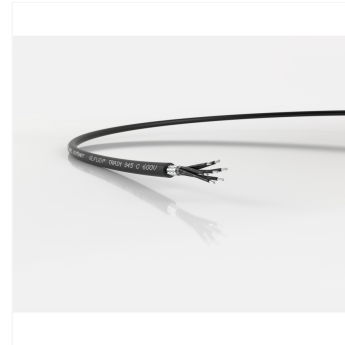
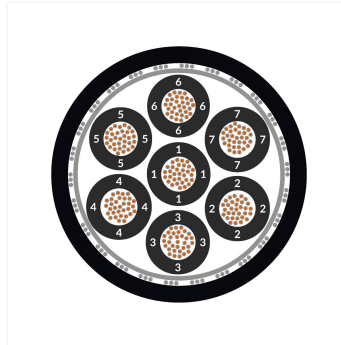
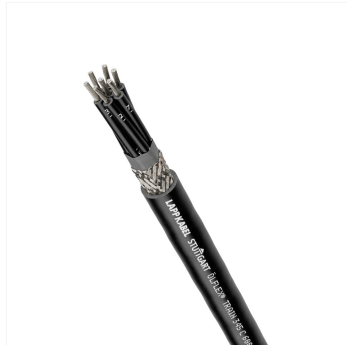


**ÖLFLEX® TRAIN 345 C 600V 3X10**
**Article No.:** 15345013

 Railway cable; 3X10; EN 50264-3-2; Type MM S;  $U_0/U$ : 0,6/1 kV; -40 - 120 °C; Electron-beam cross-linked polymer compound; Shielded

**CE**

**Details**
**Notes**

Photographs and graphics are not to scale and do not represent detailed images of the respective products.

If applicable, the prices are solid metal prices without additional charges and VAT. Sales only to business customers.

Unless specified otherwise, the product values shown are rated values at room temperature. You can receive additional values, such as tolerances, upon request if they are available and have been released for publication.

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**Remarks**

## Technical Data

**General information**

|                  |                         |
|------------------|-------------------------|
| Brand            | ÖLFLEX®                 |
| Product type     | Railway cable           |
| Copper index     | 2546.1 lb/10000 ft      |
| Industry segment | Energy<br>Rolling Stock |

**Electrical parameters**

|                                  |  |
|----------------------------------|--|
| Nominal voltage                  | $U_0/U$ : 0,6/1 kV AC rms according to IEC |
| Maximum operating voltage $U_m$  | 1,2 kV AC                                  |
| Test voltage conductor/conductor | 3.5 kV                                     |
| Test voltage conductor/shielding | 3.5 kV                                     |
| Current rating according to      | EN 50355                                   |
| Short-circuit temperature [5s]   | 200 °C                                     |

**Product design**

|  |   |
|--|---|
| Type designation for rolling stock cables          | Type MM S                                   |
| Cable dimension                                    | 3X10  |
| Nominal cross section conductor (mm <sup>2</sup> ) | 10 mm <sup>2</sup>                          |
| Conductor material                                 | Tin-plated Copper                           |
| Conductor design                                   | IEC 60228 class 5: fine-wire                |
| Including protective ground                        | No  |
| Number of cores                                    | 3   |
| Stranding type                                     | Layered Stranding                           |
| Shielded   | Yes   |
| Type of overall shielding                          | Tin-plated copper braiding                  |
| Nominal outer diameter                             | 0.598 in                                    |
| Cable form   | Round                                       |
| Core insulation base material                      | Electron-beam cross-linked polymer compound |

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|                                |   |
|--------------------------------|---|
| Basic material of outer jacket | Electron-beam cross-linked polymer compound |
| Outer jacket color             | black                                       |
| Core identification            | Numbers                                     |
| Conductor color code           | VDE 0293-1                                  |

**Product features**

|  |   |
|--|---|
| Application area                                   | Fixed Installation  |
| Minimum bending radius, stationary                 | 6 x outer diameter  |
| Minimum bending radius in inch, fixed installation | 3.591 in  |
| Temperature, fixed installation                    | -40 °C to 120 °C max. conductor temperature<br>-50 °C according to GOST   |
| Flame-retardant                                    | Yes   |
| Flame retardance according to                      | IEC 60332-1-2<br>IEC 60332-3-24<br>NF-C 32-070 (C1)<br>NF-C 32-070 (C2)<br>NF-F 16-101 (A1)<br>NF-F 16-101 (A2)<br>NF-F 16-101 (B)<br>NF-F 16-101 (C) |
| low smoke density according to                     | EN 50264-1<br>IEC 61034-2<br>NF X 10-702  |
| low toxicity of combustion gases                   | EN 50264-1<br>EN 50305<br>NF X 70-100   |
| Corrosiveness of combustion gases according to     | EN 50264-1<br>IEC 60754-2   |
| UV-resistant                                       | Yes   |
| UV-resistant according to                          | EN 50525-1 (cables with a black jacket are suitable for permanent outdoor use)  |
| Ozone-resistant                                    | Yes   |
| ozone resistant according to                       | EN 50264-3-1, method B<br>EN 50305  |
| Chemical resistant                                 | Yes   |

