXL
- Black color or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 600/1000V AC 900/1500V DC
- Specification : In addition to BS EN 50306 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

- Outstanding Flame retardant
- Thin walled with excellent flexibility
- Smooth and abrasion resistant surface
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked
- Resistance to corona effect

| No of Cores X Nominal Cross Section Area Of Core (Mm <sup>2</sup> ) | Conductor Construction No of strands X strand Dia. (No's) X (Mm) | Outer Dia. (mm) | Core Dia. (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Cable weight Approx. (Kg/Km) |
|---------------------------------------------------------------------|------------------------------------------------------------------|-----------------|----------------|------------------------------------------|------------------------------|
| 10 X 1                                                              | 19 X 0.26                                                        | 9.0             | 1.67           | 20                                       | 161                          |
| 18 X 1                                                              | 19 X 0.26                                                        | 11.4            | 1.67           | 20                                       | 264                          |
| 30 X 1                                                              | 19 X 0.26                                                        | 14.0            | 1.67           | 20                                       | 432                          |
| 50 X 1                                                              | 19 X 0.26                                                        | 18.0            | 1.67           | 20                                       | 663                          |
| 4 X 2 X 1                                                           | 19 X 0.26                                                        | 19.5            | 1.67           | 20                                       | 123                          |
| 3 X 4 X 1                                                           | 19 X 0.26                                                        | 11.5            | 1.67           | 20                                       | 235                          |
| 2 X 1.5                                                             | 37 X 0.23                                                        | 6.0             | 2.04           | 13.7                                     | 67                           |
| 7 X 1.5                                                             | 37 X 0.23                                                        | 9.2             | 2.04           | 13.7                                     | 177                          |
| 10 X 1.5                                                            | 37 X 0.23                                                        | 10.6            | 2.04           | 13.7                                     | 230                          |
| 18 X 1.5                                                            | 37 X 0.23                                                        | 13.4            | 2.04           | 13.7                                     | 389                          |
| 3 X 2 X 1.5                                                         | 37 X 0.23                                                        | 10.0            | 2.04           | 13.7                                     | 197                          |
| 2 X 2.5                                                             | 19 X 0.40                                                        | 7.1             | 2.54           | 8.21                                     | 101                          |
| 6 X 2.5                                                             | 19 X 0.40                                                        | 10.5            | 2.54           | 8.21                                     | 216                          |
| 10 X 2.5                                                            | 19 X 0.40                                                        | 13.4            | 2.54           | 8.21                                     | 355                          |
| 18 X 2.5                                                            | 19 X 0.40                                                        | 16.8            | 2.54           | 8.21                                     | 595                          |
| 27 X 2.5                                                            | 19 X 0.40                                                        | 20.7            | 2.54           | 8.21                                     | 836                          |
| 48 X 2.5                                                            | 19 X 0.40                                                        | 25.7            | 2.54           | 8.21                                     | 1498                         |

## GKW-LW/T EMC MULTI CORE SCREENED EBXL ROLLING STOCK CABLE

600/1000V AC, 900/1500V DC, 120°C

**Svarn GKW-LW/T EMC Multi Core Screened EBXL Rolling Stock Cables** are used for carriage wiring, terminal boxes, control panels, wiring harness in inside/outside moving vehicle. For rail/Bus and other transport vehicles. Wiring in space saving applications. For switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL
- Separator : Polyester Tape
- Outer sheath : LSZH - EBXL
- Black color or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 600/1000V AC 900/1500V DC
- Specification : In addition to BS EN 50306 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

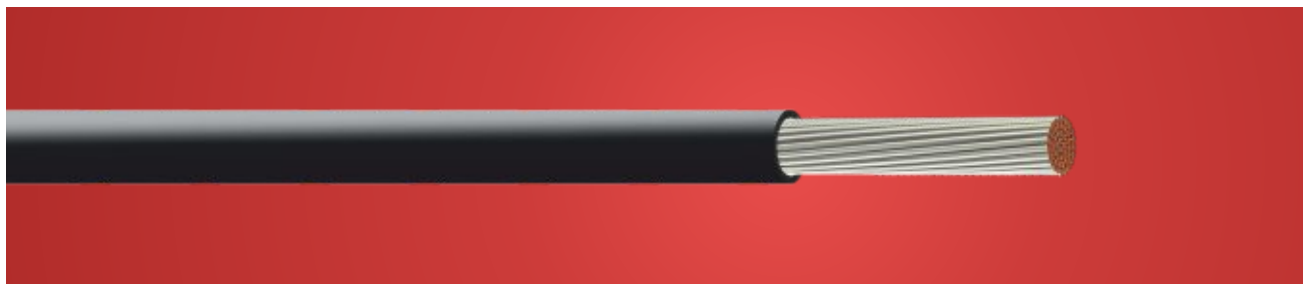
- Outstanding Flame retardant
- Thin walled with excellent flexibility
- Smooth and abrasion resistant surface
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked
- Resistance to corona effect

