

15325000	<b>DATA SHEET</b>	
Valid from: 06.11.2019	<b>ÖLFLEX® TRAIN 325 C TW-E 300V</b>	

### Application

ÖLFLEX® TRAIN 325 C TW-E are halogen-free, highly flame retardant cables with reduced insulation 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 life as well as valuable property are exposed to high risk of fire hazards.

ÖLFLEX® TRAIN 325 C TW-E are oil-, fuel-, acid- and alkali resistant acc. to EN 50306-4.

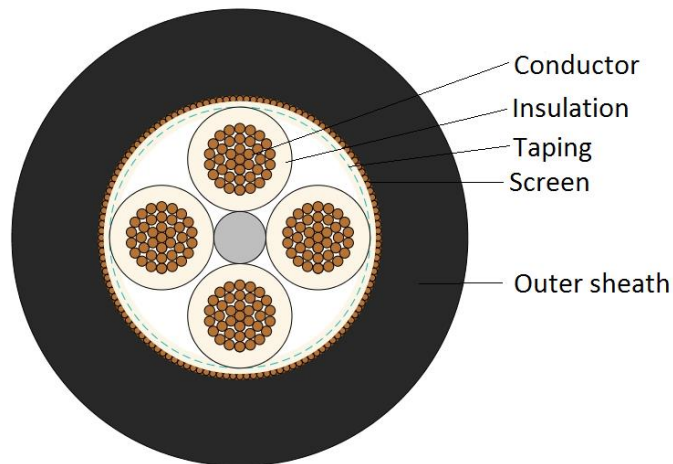
Relevant for the installation are the indications in EN 50355 and EN 50343.

The screen is a protection against electrical interference.

Application range:

railway vehicles, control and monitoring circuits as well as locking circuits and internal wiring of equipment in trains and locomotives

### Design



Design	according to EN 50306-4 class 3E
Norm references	EN 50306-4 bzw. VDE 0260-306-4. Code designation MM S 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	tinned- copper strand, 19 or 37 wires, SRC (Special Round Conductor) acc. to EN 50306-2
Core isolation	electron beam cross-linked polymer compound acc. to EN 50306-2
Core identification	white cores with black numbers acc. to DIN EN 50334 resp. VDE 0293-334
Wrapping	plastic foil
Screen	braid of tinned copper wires. coverage = 85% (nominal value)
Outer sheath	electron beam cross-linked polymer compound. halogen free and flame retardant. S2 acc. to EN 50306-1 colour: Black, similar RAL 9005

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### Electrical properties

Nominal voltage	$U_0 / U$ : 300/500 V AC according to EN 50306 $U_m$ : 550V AC according to EN 50306 $U_0 / U$ : 600/1000 V AC
Test voltage	core/core and core/screen: 3.5 kV AC or 8.4 kV DC

### Mechanical and thermal properties

Min. bending radius	fixed installation: 10 x cable diameter occasional flexing: 10 x cable diameter
Temperature range	fixed installation: -45 °C up to +125 °C max. conductor temp. (20.000h) occasional flexing: -35 °C up to +105 °C max. conductor temp.  - 50° according to GOST 33326-2015 and GOST 20.57.406-81 (method 203-1 und 205-1)
Short circuit temperature	max. +160°C (5s)

### Fire protection according to EN 50306-4 / EN 45545:

Classification	EN 45545-2: Hazard Level HL1, HL2, HL3
Flammability	acc. to EN 60332-1-2 resp. VDE 0482-332-1-2
No flame propagation acc. to	$\geq 12$ mm: EN 60332-3-24 resp. VDE 0482-332-3-24 $> 6$ mm und $< 12$ mm: EN 60332-3-25 resp. VDE 0482-332-3-25 $\leq 6$ mm: EN 50305, clause 9.1.2
Smoke density	acc. to EN 50306-1, light transmission: min. 70% acc. to IEC 61034-2; 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 $\geq 4.3$ and conductivity $\leq 10\mu\text{S}/\text{mm}$ acc. to IEC 60754-2; EN 60754-2; EN 50267-2-2
Toxicity (< 6)	acc. to EN 50305

