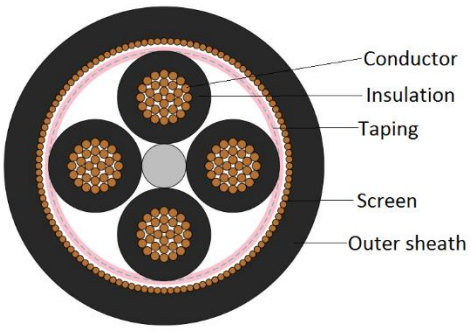
Application

ÖLFLEX® TRAIN 355 C are halogen-free, highly flame retardant cables for use in railway vehicles.
They are designed for fixed installation and for applications, where limited movement may occur. They are particularly used in areas, where human and animal life as well as valuable property are exposed to high risk of fire hazards.
ÖLFLEX® TRAIN 355 C are oil-, fuel-, acid- and alkali resistant acc. to EN 50264-3-2.
The screen is a protection against electrical interference.

Application range:
railway vehicles and buses: connecting lamps, heating equipment, switchgear, terminal boxes and power supply

Design



Norm references	EN 50264-3-2. Code designation MM MM = extra low temperature, extra oil and fuel resistant
Classification	EN 45545-2: Hazard Level HL1, HL2, HL3 NF F 16-101: Internal Category A1, A2, B External Category A1, A2, B Category C for flame propagation Category F0 for smoke
Conductor	fine wire strands of tinned copper acc. to IEC 60228 resp. EN IEC 60228, Class 5
Core isolation	electron beam cross-linked polymer compound EI 109 acc. to EN 50264-1
Core identification	acc. to EN 50264-3-2, with or without GN/YE ground conductor black cores with white numbers acc. to DIN EN 50334
Taping	plastic foil
Screen	braid of tinned copper, coverage = 85% (nominal value)
Outer sheath	electron beam cross-linked polymer compound, halogen free and flame retardant, EM 104 acc. to EN 50264-1 colour: black, similar RAL 9005

Electrical properties at 20 °C

Nominal voltage	U_0 / U: 300/500 V AC
Max. permissible operating voltage:	U_m: 600 V AC V_0: 450 V DC
Test voltage	core / core: 2 kV AC; 4.8 kV DC core / screen: 2 kV AC; 4.8 kV DC

Mechanical and thermal properties

Min. bending radius	Outer diameter ≤ 12.0 mm: 5 x outer diameter for cautions bending (one bend at end of core): 4 x outer diameter Outer diameter > 12.0 mm: 6 x outer diameter for cautions bending (one bend at end of core): 5 x outer diameter
Temperature range	-40 °C up to +90 °C max. conductor temp. up to +120 °C max. conductor temp. (20.000h) -50 °C according to GOST 33326-2015 and GOST 20.57.406-81 (method 203-1 und 205-1)
Short circuit temperature	max. +200 °C (5s)

Fire protection according to EN 50264-1 / EN 45545-2:

Classification	EN 45545-2: Hazard Level HL1, HL2, HL3
Flammability	flame retardant acc. IEC 60332-1-2 resp. EN 60332-1-2 no flame propagation acc. to: ≥ 12 mm: IEC 60332-3-24 resp. EN 60332-3-24 > 6 mm und < 12mm: IEC 60332-3-25 resp. EN 60332-3-25 ≤ 6 mm: EN 50305, clause 9.1.2
Smoke density	acc. to EN 50264-1, light transmission: min. 70% acc. to IEC 61034-2 resp. EN 61034-2
Halogen-free	acc. to IEC 60754-1; EN 60754-1; EN 50267-2-1 (chlorine and bromine) acc. to EN 60684-2 (fluorine)
Corrosivity	acc. to EN 50264-1, pH ≥ 4.3 and conductivity ≤ 10 µS/mm acc. to IEC 60754-2 resp. EN 60754-2
Toxicity	acc. to EN 50264-1: ≤ 3 EN 45545-2: ≤ 6

