



Hook-up & equipment wires

EN 50306-2

Thin-Wall Single-Core Rolling Stock Wire

EN 50306-2 300 V ultra-thin-wall e-beam cross-linked railway hook-up wire



EN 50306-2 Thin Wall

300 V · 0.5–2.5 mm²

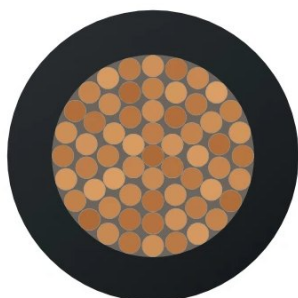
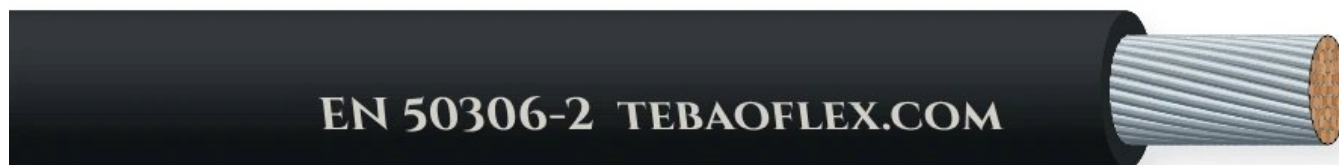
EN 45545-2 HL3

Application

Ultra-thin-wall (0.25–0.30 mm wall) 300 V railway rolling-stock hook-up wire certified to EN 50306-2 and EN 45545-2 HL3 with 19- or 37-strand tinned copper conductors (0.5–2.5 mm²) and high-modulus e-beam cross-linked EI 101–105 halogen-free insulation.

Typical uses: Train control & management systems (TCMS), Driver cab consoles & relay cubicles, Passenger information (PIS) & CCTV racks, Signalling, ATP/ERTMS & onboard electronics, High-density railway connector harnesses

Construction



Cross-section, not to scale

1	19/37-strand tinned copper conductor	EN 50306-2
2	Primary thin-wall e-beam dielectric	EN 50306-1 EI 101–105
3	Outer cut-resistant EI 101–105 skin	EN 50306-2 · EN 45545-2 HL3

Technical data

Typical values

Rated voltage U0/U	300/300 V AC (max. operating 330 V AC / 495 V DC)	AC test voltage (50 Hz)	1.5 kV AC for 5 minutes (water bath)
Spark test voltage	5.0 kV AC	Max. DC conductor resistance (20 °C)	0.5 mm ² : ≤ 40.1 Ω/km · 0.75 mm ² : ≤ 26.7 Ω/km · 1.0 mm ² : ≤ 20.0 Ω/km · 1.5 mm ² : ≤ 13.7 Ω/km · 2.5 mm ² : ≤ 8.21 Ω/km
Operating temperature range	−40 °C (Class E) or −25 °C (Class P) to +90 °C (+105 °C 20,000 h thermal class)	Short-circuit temperature	+200 °C max. (5 s)
Min. bending radius, fixed	3 × overall diameter	Nominal insulation wall	0.25 mm (0.5 & 0.75 mm ²) · 0.28 mm (1.0 & 1.5 mm ²) · 0.30 mm (2.5 mm ²)
Defined 19/37-wire stranding	Tight concentric 19- or 37-strand geometry guarantees precision crimp barrel fill and small OD	Railway fire safety	EN 45545-2 Hazard Level HL1, HL2 & HL3 (Requirement Sets R15 & R16)
Dynamic cut-through & scrape	Passes EN 50305 dynamic cut-through, notch propagation and scrape abrasion tests	Smoke, toxicity & halogen-free	EN 61034-2 low smoke · EN 60754-1/2 zero halogen · EN 50305 ITC ≤ 3
Standards	EN 50306-2 (Thin wall single-core railway rolling stock cables)	Standard packing	Heat-treated ISPM-15 timber drums or spools with sealed ends

Sizes

5 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Cores × mm ² / AWG	AWG ≈	Outer Ø min mm	Outer Ø max mm	Copper kg/km	Weight ≈ kg/km	Min. bend R mm
300 V Thin-Wall Single-Core Railway Wires (EN 50306-2, 0.5–2.5 mm ²) 5 sizes							
☐ EN 50306-2 300V 1×0.5 (19×0.18)	1×0.5	20	1.3	1.4	4	6	4
☐ EN 50306-2 300V 1×0.75 (19×0.23)	1×0.75	18	1.5	1.6	7	9	5
☐ EN 50306-2 300V 1×1.0 (19×0.26)	1×1.0	18	1.7	1.8	9	11	5
☐ EN 50306-2 300V 1×1.5 (37×0.23)	1×1.5	16	2.0	2.2	14	16	7
☐ EN 50306-2 300V 1×2.5 (37×0.30)	1×2.5	14	2.5	2.8	24	26	8

– Dimensions and weights are typical values per EN 50306-2 / EN 45545-2 HL1–HL3. Minimum fixed bending radius shown is 3 × OD.

Electrical & current ratings

5 sizes

Cross-section mm ²	AWG ≈	Max. DC resistance 20 °C, Ω/km	Single wire in air 30 °C, A	Multi-core bundle 30 °C, A
0.5	20	40.1	10	7
0.75	18	26.7	13	10
1	18	20	16	12
1.5	16	13.7	21	16
2.5	14	8.21	30	22

– Current ratings at 30 °C ambient in free air. Apply temperature and bundle grouping factors per applicable equipment standard.

Standards and approvals

- ✓ EN 50306-2 / EN 45545-2 HL1–HL3
- ✓ CE · RoHS 2 (2011/65/EU) · REACH

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/thin-wall-single-core-rolling-stock-wire



Typical values for this cable type, based on EN 50306-2 / EN 45545-2 HL1–HL3. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.