


15315000	<b>DATA SHEET</b>	
Valid from: 27.08.2020	<b>ÖLFLEX® TRAIN 315 C TW-P 300V</b>	

## Application

ÖLFLEX® TRAIN 315 C TW-P are halogen-free, highly flame retardant cables with reduced insulation wall thickness for use in railway vehicles.

They are designed for fixed and protected installation, further for applications, where limited movement may occur.

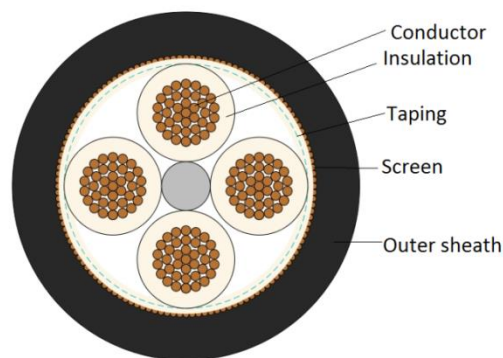
They are particularly used in areas, where human life as well as valuable property are exposed to high risk of fire hazards.

ÖLFLEX® TRAIN 315 C TW-P 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	acc. to EN 50306-4, class 3P
Norm references	EN 50306-4, 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 EN 50334
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

Creator: ALTE/PDC Released: LABU/PDC	Document: DB15315000EN Version: 06	Page 1 of 3
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15315000	<b>DATA SHEET</b>	
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### Electrical properties

Nominal voltage	$U_0 / U$ : 300/500 V AC acc. to EN 50306 $U_m$ : 550V AC acc. 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: 5 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° acc. 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	acc. to EN 45545-2: Hazard Level HL1, HL2, HL3
Flammability	acc. to IEC 60332-1-2 resp. EN 60332-1-2
No flame propagation acc. to	$> 6$ mm und $< 12$ mm: IEC 60332-3-25 resp. EN 60332-3-25 $\leq 6$ mm: EN 50305, clause 9.1.2
Smoke density	acc. to EN 50306-1. light transmission: min. 70% acc. to IEC 61034-2 resp. EN 61034-2
Halogen-free	acc. to IEC 60754-1 resp. EN 60754-1(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 resp. EN 60754-2
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

Creator: ALTE/PDC Released: LABU/PDC	Document: DB15315000EN Version: 06	Page 2 of 3
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15315000	<b>DATA SHEET</b>	
Valid from: 27.08.2020	<b>ÖLFLEX® TRAIN 315 C TW-P 300V</b>	

### 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 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-Directive 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]
15315000	2X0.5	19x0.18	40.1	0.9	1.4	4.6 ± 0.5	0.08	38
15315001	3X0.5	19x0.18	40.1	0.9	1.4	4.8 ± 0.5	0.09	45
15315002	4X0.5	19x0.18	40.1	0.9	1.4	5.2 ± 0.5	0.11	54
15315003	6X0.5	19x0.18	40.1	0.9	1.4	6.0 ± 0.5	0.13	72
15315004	8X0.5	19x0.18	40.1	0.9	1.4	6.5 ± 0.5	0.15	94
15315005	2X0.75	37x0.16*	26.7	1.1	1.6	5.0 ± 0.5	0.09	46
15315006	3X0.75	37x0.16*	26.7	1.1	1.6	5.2 ± 0.5	0.10	56
15315007	4X0.75	37x0.16*	26.7	1.1	1.6	5.7 ± 0.5	0.12	69
15315008	6X0.75	37x0.16*	26.7	1.1	1.6	6.6 ± 0.5	0.14	96
15315009	8X0.75	37x0.16*	26.7	1.1	1.6	7.1 ± 0.5	0.18	123
15315010	2X1	37x0.18*	20.0	1.2	1.7	5.2 ± 0.5	0.10	54
15315011	3X1	37x0.18*	20.0	1.2	1.7	5.5 ± 0.5	0.11	66
15315012	4X1	37x0.18*	20.0	1.2	1.7	6.0 ± 0.5	0.13	81
15315013	6X1	37x0.18*	20.0	1.2	1.7	7.1 ± 0.5	0.16	117
15315014	8X1	37x0.18*	20.0	1.2	1.7	8.2 ± 0.5	0.23	157
15315015	2X1.5	37x0.23*	13.7	1.6	2.2	6.2 ± 0.5	0.13	74
15315016	3X1.5	37x0.23*	13.7	1.6	2.2	6.5 ± 0.5	0.13	95
15315017	4X1.5	37x0.23*	13.7	1.6	2.2	7.1 ± 0.5	0.16	118
15315018	6X1.5	37x0.23*	13.7	1.6	2.2	8.8 ± 0.5	0.24	172
15315019	8X1.5	37x0.23*	13.7	1.6	2.2	9.5 ± 0.6	0.32	222
15315020	2X2.5	37x0.30*	8.21	2.1	2.8	7.8 ± 0.5	0.20	120
15315021	3X2.5	37x0.30*	8.21	2.1	2.8	8.2 ± 0.5	0.22	150
15315022	4X2.5	37x0.30*	8.21	2.1	2.8	9.0 ± 0.6	0.27	191

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

Creator: ALTE/PDC Released: LABU/PDC	Document: DB15315000EN Version: 06	Page 3 of 3
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