|                               |                           |
|-------------------------------|---------------------------|
| Acid-resistant                | Yes                       |
| Acid-resistant according to   | EN 50264-3-1              |
| Alkali resistant              | Yes                       |
| Alkali-resistant according to | EN 50264-3-1              |
| Halogenfree                   | Yes                       |
| Halogen-free according to     | IEC 60754-1<br>EN 60684-2 |
| Oil resistant                 | Yes                       |
| Oil resistance according to   | EN 50264-3-1              |
| Fuel-resistant                | Yes                       |
| Fuel-resistant according to   | EN 50264-3-1              |

#### Certifications and standards

|   |  |
|---|--|
| CE marking  | Yes  |
| EAC certified   | Not required                                       |
| EAC certification number  | Отказное письмо № 62, 04276                        |
| VDE certified   | No   |
| Resistance to flame propagation tested according to UN/ECE-R118 | No   |
| Tested for fire protection for railway vehicles                 | Yes  |
| Fire protection for railway vehicles hazard level               | EN 45545-2 HL1<br>EN 45545-2 HL2<br>EN 45545-2 HL3 |
| Standard for railway vehicles                                   | EN 50264-3-2                                       |

**ÖLFLEX® TRAIN 345 C 600V**

| Article No. | Name                             | Number of cores | Including protective ground | Nominal cross section conductor (mm <sup>2</sup> ) | Nominal outer diameter | Copper index        |
|-------------|----------------------------------|-----------------|-----------------------------|--|------------------------|---------------------|
| 15345000    | ÖLFLEX® TRAIN 345 C 600V 2X1,5   | 2               | No                          | 1.5 mm <sup>2</sup>                                | 0.323 in               | 57.35 lb/10000 ft   |
| 15345001    | ÖLFLEX® TRAIN 345 C 600V 3X1,5   | 3               | No                          | 1.5 mm <sup>2</sup>                                | 0.343 in               | 492.35 lb/10000 ft  |
| 15345002    | ÖLFLEX® TRAIN 345 C 600V 4X1,5   | 4               | No                          | 1.5 mm <sup>2</sup>                                | 0.37 in                | 610.95 lb/10000 ft  |
| 15345003    | ÖLFLEX® TRAIN 345 C 600V 2X2,5   | 2               | No                          | 2.5 mm <sup>2</sup>                                | 0.354 in               | 540.13 lb/10000 ft  |
| 15345004    | ÖLFLEX® TRAIN 345 C 600V 3X2,5   | 3               | No                          | 2.5 mm <sup>2</sup>                                | 0.374 in               | 722.1 lb/10000 ft   |
| 15345005    | ÖLFLEX® TRAIN 345 C 600V 4X2,5   | 4               | No                          | 2.5 mm <sup>2</sup>                                | 0.425 in               | 988.33 lb/10000 ft  |
| 15345006    | ÖLFLEX® TRAIN 345 C 600V 2X4     | 2               | No                          | 4 mm <sup>2</sup>                                  | 0.425 in               | 851.25 lb/10000 ft  |
| 15345007    | ÖLFLEX® TRAIN 345 C 600V 3X4     | 3               | No                          | 4 mm <sup>2</sup>                                  | 0.449 in               | 1126.63 lb/10000 ft |
| 15345008    | ÖLFLEX® TRAIN 345 C 600V 4X4     | 4               | No                          | 4 mm <sup>2</sup>                                  | 0.488 in               | 1417.11 lb/10000 ft |
| 15345009    | ÖLFLEX® TRAIN 345 C 600V 2X6     | 2               | No                          | 6 mm <sup>2</sup>                                  | 0.465 in               | 1155.19 lb/10000 ft |
| 15345010    | ÖLFLEX® TRAIN 345 C 600V 3X6     | 3               | No                          | 6 mm <sup>2</sup>                                  | 0.492 in               | 1569.19 lb/10000 ft |
| 15345011    | ÖLFLEX® TRAIN 345 C 600V 4X6     | 4               | No                          | 6 mm <sup>2</sup>                                  | 0.551 in               | 1998.38 lb/10000 ft |
| 15345012    | ÖLFLEX® TRAIN 345 C 600V 2X10    | 2               | No                          | 10 mm <sup>2</sup>                                 | 0.559 in               | 1739.24 lb/10000 ft |
| 15345013    | ÖLFLEX® TRAIN 345 C 600V 3X10    | 3               | No                          | 10 mm <sup>2</sup>                                 | 0.598 in               | 2546.1 lb/10000 ft  |
| 15345014    | ÖLFLEX® TRAIN 345 C 600V 4X10    | 4               | No                          | 10 mm <sup>2</sup>                                 | 0.654 in               | 3264.64 lb/10000 ft |
| 15345015    | ÖLFLEX® TRAIN 345 C 600V 2X16    | 2               | No                          | 16 mm <sup>2</sup>                                 | 0.646 in               | 2768.12 lb/10000 ft |
| 15345016    | ÖLFLEX® TRAIN 345 C 600V 3X16    | 3               | No                          | 16 mm <sup>2</sup>                                 | 0.701 in               | 3859.07 lb/10000 ft |
| 15345017    | ÖLFLEX® TRAIN 345 C 600V 4X16    | 4               | No                          | 16 mm <sup>2</sup>                                 | 0.764 in               | 4979.49 lb/10000 ft |
| 15345024    | ÖLFLEX® TRAIN 345 C 600V 3X50    | 3               | No                          | 50 mm <sup>2</sup>                                 | 1.173 in               | 11494.1 lb/10000 ft |
| 15345025    | ÖLFLEX® TRAIN 345 C 600V 3G1,5   | 3               | Yes                         | 1.5 mm <sup>2</sup>                                | 0.343 in               | 492.35 lb/10000 ft  |
| 15345026    | ÖLFLEX® TRAIN 345 C 600V 4G1,5   | 4               | Yes                         | 1.5 mm <sup>2</sup>                                | 0.37 in                | 336.06 lb/10000 ft  |
| 15345027    | ÖLFLEX® TRAIN 345 C 600V 3G2,5   | 3               | Yes                         | 2.5 mm <sup>2</sup>                                | 0.374 in               | 722.1 lb/10000 ft   |
| 15345028    | ÖLFLEX® TRAIN 345 C 600V 4G2,5   | 4               | Yes                         | 2.5 mm <sup>2</sup>                                | 0.425 in               | 988.33 lb/10000 ft  |
| 15345054    | ÖLFLEX® TRAIN 345 C 600V 12x0,75 | 12              | No                          | 0.75 mm <sup>2</sup>                               | 0.488 in               | 983.5 lb/10000 ft   |
| 15345060    | ÖLFLEX® TRAIN 345 C 600V 2x1     | 2               | No                          | 1 mm <sup>2</sup>                                  | 0.283 in               | 301.11 lb/10000 ft  |
| 15345061    | ÖLFLEX® TRAIN 345 C 600V 4x1     | 4               | No                          | 1 mm <sup>2</sup>                                  | 0.323 in               | 453.31 lb/10000 ft  |
| 15345062    | ÖLFLEX® TRAIN 345 C 600V 7x1     | 7               | No                          | 1 mm <sup>2</sup>                                  | 0.382 in               | 2159.57 lb/10000 ft |
| 15345063    | ÖLFLEX® TRAIN 345 C 600V 9x1     | 9               | No                          | 1 mm <sup>2</sup>                                  | 0.488 in               | 987.2 lb/10000 ft   |
| 15345064    | ÖLFLEX® TRAIN 345 C 600V 12x1    | 12              | No                          | 1 mm <sup>2</sup>                                  | 0.528 in               | 1229.23 lb/10000 ft |
| 15345065    | ÖLFLEX® TRAIN 345 C 600V 19x1    | 19              | No                          | 1 mm <sup>2</sup>                                  | 0.618 in               | 1914.92 lb/10000 ft |