| No of Cores X Nominal Cross Section Area Of Core (mm <sup>2</sup> ) | Conductor Construction No of strands X strand Dia. (No's) X (mm) | Outer Dia. (mm) | Core Dia. (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Cable weight Approx. (Kg/Km) |
|---------------------------------------------------------------------|------------------------------------------------------------------|-----------------|----------------|------------------------------------------|------------------------------|
| 2 X 0.5                                                             | 19 X 0.18                                                        | 1.3             | 4.10           | 40.1                                     | 23                           |
| 5 X 0.5                                                             | 19 X 0.18                                                        | 1.3             | 5.10           | 40.1                                     | 42                           |
| 9 X 0.5                                                             | 19 X 0.18                                                        | 1.3             | 6.80           | 40.1                                     | 64                           |
| 12 X 0.5                                                            | 19 X 0.18                                                        | 1.3             | 7.00           | 40.1                                     | 86                           |
| 16 X 0.5                                                            | 19 X 0.18                                                        | 1.3             | 8.00           | 40.1                                     | 112                          |
| 25 X 0.5                                                            | 19 X 0.18                                                        | 1.3             | 9.60           | 40.1                                     | 165                          |
| 30 X 0.5                                                            | 19 X 0.18                                                        | 1.3             | 10.30          | 40.1                                     | 199                          |
| 2 X 2 X 0.5                                                         | 19 X 0.18                                                        | 1.3             | 6.00           | 40.1                                     | 49                           |
| 2 X 0.75                                                            | 19 X 0.23                                                        | 1.52            | 4.50           | 26.7                                     | 31                           |
| 4 X 0.75                                                            | 19 X 0.23                                                        | 1.52            | 5.10           | 26.7                                     | 48                           |
| 9 X 0.75                                                            | 19 X 0.23                                                        | 1.52            | 7.80           | 26.7                                     | 103                          |
| 14 X 0.75                                                           | 19 X 0.23                                                        | 1.52            | 8.60           | 26.7                                     | 136                          |
| 27 X 0.75                                                           | 19 X 0.23                                                        | 1.52            | 11.50          | 26.7                                     | 262                          |
| 36 X 0.75                                                           | 19 X 0.23                                                        | 1.52            | 13.50          | 26.7                                     | 349                          |
| 3 X 1                                                               | 19 X 0.26                                                        | 1.97            | 15.10          | 20.0                                     | 46                           |
| 6 X 1                                                               | 19 X 0.26                                                        | 1.97            | 6.70           | 20.0                                     | 85                           |
| 14 X 1                                                              | 19 X 0.26                                                        | 1.97            | 9.20           | 20.0                                     | 169                          |
| 20 X 1                                                              | 19 X 0.26                                                        | 1.97            | 11.40          | 20.0                                     | 248                          |
| 50 X 1                                                              | 19 X 0.26                                                        | 1.97            | 17.00          | 20.0                                     | 602                          |

## SINGLE CORE HIGH CONDUCTIVITY COPPER CONDUCTOR HOFR RUBBER COMPOUND SHEATHED WELDING CABLE

As per IS 9857, 90°C

**Svarn Single Core High Conductivity Copper Conductor HOFR Rubber Compound Sheathed Welding Cables** are used for transmission of high currents from the electric welding machine to the welding tool. Assembly lines and conveyor systems, in machine tool and motor car manufacturing, ship building. Manually and automatically operated line and spot welding machines



### CABLE STRUCTURE

- Conductor : Plain or tinned annealed high conductivity class 6 copper wires complying with IS 8130 : 1984
- Separator : Dry paper, polyester tape
- Sheath: General service normal duty elastomeric compound Type SE1/ HOFR normal duty elastomeric compound Type SE3 Conforming to the requirement of IS 6380:1984
- Color : Black

### TECHNICAL DATA

- Temperature Range : 900C
- Voltage for Testing : 1000 V AC
- Bending Radius(Minimum) : 6x Overall dia

### FEATURES

- Flexibility under rough conditions
- Highly Resistant to effects of cold, heat and fire
- Excellent Flame Retardant Property limited to HOFR type SE3 Sheathed Cable

| Nominal conductor area (mm <sup>2</sup> ) | Maximum strand Dia. (mm) | Thickness of insulation (mm) | Approx. overall Dia. (mm) | Approx. Weight of cable (kg/km) | Max. Conductor Resistance at 20°C (Ω/km) |             |
|-------------------------------------------|--------------------------|------------------------------|---------------------------|---------------------------------|------------------------------------------|-------------|
|                                           |                          |                              |                           |                                 | Plain wire                               | Tinned wire |
| 16                                        | 0.21                     | 2.0                          | 9.5                       | 9.5                             | 1.21                                     | 1.24        |
| 25                                        | 0.21                     | 2.0                          | 10.8                      | 10.8                            | 0.780                                    | 0.795       |
| 35                                        | 0.21                     | 2.0                          | 12.0                      | 12.0                            | 0.554                                    | 0.565       |
| 50                                        | 0.31                     | 2.2                          | 14.0                      | 14.0                            | 0.386                                    | 0.393       |
| 70                                        | 0.31                     | 2.4                          | 16.1                      | 16.1                            | 0.272                                    | 0.277       |
| 95                                        | 0.31                     | 2.6                          | 18.3                      | 18.3                            | 0.206                                    | 0.210       |

