



# Caledonian

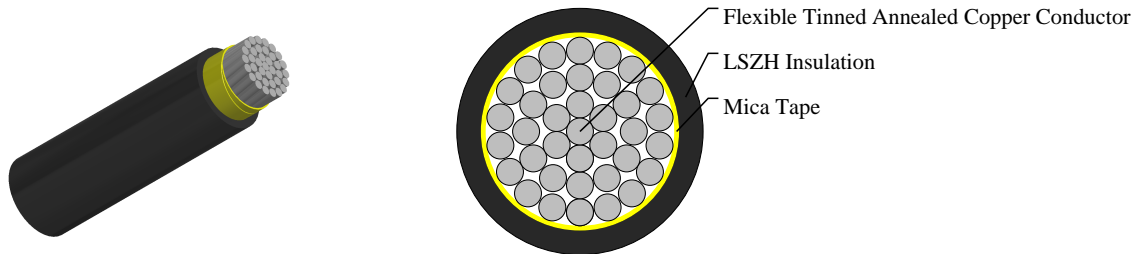
EN 50264 Rolling Stock Cables

www.caledonian-cables.com

marketing@caledonian-cables.com

## FIREROL Medium Wall Single Core Unsheathed & Fire Resistant

EN 50264-3-1 (FRL-MW-3SU-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, auxillary and main circuit wiring such as cable harnesses, switchboards and control panels, driver desks etc.

### VOLTAGE RATING

1.8/3 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 106 to EI 109)

### MECHANICAL PROPERTIES

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

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

Bending Radius

Fixed installation:

10 x Overall Diameter (D<12mm);

12 x Overall Diameter (D>12mm)

Flexible installation:

20 x Overall Diameter (D<12mm);

25 x Overall Diameter (D>12mm)

### CHEMICAL AND ENVIRONMENTAL PROPERTIE

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
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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
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
IEC60331-21	The circuit integrity test under fire of cables rated 0.6/1.0kV and below
EN45545-2	Requirement for fire behavior of materials & components R15/R16
EN50200: 2006	Resistance to fire of unprotected small cable for use in emergency circuits 5 classifications are defines: PH15, 30, 60, 90 or 120 mins.

## DIMENSION AND PARAMETERS

Nominal Cross-sectional Area	Conductor Diameter	Min. Mean Thickness of Insulation	Overall Diameter (min.)	Overall Diameter (max.)	Approx. Weight	Max. Conductor Resistance at 20 °C	Min. Insulation Resistance at 20 °C	Min. Insulation Resistance at 90 °C
mm <sup>2</sup>	mm	mm	mm	mm	kg/km	MΩ × km	MΩ × km	MΩ × km
185	17.5	2.4	21.1	24.7	2110	0.108	3.4	0.034



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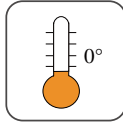
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Acid & Alkaline Resistant



Cold Resistant



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



Flame Resistant  
EN50200



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



Highly Flexible



Impact Resistant



IRM 902  
Mineral Oil Resistant



IRM 903  
Fuel Oil Resistant



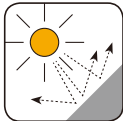
Low Corrosivity  
IEC60754-2/EN50267-2-2/3  
NF C32-074/NF C20-453



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



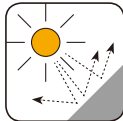
Low Toxicity  
EN 50305; NF X70-100/NF  
F63 808/TM1-04/BS 6853



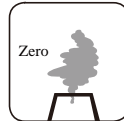
Ozone Resistant



Resistance To  
Soldering Heat



UV Resistant



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