### Fire protection according 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

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### Material properties

Ozone resistance	acc. to EN 50306, method A or B
Mineral oil resistance	acc. to EN 50306
Fuel resistance	acc. to EN 50306
Acid and alkali resistance	acc. to EN 50306
UV resistance	acc. to EN 50525-1 (VDE 0285-525-1) are cables with black sheath suitable for a permanent outdoor use.
Tests	acc. to EN 50306-2 and EN 50306-4
EU Directives	These cables are conform to the EU-Directives 2014/35/EC (Low Voltage Directive)

Art. No.	Number of cores x cross section [mm <sup>2</sup> ]	Conductor [n x mmø]	Max. conductor resistance (20°C) [Ohm/km]	Conductor ø reference value [mm]	Core ø reference value [mm]	Outer ø [mm]	Fire load reference value [kWh/m]	Weight [kg/km]
15325000	2X0.5	19x0.18	40.1	0.9	1.4	<b>6.0 ± 0.5</b>	0.17	57
15325001	3X0.5	19x0.18	40.1	0.9	1.4	<b>6.2 ± 0.5</b>	0.18	65
15325002	4X0.5	19x0.18	40.1	0.9	1.4	<b>6.6 ± 0.5</b>	0.20	75
15325003	6X0.5	19x0.18	40.1	0.9	1.4	<b>7.4 ± 0.5</b>	0.23	95
15325004	8X0.5	19x0.18	40.1	0.9	1.4	<b>8.0 ± 0.5</b>	0.27	122
15325005	2X0.75	37x0.16*	26.7	1.1	1.6	<b>6.4 ± 0.5</b>	0.18	66
15325006	3X0.75	37x0.16*	26.7	1.1	1.6	<b>6.7 ± 0.5</b>	0.20	78
15325007	4X0.75	37x0.16*	26.7	1.1	1.6	<b>7.0 ± 0.5</b>	0.21	89
15325008	6X0.75	37x0.16*	26.7	1.1	1.6	<b>8.0 ± 0.5</b>	0.25	121
15325009	8X0.75	37x0.16*	26.7	1.1	1.6	<b>8.7 ± 0.5</b>	0.31	153
15325010	2X1	37x0.18*	20.0	1.2	1.7	<b>6.7 ± 0.5</b>	0.20	76
15325011	3X1	37x0.18*	20.0	1.2	1.7	<b>7.0 ± 0.5</b>	0.21	89
15325012	4X1	37x0.18*	20.0	1.2	1.7	<b>7.4 ± 0.5</b>	0.24	106
15325013	6X1	37x0.18*	20.0	1.2	1.7	<b>8.5 ± 0.5</b>	0.28	144
15325014	8X1	37x0.18*	20.0	1.2	1.7	<b>9.2 ± 0.6</b>	0.34	180
15325015	2X1.5	37x0.23*	13.7	1.6	2.2	<b>7.6 ± 0.5</b>	0.25	99
15325016	3X1.5	37x0.23*	13.7	1.6	2.2	<b>7.9 ± 0.5</b>	0.25	121
15325017	4X1.5	37x0.23*	13.7	1.6	2.2	<b>8.5 ± 0.5</b>	0.28	145
15325018	6X1.5	37x0.23*	13.7	1.6	2.2	<b>9.8 ± 0.6</b>	0.35	196
15325019	8X1.5	37x0.23*	13.7	1.6	2.2	<b>10.8 ± 0.6</b>	0.44	250
15325020	2X2.5	37x0.30*	8.21	2.1	2.8	<b>8.8 ± 0.5</b>	0.30	142
15325021	3X2.5	37x0.30*	8.21	2.1	2.8	<b>9.2 ± 0.6</b>	0.32	173
15325022	4X2.5	37x0.30*	8.21	2.1	2.8	<b>10.0 ± 0.6</b>	0.36	211

\* These cables may be supplied in 19 strand conductors.

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