## MULTI CORE - UIC CABLES THIN WALLED FLEXIBLE EBXL COACHING STOCK CABLE

### 300/300V Grade

**Svarn Multi Core - UIC Cables Thin Walled Flexible EBXL Coaching Stock Cables** are used for passenger coaches for AC/DC EMU, BG, AC EMU & MEMU coaching stock.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Flexible copper conductor, class 5
- Insulation : EBXL- EPDM 120°C
- Brading : ATC
- Colored Insulation : White numbered cores. Insulation data-bus-White, Black
- Outer sheath : Electron Beam Cross Linked Polyolefin
- Black Color

#### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 300/300V
- Short Circuit Temperature : 280°C
- Specification :EDTS 132 Rev-C Ds-5)
- Impedance :  $120 \pm 12 \Omega/\text{km}$
- Test Voltage : 2.0 kV
- Min bending Radius
- (i) fixed : 4 x cable O.D
- (ii) flexing : 5 x cable O.D

#### FEATURES

- Limited fire hazard type
- Minimum flame spread
- Low smoke emission
- Limited toxic fume emission
- Resistant to mineral oil, diesel, etc

| No. of core X<br>Nominal Cross section Area<br>(No's X sqmm)                                | No. of wire X Single Wire Dia.(max)<br>(No's X mm)         | Cable outer<br>Diameter (mm) | Max. Conductor<br>Resistance at<br>20°C ( $\Omega/\text{km}$ ) | Cable weight<br>approx. (kg/km) |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------|----------------------------------------------------------------|---------------------------------|
| 4 Quad. 4 x 1mm <sup>2</sup> + 1Pair<br>2 x 0.75mm <sup>2</sup> (data bus)<br>18 core cable | 1 mm : 19 X 0.25 mm<br>0.75 mm <sup>2</sup> : 19 X 0.22 mm | 17.5±0.5                     | 1mm <sup>2</sup> : 22.6<br>0.75 mm <sup>2</sup> : 28.7         | 477.0                           |
| 5 Quad. 4 x 1mm <sup>2</sup> + 1Pair<br>2 X 0.75mm <sup>2</sup> (data bus)<br>22 core cable | 1mm : 19 X 0.25 mm<br>0.75 mm <sup>2</sup> : 19 X 0.22 mm  | 18.3±0.5                     | 1 mm <sup>2</sup> : 22.6<br>0.75 mm <sup>2</sup> : 28.7        | 540.0                           |

## MULTI CORE SCREENED THIN WALLED FLEXIBLE EBXL COACHING STOCK CABLE

### 600V Grade

**Svarn Multi Core Screened Thin Walled Flexible EBXL Coaching Stock Cables** are used for Passenger coaches for AC/DC EMU, BG, AC EMU & MEMU coaching stock.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Flexible copper conductor, class 5
- Insulation : EBXL- EPDM 120°C
- Brading : ATC
- Outer sheath : Electron Beam Cross Linked Polyolefin. Black Color

#### TECHNICAL DATA

- Temp. Range : -40°C to +120°C
- Operating Temp :-40°C to +120°C
- Rated Voltage : 600V
- Short Circuit Temperature : 280°C
- Specification : EDTS 132 Rev-C Ds-5)
- Impedance :  $120 \pm 12 \Omega/\text{km}$
- Test Voltage : 1.5kV for 5 mins
- Bending radius : 3D for cables for fixed installation 5D for cables for flexible installation
- Specification : EDTS 132 & Rev-(DS-4)

#### FEATURES

- Limited fire hazard type
- Minimum flame spread
- Low smoke emission
- Limited toxic fume emission
- Resistant to mineral oil, diesel, etc

| No of Cores X Nominal Cross Section Area Of Core (mm <sup>2</sup> ) | No of wires X Single Wire Dia. (max) (No's / mm) | Cable Outer Dia. (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Cable weight Approx. (Kg/Km) |
|---------------------------------------------------------------------|--------------------------------------------------|-----------------------|------------------------------------------|------------------------------|
| 2C x 0.5                                                            | 19 x 0.18                                        | 4.3 ± 0.30            | 40.1                                     | 34                           |
| 2C x 1.0                                                            | 19 x 0.25                                        | 5.0 ± 0.30            | 20.0                                     | 50                           |
| 2C x 1.5                                                            | 37 x 0.22                                        | 5.8 ± 0.30            | 13.7                                     | 70                           |
| 3C x 0.5                                                            | 19 x 0.18                                        | 4.5 ± 0.30            | 40.1                                     | 40                           |
| 3C x 1.0                                                            | 19 x 0.25                                        | 5.5 ± 0.30            | 20.0                                     | 60                           |
| 3C x 1.5                                                            | 37 x 0.22                                        | 6.1 ± 0.30            | 13.7                                     | 81                           |
| 4C x 0.5                                                            | 19 x 0.18                                        | 4.8 ± 0.30            | 40.1                                     | 47                           |
| 4C x 1.0                                                            | 19 x 0.25                                        | 5.8 ± 0.30            | 20.0                                     | 72                           |
| 4C x 1.5                                                            | 37 x 0.22                                        | 6.7 ± 0.30            | 13.7                                     | 100                          |

