



Caledonian

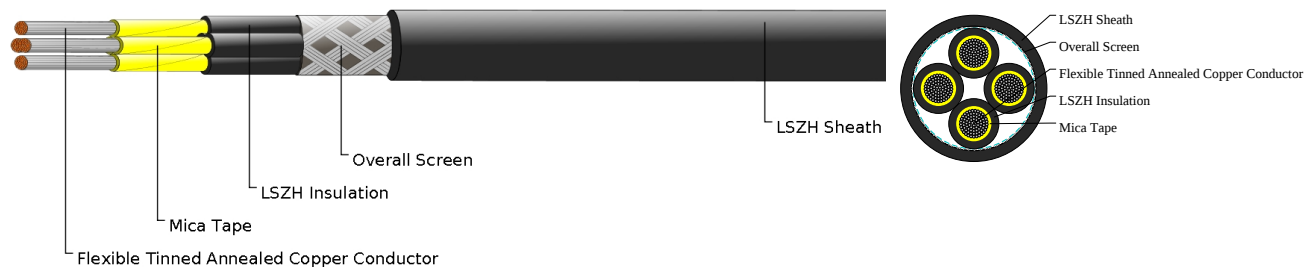
EN 50264 Rolling Stock Cables

www.caledonian-cables.com

marketing@caledonian-cables.com

FIREROL Standard Wall Multicore Overall Screened & Fire Resistant Cables

FRL-SW-1M-OS-AS+ PH15/30/60



APPLICATIONS

- Used as power and control cable for protected installations inside and outside of rail and transport vehicles, where handling and installation cost are an important factor.
- Used in control, auxiliary and main circuit wiring such as cable harnesses, switchboards and control panels, driver desks etc.

VOLTAGE RATING

0.6/1 kV

CABLE CONSTRUCTION

Conductor: Flexible tinned annealed copper wires, stranded as per HD 383 (IEC 60228) class 5

Insulation: Mica tape+LSZH elastomeric compound as defined in EN 50264-1 (EI 101 to EI 105)

Overall Screen: Tinned annealed copper wires

Outer Sheath: LSZH elastomeric compound as defined in EN 50264-1 (EM 101 to EM 104)

MECHANICAL PROPERTIES

Max. Conductor Temperature: 90 °C (fixed installation)

Min. Permissible Ambient Temperature: -25 °C/-40 °C (fixed installation)

Bending Radius: 10 x Overall Diameter

CHEMICAL AND ENVIRONMENTAL PROPERTIES

EN 60684-2	No fluorine
EN 50305; EN 60811-2-1	Resistance to mineral oil & fuel oil, acid & alkali
EN 50305	Resistance to ozone

FIRE PERFORMANCE FOR ROLLING STOCK APPLICATION

EN 50306-2	Hazard levels HL1, HL2, HL3
DIN 5510-2	Protection level 1/2/3/4
BS 6853	Interior use 1a, 1b, II; Exterior use 1a, 1b, II
NF F 16-101	F0



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EN45545-2	R15 Interior/ R16 Exterior HL1, HL2, HL3
EN 50200: 2006	PH15, PH30, PH60

FIRE PERFORMANCE IN GENERAL

EN 50265-2-1; IEC 60332-1-2; NF C 32-070 2.1 (C2)	Vertical flame propagation for a single insulated wire or cable
EN 50266-2-4 + EN 50305; IEC 60332-3-24;NF C 32-070 2.2 (C1); VDE 0472 Teil 804	Vertical flame spread of vertically mounted bunched wires or cables
EN 50268-2; IEC 61034-2; NF C 32-073 ;NF C 20-902; NF F 16 101; VDE 0472 Teil 816	Low Smoke Emission
EN 50267-2-1; IEC 60754-1; NF C 32-074;NF C 20-454; VDE 0472 Teil 815	Halogen Free
EN 50267-2-2/3; IEC 60754-2; NF C 32-074;NF C 20-453; VDE 0472 Teil 813	Low Corrosivity (Acidity & Conductivity)
EN 50305; NF X 70-100; NF F 63 808; TM1-04; BS6853	Low Toxicity
NF F 63 808; BS6853; NF F 16 101	Smoke Index
EN45545-2	Requirement for fire behavior of materials & components R15/R16
IEC60331-21	The circuit integrity test under fire of cables rated 0.6/1.0kV and below
EN 50200: 2006	Resistance to fire of unprotected small cable for use in emergency circuits 5 classifications are defined: PH 15,30,60, 90 or 120mins

DIMENSION AND PARAMETERS

No. of Conductors × Cross-sectional Area	Conductor Diameter	Min. Mean Thickness of Insulation	Min. Mean Thickness of Sheath	Diameter Of Core (min.)	Diameter Of Core (max.)	Overall Diameter (min.)	Overall Diameter (max.)	Min. Wire Diameter of Screen	Approx. Weight	Max. Conductor Resistance at 20 °C	Min. Insulation Resistance (EI 105) 20°C	Min. Insulation Resistance (EI 101- EI 104) 20°C
No.×mm ²	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	MΩ × km	MΩ × km	MΩ × km
4×10	3.9	1.1	1.6	6.1	7.1	18.6	21.9	0.26	896	1.95	85	45



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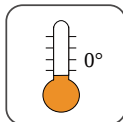
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Acid & Alkaline
Resistant



Cold Resistant



Fire Resistant
IEC 60331-21



Fire Retardant
NF C32-070-2.3(C1)
IEC60332-3-2/EN50266-2-4



Flame Retardant
NF C32-070-2.3(C2)
IEC60332-1-2/EN50265-2-1



Highly Flexible



Impact Resistant



IRM 902
Mineral Oil Resistant



IRM 903
Fuel Oil Resistant



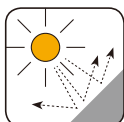
Low Corrosivity
IEC60754-2/EN50267-2-2/3
NF C32-074/NF C20-453



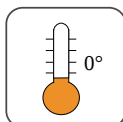
Low Smoke Emission
IEC 61034-2 / EN 50268-2
NF C32-073/NF C 20-902



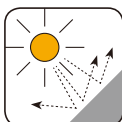
Low Toxicity
EN 50305; NF X70-100/NF
F63 808/TM1-04/BS 6853



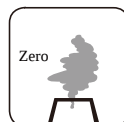
Ozone Resistant



Resistance To
Soldering Heat



UV Resistant



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