| Article No. | Name                            | Number of cores | Including protective ground | Nominal cross section conductor (mm <sup>2</sup> ) | Nominal outer diameter | Copper index        |
|-------------|---------------------------------|-----------------|-----------------------------|--|------------------------|---------------------|
| 15345067    | ÖLFLEX® TRAIN 345 C 600V 32x1   | 32              | No                          | 1 mm <sup>2</sup>                                  | 0.791 in               | 2938.33 lb/10000 ft |
| 15345068    | ÖLFLEX® TRAIN 345 C 600V 37x1   | 37              | No                          | 1 mm <sup>2</sup>                                  | 0.831 in               | 3268.34 lb/10000 ft |
| 15345069    | ÖLFLEX® TRAIN 345 C 600V 40x1   | 40              | No                          | 1 mm <sup>2</sup>                                  | 0.906 in               | 3813.85 lb/10000 ft |
| 15345074    | ÖLFLEX® TRAIN 345 C 600V 24x1,5 | 24              | No                          | 1.5 mm <sup>2</sup>                                | 0.839 in               | 3265.65 lb/10000 ft |
| 15345075    | ÖLFLEX® TRAIN 345 C 600V 32x1,5 | 32              | No                          | 1.5 mm <sup>2</sup>                                | 0.945 in               | 4331.47 lb/10000 ft |
| 15345076    | ÖLFLEX® TRAIN 345 C 600V 37x1,5 | 37              | No                          | 1.5 mm <sup>2</sup>                                | 0.992 in               | 4923.74 lb/10000 ft |

V1.1