## MULTI CORE UNSCREENED THIN WALLED FLEXIBLE EBXL COACHING STOCK CABLE

### 600/1000V Grade

**Svarn Multi Core Unscreened Thin Walled Flexible EBXL Coaching Stock Cables** are used for passenger coaches for AC/DC EMU, BG, AC EMU & MEMU coaching stock.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Flexible Copper Conductor, Class 5
- Insulation : EBXL - EPDM 120°C
- Outer sheath : Electron Beam Cross Linked Polyolefin Black color

#### TECHNICAL DATA

- Operating temp : -40°C to +120°C
- Rated voltage : 600/1000V
- Short circuit temperature : +280°C
- Test voltage : 1.5kV for 5 mins
- Bending radius : (i) 4D for cables for fixed installation(ii) 5D for cables for flexible installation
- Specification : EDTS 132 Rev-C (DS-3)

#### FEATURES

- Limited fire hazard type
- Minimum flame spread
- Low smoke emission
- Limited toxic fume emission
- Resistant to mineral oil, diesel, etc.

| No of Cores X Nominal Cross Section Area Of Core (mm <sup>2</sup> ) | No of wires X Single Wire Dia. (max) (No's / mm) | Cable Outer Dia. (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Cable weight Approx. (Kg/Km) |
|---------------------------------------------------------------------|--------------------------------------------------|-----------------------|------------------------------------------|------------------------------|
| 2C x 0.50                                                           | 19 x 0.18                                        | 6.2 ± 0.30            | 40.1                                     | 51                           |
| 2C x 0.75                                                           | 24 x 0.20                                        | 6.6 ± 0.30            | 26.7                                     | 67                           |
| 2C x 1.0                                                            | 32 x 0.20                                        | 7.5 ± 0.30            | 20.0                                     | 77                           |
| 2C x 1.5                                                            | 30 x 0.25                                        | 7.8 ± 0.30            | 13.7                                     | 89                           |
| 3C x 0.50                                                           | 19 x 0.18                                        | 6.8 ± 0.30            | 40.1                                     | 59                           |
| 3C x 0.75                                                           | 24 x 0.20                                        | 7.0 ± 0.30            | 26.7                                     | 71                           |
| 3C x 1.0                                                            | 32 x 0.20                                        | 7.9 ± 0.30            | 20.0                                     | 91                           |
| 3C x 1.5                                                            | 30 x 0.25                                        | 8.3 ± 0.30            | 13.7                                     | 109                          |
| 4C x 0.50                                                           | 19 x 0.18                                        | 7.4 ± 0.30            | 40.1                                     | 76                           |
| 4C x 0.75                                                           | 24 x 0.20                                        | 7.7 ± 0.30            | 26.7                                     | 88                           |
| 4C x 1.0                                                            | 32 x 0.20                                        | 8.8 ± 0.30            | 20.0                                     | 114                          |
| 4C x 1.5                                                            | 30 x 0.25                                        | 9.1 ± 0.30            | 13.7                                     | 135                          |

## MULTI CORE UNSCREENED THIN WALLED FLEXIBLE EBXL COACHING STOCK CABLE

### 600/1000V Grade

**Svarn Multi Core Unscreened Thin Walled Flexible EBXL Coaching Stock Cables** are used for Passenger coaches for AC/DC EMU, BG, AC EMU & MEMU coaching stock.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Flexible Copper Conductor, Class 5
- Insulation : Electron Beam Cross Linked Polyolefin rated 120°C, Single Layer
- Insulation Color : White insulation with number printing
- Outer sheath : Electron Beam Cross Linked Polyolefin. Black Color

#### TECHNICAL DATA

- Temp. Range : -40°C to +120°C
- Operating Temp :-40°C to +120°C
- Rated Voltage : 600V
- Short Circuit Temperature : 280°C
- Specification : EDTS 132 Rev-C Ds-5)
- Impedance : 120± 12Ω/km
- Test Voltage : 1.5kV for 5 mins
- Bending radius : 3D for cables for fixed installation 5D for cables for flexible installation
- Specification : EDTS 132 & Rev-(DS-4)

#### FEATURES

- Limited fire hazard type
- Minimum flame spread
- Low smoke emission
- Limited toxic fume emission
- Resistant to mineral oil, diesel, etc

| No of Cores X Nominal Cross Section Area Of Core (mm <sup>2</sup> ) | No of wires X Single Wire Dia. (max) (No's / mm) | Cable Outer Dia. (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Cable weight Approx. (Kg/Km) |
|---------------------------------------------------------------------|--------------------------------------------------|-----------------------|------------------------------------------|------------------------------|
| 12C x 1.5                                                           | 30 x 0.25                                        | 14.4 ± 0.4            | 13.7                                     | 336                          |
| 16C x 1.5                                                           | 30 x 0.25                                        | 16.3 ± 0.5            | 13.7                                     | 470                          |
| 18C x 1.5                                                           | 30 x 0.25                                        | 17.5 ± 0.5            | 13.7                                     | 520                          |
| 25C x 1.5                                                           | 30 x 0.25                                        | 20.9 ± 0.5            | 13.7                                     | 690                          |
| 4C x 2.5                                                            | 50 x 0.25                                        | 11.3 ± 0.4            | 8.21                                     | 222                          |
| 12C x 2.5                                                           | 50 x 0.25                                        | 18.7 ± 0.5            | 8.21                                     | 570                          |
| 12C x 4                                                             | 56 x 0.3                                         | 21.8 ± 0.5            | 5.09                                     | 790                          |

