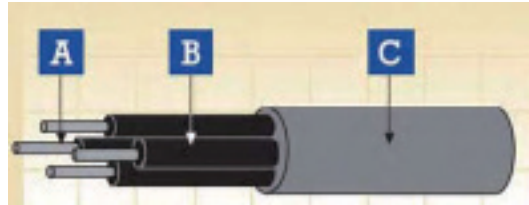


## FIREROL Thin Wall Multicore Cables with Standard Wall Sheath 300/500 V EN 50306-4 (FRL-TW-05M-SW)



A. Conductor B. Insulation C. Sheath

### Application

- Used as signal and control cable for protected installations inside and outside of rail and transport vehicles, where space and weight are an important factor.
- Used in cable harnesses, switchboards and control panels, driver desks etc.

### Construction

#### Conductor

Tinned annealed copper wires as defined in EN 50306-2

#### Insulation

LSZH special compound

#### Sheath

LSZH special compound (S2. EM101- EM104)

### Electrical & Mechanical Properties

Nominal Voltage

300/500 V

Max. Conductor Temperature

90 °C/105 °C (fixed installation)

Min. Permissible Ambient Temperature

-25 °C/-40 °C (fixed installation)

Bending Radius

Fixed installation:

3 x Overall Diameter (D<12mm);

4 x Overall Diameter (D>12mm)

Flexible installation:

5 x Overall Diameter (D<12mm);

6 x Overall Diameter (D>12mm)

### Chemical & Environmental Properties

EN 60684-2

EN 50305; EN 60811-2-1

EN 50305

No fluorine

Resistance to mineral oil & fuel oil, acid & alkali

Resistance to ozone

### Fire Performance for Rolling Stock Application

EN 50306-2

DIN 5510-2

BS 6853

NF F 16-101

Hazard levels HL1, HL2/HL3, HL4

Protection level 1/2/3/4

Interior use 1a, 1b, II; Exterior use 1a, 1b, II

F0

### Fire Performance in General

EN 50265-2-1; IEC 60332-1-2; NF C 32-070 2.1 (C2)

EN 50266-2-4 + EN 50305; IEC 60332-3-24;

NF C 32-070 2.2 (C1); VDE 0472 Teil 804

EN 50268-2; IEC 61034-2; NF C 32-073 ;

NF C 20-902; NF F 16 101; VDE 0472 Teil 816

EN 50267-2-1; IEC 60754-1; NF C 32-074;

NF C 20-454; VDE 0472 Teil 815

Vertical flame propagation for a single insulated wire or cable

Vertical flame spread of vertically mounted bunched wires or cables

Low Smoke Emission

Halogen Free

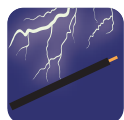
# EN 50306 Rolling Stock Cables

EN 50267-2-2/3; IEC 60754-2; NF C 32-074;  
 NF C 20-453; VDE 0472 Teil 813  
 EN 50305; NF X 70-100; NF F 63 808; TM1-04; BS6853  
 NF F 63 808; BS6853; NF F 16 101  
 FRL-TW-05M-SW 300/500 V

Low Corrosivity (Acidity & Conductivity)

Low Toxicity  
 Smoke Index

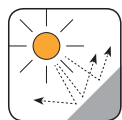
Number of Cores and Nominal Cross Section	Min. Thickness of Sheath at any Point	Overall Diameter		Weight
		Min.	Max.	
n x mm <sup>2</sup>	mm	mm	mm	kg/km
4 x 0.5	0.42	4.1	5.1	30
7 x 0.5	0.42	4.9	5.9	50
13 x 0.5	0.56	7.3	8.3	100
19 x 0.5	0.56	8.1	9.1	140
37 x 0.5	0.56	10.8	12.0	250
4 x 0.75	0.42	4.6	5.6	40
7 x 0.75	0.42	5.5	6.5	70
13 x 0.75	0.56	8.2	9.2	130
19 x 0.75	0.56	9.0	10.2	180
37 x 0.75	0.56	12.2	13.4	340
48 x 0.75	0.56	13.9	15.5	440
4 x 1.0	0.42	4.9	5.9	50
7 x 1.0	0.42	6.0	7.0	90
13 x 1.0	0.56	8.7	9.9	160
19 x 1.0	0.56	9.8	11.0	230
37 x 1.0	0.56	13.3	14.5	430
4 x 1.5	0.42	6.0	7.0	80
7 x 1.5	0.56	7.7	9.8	140
13 x 1.5	0.56	10.7	11.9	250
19 x 1.5	0.56	12.0	13.2	350
37 x 1.5	0.56	16.2	17.8	650
2 x 2.5	0.56	6.7	7.7	70
3 x 2.5	0.56	7.7	8.1	110
4 x 2.5	0.56	7.9	8.9	140



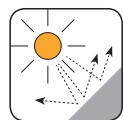
Corona Resistant



Highly Flexible



UV Resistant



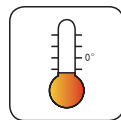
Ozone Resistant



Abrasion Retardant



Cold Resistant



Resistance To Soldering Heat



Acid & Alkaline Resistant



IRM 903 Fuel Oil Resistant



IRM 902 Mineral Oil Resistant



Fire Retardant  
 NF C32-070-2.2(C1)  
 IEC60332-3-24/EN50266-2-4



Flame Retardant  
 NF C32-070-2.1(C2)  
 IEC60332-1-2/EN50265-2-1



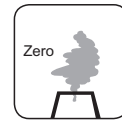
Low Toxicity  
 EN 50305; NF X70-100/NF  
 F63 808/TM1-04/BS 6853



Low Corrosivity  
 IEC60754-2/EN50267-2-2/3  
 NF C32-074/NF C20-453



Low Smoke Emission  
 IEC 61034-2 / EN 50268-2  
 NF C32-073/NF C 20-902



Zero Halogen  
 IEC 60754-1/EN 50267-2-1  
 NF C20-454