



Hook-up & equipment wires

EN 50264-3-1

Reduced-Wall Single-Core Rolling Stock Cable

EN 50264-3-1 0.6/1 kV & 1.8/3 kV reduced-wall e-beam single-core railway cable



EN 50264-3-1

0.6/1 kV & 1.8/3 kV

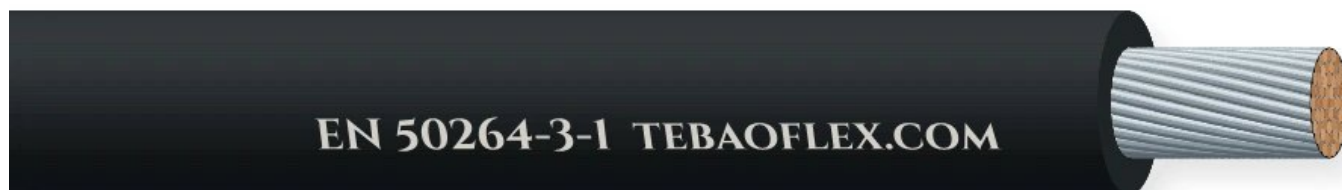
EN 45545-2 HL3 · EI 109

Application

Space- and weight-saving reduced-wall single-core railway rolling-stock power and control wire certified to EN 50264-3-1 (‘0.6/1 kV’ and ‘1.8/3 kV’, code ‘M’) with Class 5 tinned copper conductors (0.5–240 mm²) and e-beam cross-linked EI 109 LSZH insulation.

Typical uses: Traction converters & HV switchgear cubicles, High-speed train & EMU car-body wiring, Metro & commuter rail control panels, Locomotive battery & auxiliary DC buses, Railway subsystem OEM pre-wired racks

Construction



Cross-section, not to scale

1	Class 5 tinned copper conductor	EN 60228 Class 5 · EN 50264-3-1
2	Inner cross-linked dielectric layer	EN 50264-1 EI 109
3	Outer EI 109 / EM 104 skin	EN 50264-3-1 · EN 45545-2 HL3

Technical data

Typical values

Rated voltage U0/U	0.6/1 kV ('600 V' class) & 1.8/3 kV ('1800 V' class) AC	Max. DC operating voltage	0.9/1.8 kV DC (for 600 V class) · 2.7/5.4 kV DC (for 1800 V class)
AC test voltage (50 Hz)	3.5 kV AC (600 V class) · 6.5 kV AC (1800 V class) for 5 min	Spark test voltage	6 kV AC (600 V class) · 10 kV AC (1800 V class)
Operating temperature range	−40 °C to +90 °C (fixed) · −25 °C to +90 °C (flexing)	Thermal overload rating	+120 °C (20,000 h cumulative life)
Short-circuit temperature	+200 °C max. (5 s) — e-beam cross-linked polymer does not melt	Min. bending radius, fixed	3 × OD (D ≤ 10 mm) · 4 × OD (D > 10 mm)
Reduced wall thickness (600 V)	0.6 mm nominal wall for 0.5–2.5 mm ² · 0.7 mm for 4–6 mm ² · 0.9 mm for 10–16 mm ²	Cut-through & abrasion	High-modulus EI 109 e-beam cross-linked compound passes EN 50305 scrape & notch tests
Railway fire safety	EN 45545-2 Hazard Level HL1, HL2 & HL3 (Requirement Sets R15 & R16)	Smoke & halogen-free	EN 61034-2 low smoke · EN 60754-1/2 zero halogen (pH ≥ 4.3, conductivity ≤ 10 µS/mm)
Fluids & ozone	Resistant to IRM 902 mineral oil, IRM 903 diesel fuel, battery acid and ozone per EN 50264-1	Standards	EN 50264-3-1 (Reduced wall single-core rolling stock cables)
Standard packing	Heat-treated ISPM-15 timber drums or spools with sealed ends		

Sizes

22 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
0.6/1 kV (600 V) Reduced-Wall Control & Panel Wires (0.5–6 mm ²) 7 sizes							
☐ EN 50264-3-1 600V 1×0.5 M	1×0.5	20	1.9	2.1	4	9	6
☐ EN 50264-3-1 600V 1×0.75 M	1×0.75	18	2.1	2.3	7	12	7
☐ EN 50264-3-1 600V 1×1.0 M	1×1.0	18	2.3	2.5	9	15	8
☐ EN 50264-3-1 600V 1×1.5 M	1×1.5	16	2.6	2.8	14	20	8
☐ EN 50264-3-1 600V 1×2.5 M	1×2.5	14	3.0	3.3	24	31	10
☐ EN 50264-3-1 600V 1×4 M	1×4	12	3.7	4.0	38	47	12
☐ EN 50264-3-1 600V 1×6 M	1×6	10	4.2	4.6	57	68	14
0.6/1 kV (600 V) Reduced-Wall Auxiliary Power Leads (10–240 mm ²) 11 sizes							
☐ EN 50264-3-1 600V 1×10 M	1×10	8	5.4	5.9	96	114	18
☐ EN 50264-3-1 600V 1×16 M	1×16	6	6.4	7.0	153	174	21
☐ EN 50264-3-1 600V 1×25 M	1×25	4	8.0	8.7	240	268	26
☐ EN 50264-3-1 600V 1×35 M	1×35	2	9.3	10.1	336	368	30
☐ EN 50264-3-1 600V 1×50 M	1×50	1/0	10.9	11.9	480	520	36
☐ EN 50264-3-1 600V 1×70 M	1×70	2/0	12.7	13.8	672	718	41
☐ EN 50264-3-1 600V 1×95 M	1×95	3/0	14.4	15.6	912	955	47
☐ EN 50264-3-1 600V 1×120 M	1×120	4/0	16.1	17.5	1,152	1,205	52
☐ EN 50264-3-1 600V 1×150 M	1×150	300 kcmil	18.0	19.6	1,440	1,500	59
☐ EN 50264-3-1 600V 1×185 M	1×185	350 kcmil	20.1	21.8	1,776	1,845	65
☐ EN 50264-3-1 600V 1×240 M	1×240	500 kcmil	22.6	24.6	2,304	2,390	74
1.8/3 kV (1800 V) Reduced-Wall Traction & DC Link Feeders 4 sizes							
☐ EN 50264-3-1 1800V 1×2.5 M	1×2.5	14	4.7	5.1	24	49	15
☐ EN 50264-3-1 1800V 1×10 M	1×10	8	7.0	7.6	96	142	23
☐ EN 50264-3-1 1800V 1×35 M	1×35	2	10.9	11.8	336	412	35

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
☐ EN 50264-3-1 1800V 1×95 M	1×95	3/0	16.1	17.5	912	1,025	52

– Dimensions and weights are typical values per EN 50264-3-1 / EN 45545-2 HL1–HL3. Minimum fixed bending radius shown is 3 × OD.

Electrical & current ratings

18 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
4	12	5.09	41	30
6	10	3.39	53	38
10	8	1.95	75	53
16	6	1.24	100	71
25	4	0.795	135	94
35	2	0.565	169	117
50	1/0	0.393	215	148
70	2/0	0.277	270	185
95	3/0	0.21	330	225
120	4/0	0.164	385	260
150	300 kcmil	0.132	445	300
185	350 kcmil	0.108	510	340
240	500 kcmil	0.082	605	400

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

Standards and approvals

✓ EN 50264-3-1 / 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

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Email

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Web

tebaoflex.com/cables/reduced-wall-single-core-rolling-stock-cable



Typical values for this cable type, based on EN 50264-3-1 / 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.