## MULTI CORE UNSCREENED THIN WALLED FLEXIBLE EBXL COACHING STOCK CABLE

### 600/1000V Grade

**Svarn Multi Core Unscreened Thin Walled Flexible EBXL Coaching Stock Cables** are used for passenger coaches for AC/DC EMU, BG, AC EMU & MEMU coaching stock.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Flexible Copper Conductor
- Insulation : Electron Beam Cross Linked Polyolefin rated 150°C, Dual Layer
- Insulation Color : White insulation with number printing
- Outer sheath : Electron Beam Cross Linked Polyolefin. Black Color

#### TECHNICAL DATA

- Operating temp : -40°C to +150°C
- Rated voltage : Above 750 V
- Short circuit temperature : +280°C
- Test voltage : 8 kV for 15 mins
- Bending radius : 4 X cable OD
- Insulation resistance constant (at room temp) :  $K \geq 12000 \text{ M}\Omega/\text{km}$
- Specification : ELRS / SPEC / ELC / 0019 Rev 3

#### FEATURES

- Limited fire hazard type
- Minimum flame spread
- Low smoke emission
- Limited toxic fume emission
- Resistant to mineral oil, diesel, etc.

| No. of core X Nominal Cross section Area (No's X sqmm) | No. of wire X Single Wire Dia.(max) (No's X mm)      | Cable outer Dia. (mm) | Max. Conductor Resistance at 20°C ( $\Omega/\text{km}$ ) | Minimum wall thickness of core |                  | Cable weight approx. (kg/km) |
|--------------------------------------------------------|------------------------------------------------------|-----------------------|----------------------------------------------------------|--------------------------------|------------------|------------------------------|
|                                                        |                                                      |                       |                                                          | Core Insulation (mm)           | Core Sheath (mm) |                              |
| 19C x 2.5                                              | 50 x 0.26                                            | 2.1                   | 8.21                                                     | 0.30                           | 0.40             | 863                          |
| 19C x 4.0                                              | 7 x 8 / 0.31<br>Rope Construction<br>(1 x 8 + 6 x 8) | 2.7                   | 5.09                                                     | 0.35                           | 0.45             | 1528                         |

## SINGLE CORE 1.8/3KV GRADE THIN WALLED FLEXIBLE EBXL COACHING STOCK CABLES

### 1.8/3kV Grade

**Svarn Single Core Thin Walled Flexible EBXL Coaching Stock Cables** are used for Passenger coaches for AC/DC EMU, BG, AC EMU & MEMU.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Flexible Copper Conductor class-5
- Insulation : EBXL - EPDM (Dual layer)
- Outer sheath : Electron Beam Cross Linked Polyolefin. Black Color

#### TECHNICAL DATA

- Operating temperature : -40°C to +120°C
- Rated voltage : 1.8/3KV
- Short circuit temperature : +280°C
- Test voltage : 6 kV for 15 mins

#### FEATURES

- Limited fire hazard type
- Minimum flame spread
- Low smoke emission
- Limited toxic fume emission
- Resistant to mineral oil, diesel, etc.

| No of Cores X Nominal Cross Section Area Of Core (mm <sup>2</sup> ) | No of wires X Single Wire Dia. (max) (No's / mm) | Cable Outer Dia. (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Cable weight Approx. (Kg/Km) |
|---------------------------------------------------------------------|--------------------------------------------------|-----------------------|------------------------------------------|------------------------------|
| 1C x 1.5                                                            | 30 x 0.26                                        | 3.20 ± 0.10           | 13.7                                     | 20                           |
| 1C x 2.5                                                            | 50 x 0.26                                        | 3.70 ± 0.15           | 8.21                                     | 30                           |
| 1C x 4                                                              | 56 x 0.31                                        | 4.50 ± 0.15           | 5.09                                     | 50                           |
| 1C x 6                                                              | 84 x 0.31                                        | 5.10 ± 0.15           | 3.39                                     | 70                           |
| 1C x 10                                                             | 80 x 0.41                                        | 6.30 ± 0.20           | 1.95                                     | 120                          |
| 1C x 16                                                             | 126 x 0.41                                       | 8.30 ± 0.20           | 1.24                                     | 190                          |
| 1C x 25                                                             | 196 x 0.41                                       | 10.2 ± 0.30           | 0.795                                    | 280                          |
| 1C x 35                                                             | 266 x 0.41                                       | 11.7 ± 0.30           | 0.565                                    | 390                          |
| 1C x 50                                                             | 385 x 0.41                                       | 13.6 ± 0.30           | 0.393                                    | 550                          |
| 1C x 70                                                             | 348 x 0.51                                       | 15.6 ± 0.30           | 0.277                                    | 740                          |
| 1C x 95                                                             | 468 x 0.51                                       | 17.3 ± 0.30           | 0.210                                    | 960                          |
| 1C x 120                                                            | 589 x 0.51                                       | 19.6 ± 0.30           | 0.164                                    | 1200                         |
| 1C x 150                                                            | 741 x 0.51                                       | 21.9 ± 0.30           | 0.132                                    | 1550                         |
| 1C x 185                                                            | 912 x 0.51                                       | 23.8 ± 0.30           | 0.108                                    | 1907                         |
| 1C x 240                                                            | 1184 x 0.51                                      | 26.9 ± 0.30           | 0.0817                                   | 2449                         |
| 1C x 300                                                            | 1480 x 0.51                                      | 29.7 ± 0.30           | 0.0654                                   | 3026                         |