Fire protection ac. to NF:

Classification	NF F 16-101: Internal Category A1, A2, B External Category A1, A2, B Category C for flame propagation Category F0 for smoke
Flammability	acc. to NF C 32-070, Category C1 and C2
Smoke density	acc. to NF X 10-702
Toxicity	acc. to NF X 70-100

Material properties

Ozone resistance	acc. to EN 50264-3-2, method B acc. to EN 50305
Mineral oil resistance	acc. to EN 50264-3-2
Fuel resistance	acc. to EN 50264-3-2
Acid and alkali resistance	acc. to EN 50264-3-2
UV resistance	acc. to EN 50525-1 are cables with black sheath suitable for a permanent outdoor use.
Tests	acc. to EN 50264-3-2
EU Directives	These cables are conform to the EU-Directives 2014/35/EC (Low Voltage Directive)
Environmental information	These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS).

Art. No.	Number of cores x cross section [mm²]	Max. wire ø [mm]	Max. conductor resistance (20°C) [Ohm/km]	Conductor ø reference value [mm]	Core ø reference value [mm]	Outer ø [mm]	Fire load reference value [kJ/m]	Weight [kg/km]
15355000	2X1	0.21	20.0	1.3	2.1	**6.2** -0.2+0.6	515	71
15355001	4X1	0.21	20.0	1.3	2.1	**7.2** -0.2+0.6	729	109
15355002	7X1	0.21	20.0	1.3	2.1	**8.5** -0.3+0.6	889	152
15355003	9X1	0.21	20.0	1.3	2.1	**10.8** -0.4+0.6	1565	234
15355004	12X1	0.21	20.0	1.3	2.1	**11.3** -0.4+0.6	1426	258
15355005	19X1	0.21	20.0	1.3	2.1	**13.7** -0.4+0.6	2159	395
15355006	24X1	0.21	20.0	1.3	2.1	**15.6** -0.4+0.8	2552	482
15355007	32X1	0.21	20.0	1.3	2.1	**17.1** -0.5+0.7	3144	606
15355008	37X1	0.21	20.0	1.3	2.1	**17.9** -0.5+0.7	3475	686
15355009	40X1	0.21	20.0	1.3	2.1	**19.4** -0.6+0.8	4322	777
15355010	4X1.5	0.26	13.7	1.6	2.6	**8.4** -0.3+0.5	943	145
15355011	7X1.5	0.26	13.7	1.6	2.6	**10.2** -0.3+0.5	1191	224
15355012	9X1.5	0.26	13.7	1.6	2.6	**13.1** -0.4+0.6	2344	336
15355013	12X1.5	0.26	13.7	1.6	2.6	**13.8** -0.4+0.6	2122	371
15355014	19X1.5	0.26	13.7	1.6	2.6	**16.2** -0.5+0.7	2900	548
15355015	24X1.5	0.26	13.7	1.6	2.6	**18.9** -0.5+0.8	3807	698
15355016	32X1.5	0.26	13.7	1.6	2.6	**20.8** -0.6+0.8	4868	892
15355017	37X1.5	0.26	13.7	1.6	2.6	**21.8** -0.6+0.8	5335	994
15355018	4X2.5	0.26	8.21	2.0	3.0	**9.6** -0.3+0.6	1074	220
15355019	7X2.5	0.26	8.21	2.0	3.0	**11.6** -0.4+0.7	1398	311
15355020	9X2.5	0.26	8.21	2.0	3.0	**14.9** -0.4+0.7	2735	478
15355021	12X2.5	0.26	8.21	2.0	3.0	**15.7** -0.5+0.8	2396	530
15355022	19X2.5	0.26	8.21	2.0	3.0	**18.6** -0.5+0.8	3596	795
15355023	24X2.5	0.26	8.21	2.0	3.0	**21.3** -0.5+1.1	4539	999