



# Caledonian

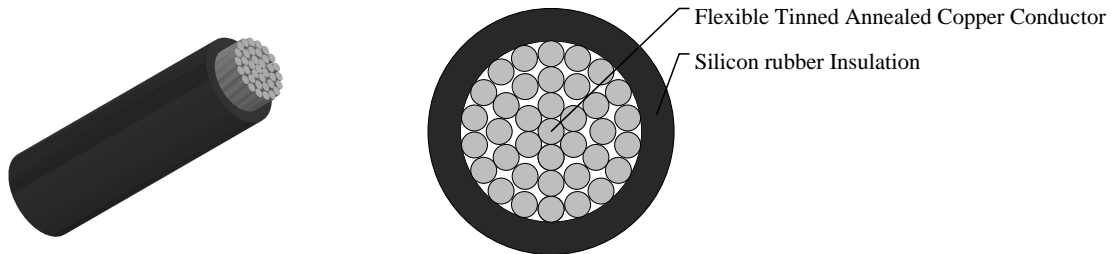
EN 50382 High Temperature Rolling Stock Cables

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## FIREROL High Temperature Single Core Unsheathed Cables

EN 50382-2 (FRL-HT-3SU)



### VOLTAGE RATING

1.8/3 kV

### CABLE CONSTRUCTION

Conductor: Flexible tinned annealed copper wires (red copper only for 150 °C core temperature) class 5 according to HD 383

Insulation: Silicon rubber according to EN 50382-1 (EI 111)

### MECHANICAL PROPERTIES

Max. Conductor Temperature: 120 °C/150 °C (fixed installation)

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

Bending Radius: 3 x Overall Diameter (D<12mm); 4 x Overall Diameter (D>12mm)

### 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
EN45545-2	R15 Interior/ R16 Exterior HL1, HL2, HL3

### 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
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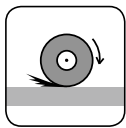
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EN 50266-2-4 + EN 50305; IEC 60332-3-24;NF C 32-070 2.2 (C1); VDE 0472 Teil 804	Vertical flame spread of vertically mounted bunched wires or cables
EN 50268-2; IEC 61034-2; NF C 32-073 ;NF C 20-902; NF F 16 101; VDE 0472 Teil 816	Low Smoke Emission
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

## DIMENSION AND PARAMETERS

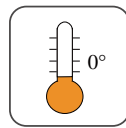
Nominal Cross-sectional Area	Conductor Diameter	Min. Mean Thickness of Insulation	Overall Diameter (min.)	Overall Diameter (max.)	Approx. Weight	Max. Conductor Resistance (Tinned Conductor) at 20 °C	Max. Conductor Resistance (Plain Conductor) at 20 °C	Min. Insulation Resistance at 20 °C	Min. Insulation Resistance at 150 °C
mm <sup>2</sup>	mm	mm	mm	mm	kg/km	Ω/km	Ω/km	MΩ × km	MΩ × km
120	14.2	2.7	18.6	21.7	1140	0.164	0.161	210	0.40



Abrasion Retardant



Acid & Alkaline Resistant



Cold 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



Highly Flexible



Impact Resistant



IRM 902  
Mineral Oil Resistant



IRM 903  
Fuel Oil Resistant



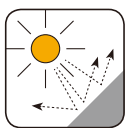
Low Corrosivity  
IEC60754-2/EN50267-2-2/3  
NF C32-074/NF C20-453



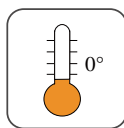
Low Smoke Emission  
IEC 61034-2 / EN 50268-2  
NF C32-073/NF C 20-902



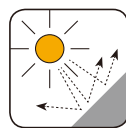
Low Toxicity  
EN 50305; NF X70-100/NF  
F63 808/TM1-04/BS 6853



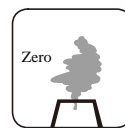
Ozone Resistant



Resistance To  
Soldering Heat



UV Resistant



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