## SINGLE CORE THIN WALLED FLEXIBLE EBXL COACHING STOCK CABLE

### 600/1000V Grade

**Svarn Single Core Thin Walled Flexible EBXL Coaching Stock Cables** are used for passenger coaches for AC/DC EMU, BG, AC EMU & MEMU coaching stock.



#### CABLE STRUCTURE

- Conductor : Annealed Tinned Flexible Copper Conductor class-5 Unilay Construction upto 6 sq.mm
- Insulation : Electron Beam Cross-linked Grey Color

#### TECHNICAL DATA

- Operating temp : -40°C to +120°C
- Rated voltage : 600/1000V
- Short circuit temperature : +280°C
- Test voltage : 3 kV for 5 mins
- Bending radius : (i) 3D for cables dia. <10mm (ii) 5D for cables dia. >10mm
- Specification : EDTS 132 Rev-C (DS-2)

#### FEATURES

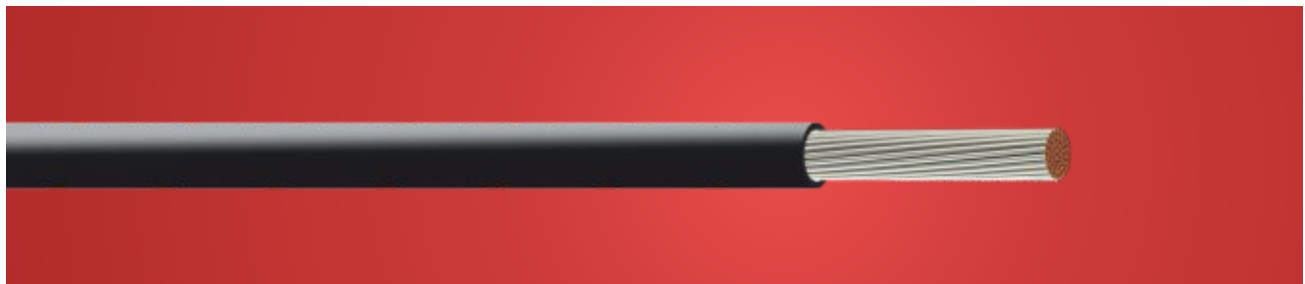
- Limited fire hazard type
- Minimum flame spread
- Low smoke emission
- Limited toxic fume emission
- Resistant to mineral oil, diesel, etc.

| No of Cores X Nominal Cross Section Area Of Core (mm <sup>2</sup> ) | No of wires X Single Wire Dia. (max) (No's / mm) | Cable Outer Dia. (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Cable weight Approx. (Kg/Km) |
|---------------------------------------------------------------------|--------------------------------------------------|-----------------------|------------------------------------------|------------------------------|
| 1C x 1.5                                                            | 30 x 0.26                                        | 2.70 ± 0.10           | 13.7                                     | 19.5                         |
| 1C x 2.5                                                            | 50 x 0.26                                        | 3.30 ± 0.10           | 8.21                                     | 30.5                         |
| 1C x 4.0                                                            | 56 x 0.31                                        | 3.95 ± 0.10           | 5.09                                     | 46.5                         |
| 1C x 6.0                                                            | 84 x 0.31                                        | 4.70 ± 0.15           | 3.39                                     | 69                           |
| 1C x 10                                                             | 80 x 0.41                                        | 5.85 ± 0.15           | 1.95                                     | 113                          |
| 1C x 16                                                             | 119 x 0.41                                       | 7.30 ± 0.15           | 1.24                                     | 166                          |
| 1C x 25                                                             | 182 x 0.41                                       | 8.90 ± 0.20           | 0.795                                    | 250                          |
| 1C x 35                                                             | 259 x 0.41                                       | 10.2 ± 0.20           | 0.565                                    | 350                          |
| 1C x 50                                                             | 378 x 0.41                                       | 11.9 ± 0.20           | 0.393                                    | 500                          |
| 1C x 70                                                             | 336 x 0.51                                       | 14.3 ± 0.25           | 0.277                                    | 690                          |
| 1C x 95                                                             | 444 x 0.51                                       | 15.9 ± 0.25           | 0.210                                    | 900                          |
| 1C x 120                                                            | 551 x 0.51                                       | 17.9 ± 0.30           | 0.164                                    | 1180                         |
| 1C x 150                                                            | 722 x 0.51                                       | 20.3 ± 0.30           | 0.132                                    | 1460                         |

## TW SINGLE CORE EBXL ROLLING STOCK

**600/1000V AC, 1500V DC, 120°C**

**Svarn TW Single Core Rolling Stock EBXL Coaching Stock Cables** are used for carriage wiring, terminal boxes, Control panels, wiring harness in inside/outside moving vehicle. For rail/Bus and other transport vehicles. For switch gears and control gear manufacturing



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5
- Insulation : LSZH - EBXL
- Black color or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : 600/1000V AC 1500V DC
- Specification : In addition to BS EN 50306 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

- Resistance to oil, fuel, ozone, damp and humid weather conditions
- Smooth and abrasion resistant surface
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked
- Resistance to corona effect
- Outstanding Flame retardant
- Thin walled with excellent flexibility

| Cross Section Area (mm <sup>2</sup> ) | Conductor Construction<br>No of strands X strand Dia.<br>(No's X mm) | Conductor Dia.<br>(mm) | Max. Conductor Resistance at 20°C (Ω/km) | Outer Dia.<br>(mm) | Cable weight Approx.<br>(Kg/Km) |
|---------------------------------------|----------------------------------------------------------------------|------------------------|------------------------------------------|--------------------|---------------------------------|
| 0.5                                   | 19 X 0.18                                                            | 0.90                   | 40.1                                     | 1.43               | 6                               |
| 0.75                                  | 19 X 0.23                                                            | 1.10                   | 26.7                                     | 1.63               | 8                               |
| 1.0                                   | 19 X 0.26                                                            | 1.25                   | 20.0                                     | 1.78               | 10                              |
| 1.5                                   | 19 X 0.31                                                            | 1.50                   | 23.7                                     | 2.17               | 15                              |
| 2.5                                   | 19 X 0.40                                                            | 1.95                   | 8.21                                     | 2.75               | 25                              |

## TW/T EMC MULTI CORE SCREENED EBXL ROLLING STOCK CABLE

600/1000V AC, 900/1500 V DC, 120°C

**Svarn TW/T EMC Multi Core Screened EBXL Rolling Stock Cables** are used for carriage wiring, terminal boxes, Control panels, wiring harness in inside/outside moving vehicle. For rail/Bus and other transport vehicles. For switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5 (Unilay\*)
- Insulation : LSZH - EBXL
- Screen : Tinned Copper Brai
- Separator : Polyester Tape
- Outer sheath : LSZH - EBXL
- Black color or as per Customer order

### TECHNICAL DATA

- Operating temp : -40°C to +120°C
- Rated Voltage :i) 600/1000V AC  
ii) 900/1500V DC
- Specification : In addition to BS EN 50306 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

- Resistance to oil, fuel, ozone, damp and humid weather conditions
- Smooth and abrasion resistant surface
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked
- Resistance to corona effect
- Outstanding Flame retardant
- Thin walled with excellent flexibility

| No of Cores X Nominal Cross Section Area Of Core (mm <sup>2</sup> ) | Conductor Construction No of strands X strand Dia. (No's) X (mm) | Core Dia. (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Outer Dia. (mm) | Cable weight Approx. (Kg/Km) |
|---------------------------------------------------------------------|------------------------------------------------------------------|----------------|------------------------------------------|-----------------|------------------------------|
| 2 X 0.5                                                             | 19 X 0.18                                                        | 1.43           | 40.1                                     | 4.8             | 31                           |
| 5 X 0.5                                                             | 19 X 0.18                                                        | 1.43           | 40.1                                     | 6.0             | 57                           |
| 9 X 0.5                                                             | 19 X 0.18                                                        | 1.43           | 40.1                                     | 7.7             | 92                           |
| 12 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 8.1             | 110                          |
| 16 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 8.7             | 139                          |
| 24 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 10.6            | 196                          |
| 36 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 12.3            | 279                          |
| 48 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 13.9            | 358                          |
| 2 X 2 X 0.5                                                         | 19 X 0.18                                                        | 1.43           | 40.1                                     | 7.1             | 88                           |
| 3 X 2 X 0.5                                                         | 19 X 0.18                                                        | 1.43           | 40.1                                     | 7.5             | 102                          |
| 4 X 2 X 0.5                                                         | 19 X 0.18                                                        | 1.43           | 40.1                                     | 8.2             | 129                          |
| 2 X 0.75                                                            | 19 X 0.23                                                        | 1.63           | 26.7                                     | 5.3             | 37                           |
| 5 X 0.75                                                            | 19 X 0.23                                                        | 1.63           | 26.7                                     | 6.7             | 76                           |
| 9 X 0.75                                                            | 19 X 0.23                                                        | 1.63           | 26.7                                     | 8.7             | 121                          |
| 12 X 0.75                                                           | 19 X 0.23                                                        | 1.63           | 26.7                                     | 9.2             | 148                          |
| 16 X 0.75                                                           | 19 X 0.23                                                        | 1.63           | 26.7                                     | 9.8             | 185                          |
| 24 X 0.75                                                           | 19 X 0.23                                                        | 1.63           | 26.7                                     | 12.1            | 266                          |
| 36 X 0.75                                                           | 19 X 0.23                                                        | 1.63           | 26.7                                     | 14.1            | 383                          |
| 2 X 2 X 0.75                                                        | 19 X 0.23                                                        | 1.63           | 26.7                                     | 8.0             | 99                           |
| 6 X 2 X 0.75                                                        | 19 X 0.23                                                        | 1.63           | 26.7                                     | 11.6            | 200                          |

## TW/T MULTI CORE EBXL ROLLING STOCK

600/1000V AC, 900/1500 V DC, 120°C

**Svarn TW/T Multi Core EBXL Coaching Stock Cables** are used for carriage wiring, terminal boxes, Control panels, wiring harness in inside/outside moving vehicle. For rail/Bus and other transport vehicles. For switch gears and control gear manufacturing.



### CABLE STRUCTURE

- Conductor : Finely Stranded Annealed Electro Tinned Copper, Class 5. (Unilay\*)
- Insulation : LSZH - EBXL
- Screen : Tinned Copper Braid
- Separator : Polyester Tape
- Outer sheath : LSZH - EBXL
- Black color or as per Customer order

### TECHNICAL DATA

- Temperature Range : -40°C to +120°C
- Rated Voltage : i) 600/1000V AC  
ii) 900/1500V DC
- Specification : In addition to BS EN 50306 spec, cables also meet fire performance tests as per BS 6853, DIN 5510-2, NF F 16-101

### FEATURES

- Resistance to oil, fuel, ozone, damp and humid weather conditions
- Smooth and abrasion resistant surface
- Easy to strip
- Low smoke density
- Soldering iron resistant
- Electron Beam Cross Linked
- Resistance to corona effect
- Outstanding Flame retardant
- Thin walled with excellent flexibility

| No of Cores X Nominal Cross Section Area Of Core (mm <sup>2</sup> ) | Conductor Construction No of strands X strand Dia. (No's) X (mm) | Core Dia. (mm) | Max. Conductor Resistance at 20°C (Ω/km) | Outer Dia. (mm) | Cable weight Approx. (Kg/Km) |
|---------------------------------------------------------------------|------------------------------------------------------------------|----------------|------------------------------------------|-----------------|------------------------------|
| 2 X 0.5                                                             | 19 X 0.18                                                        | 1.43           | 40.1                                     | 4.5             | 29                           |
| 5 X 0.5                                                             | 19 X 0.18                                                        | 1.43           | 40.1                                     | 5.4             | 51                           |
| 9 X 0.5                                                             | 19 X 0.18                                                        | 1.43           | 40.1                                     | 7.3             | 80                           |
| 12 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 7.5             | 100                          |
| 16 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 8.3             | 127                          |
| 24 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 10.2            | 179                          |
| 36 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 11.9            | 258                          |
| 48 X 0.5                                                            | 19 X 0.18                                                        | 1.43           | 40.1                                     | 13.5            | 334                          |
| 2 X 0.75                                                            | 19 X 0.23                                                        | 1.63           | 26.7                                     | 5               | 37                           |
| 5 X 0.75                                                            | 19 X 0.23                                                        | 1.63           | 26.7                                     | 6.1             | 68                           |
| 9 X 0.75                                                            | 19 X 0.23                                                        | 1.63           | 26.7                                     | 8.3             | 107                          |
| 12 X 0.75                                                           | 19 X 0.23                                                        | 1.63           | 26.7                                     | 8.6             | 136                          |
| 16 X 0.75                                                           | 19 X 0.23                                                        | 1.63           | 26.7                                     | 9.5             | 173                          |
| 24 X 0.75                                                           | 19 X 0.23                                                        | 1.63           | 26.7                                     | 11.7            | 246                          |
| 36 X 0.75                                                           | 19 X 0.23                                                        | 1.63           | 26.7                                     | 13.7            | 358                          |
| 48 X 0.75                                                           | 19 X 0.23                                                        | 1.63           | 26.7                                     | 15.5            | 463                          |
| 2 X 1                                                               | 19 X 0.26                                                        | 1.78           | 20.0                                     | 5.4             | 45                           |
| 5 X 1                                                               | 19 X 0.26                                                        | 1.78           | 20.0                                     | 6.7             | 86                           |
| 9 X 1                                                               | 19 X 0.26                                                        | 1.78           | 20.0                                     | 9.1             | 136                          |
| 12 X 1                                                              | 19 X 0.26                                                        | 1.78           | 20.0                                     | 9.4             | 172                          |



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Faridabad - 121003, Haryana

### WORKS

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Hodal Toll Plaza, Distt. Palwal-121005

#### Rajasthan

Plot No. SP5 - 249, 250, RIICO Industrial Area,  
Ghilothe, Neemrana, Alwar - 301705

#### Maharashtra

Gat No. 153/1/1, Village Ambethan, Taluka Khed  
(near Dwarka School), Pune - 410501

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