FR3013 flexible fire rated power cable

Multicore

flame retardant | uv resistant | halogen free

Construction:
Flexible bare copper class 5 fine wire stranding, glass mica tape, cross-linked, halogen free, flame-retardant compound type X-HF-110 acc. to AS/NZS 3808, red low smoke halogen-free type HSF-110TP metre marked sheath to AS/NZS 3808.

Bending Radius:
8 x cable diameter

Nominal Voltage:
600/1000V

Temperature Range:
-40°C - 110°C

Features, Rating and Approvals:
- Flexibility for easy installation
- REACH and RoHS compliant
- Halogen free acc. to IEC 60754-1
- UV-resistant

Flame-retardant: AS/NZS 1660.5.1; IEC 60332-3-22 Cat. A; IEC 60332-1
Cable circuit integrity:
AS/NZS 1660.5.5; IEC 60331; BS 6387, Cat. C.W.Z
Wiring system circuit integrity:
AS/NZS 3013, Cat. WS52W
Smoke density: AS/NZS 1660.5.2; IEC 61034-2
Halogen acid gas content:
AS/NZS 1660.5.3, IEC 60754-1
Gases evolved during combustion:
AS/NZS 1660.5.4, IEC 60754-2

Core Colour Coding:
- Single Cores : Natural
- 2 core + earth : Red, Black, Green/Yellow
- 4 core + earth : Red, White, Blue, Black, Green/Yellow

Outer Sheath Colour:
Red

Multi Core with earth

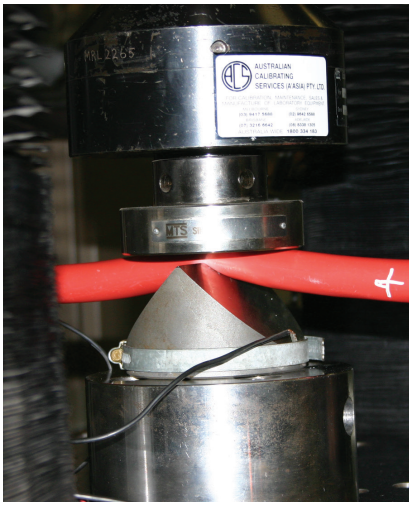
Part No.	Number of cores and nominal conductor area mm²	Earth conductor size mm²	Approx. overall Ø mm	Approx. weight kg/km
FR3G1.5R	1.5mm 2C+E	1.5mm	11.2	171
FR3G2.5R	2.5mm 2C+E	2.5mm	12.3	217
FR3G4R	4mm 2C+E	2.5mm	12.9	257
FR3G6R	6mm 2C+E	2.5mm	13.8	312
FR3G10R	10mm 2C+E	4mm	15.4	433
FR3G16R	16mm 21C+E	6mm	17.5	605
FR3G25R	25mm 2C+E	6mm	19.9	849
FR3G35R	35mm 2C+E	10mm	21.6	1098
FR3G50R	50mm 2C+E	16mm	25.6	1554
FR3G70R	70mm 2C+E	25mm	29.7	2147
FR3G95R	95mm 2C+E	25mm	32.9	2701
FR3G120R	120mm 2C+E	35mm	35.4	3362
FR3G150R	150mm 2C+E	50mm	40.5	4263
FR3G185R	185mm 2C+E	70mm	45.9	5326
FR3G240R	240mm 2C+E	95mm	50.2	6745

FR3013 flexible fire rated power cable

Multicore

Multi Core with earth

Part No.	Number of cores and nominal conductor area mm²	Earth conductor size mm²	Approx. overall Ø mm	Approx. weight kg/km
FR4G1.5R	1.5mm 3C+E	1.5mm	12.3	205
FR4G2.5R	2.5mm 3C+E	2.5mm	13.5	262
FR4G4R	4mm 3C+E	2.5mm	14.6	333
FR4G6R	6mm 3C+E	2.5mm	16	429
FR4G10R	10mm 3C+E	4mm	18.3	618
FR4G16R	16mm 3C+E	6mm	21	884
FR4G25R	25mm 3C+E	6mm	22.8	1121
FR4G35R	35mm 3C+E	10mm	24.7	1459
FR4G50R	50mm 3C+E	16mm	29.4	2063
FR4G70R	70mm 3C+E	25mm	34.2	2867
FR4G95R	95mm 3C+E	25mm	38.2	3635
FR4G120R	120mm 3C+E	35mm	41.2	4536
FR4G150R	150mm 3C+E	50mm	47	5745
FR4G185R	185mm 3C+E	70mm	53.1	7129
FR4G240R	240mm 3C+E	95mm	57.9	9065
FR4G300R	300mm 3C+E	120mm	66	11423
FR5G1.5R	1.5mm 4C+E	1.5mm	13.5	243
FR5G2.5R	2.5mm 4C+E	2.5mm	14.8	310
FR5G4R	4mm 4C+E	2.5mm	16.1	398
FR5G6R	6mm 4C+E	2.5mm	17.6	514
FR5G10R	10mm 4C+E	4mm	20.1	746
FR5G16R	16mm 4C+E	6mm	23.2	1073
FR5G25R	25mm 4C+E	6mm	25.7	1407
FR5G35R	35mm 4C+E	10mm	27.8	1836
FR5G50R	50mm 4C+E	16mm	33.4	2612
FR5G70R	70mm 4C+E	25mm	38.8	3627
FR5G95M	95mm 4C+E	25mm	43.6	4618
FR5G120R	120mm 4C+E	35mm	47.1	5786
FR5G150R	150mm 4C+E	50mm	53.4	7281
FR5G185R	185mm 4C+E	70mm	60.5	9032



FR3013 flexible fire rated power cable

Conforms to the following standards

TeleFonika fire rated cable has been tested and approved to achieve a WS52W rating and performed to ensure that such cables are fire-resistant.

AS3013 is a classification system which defines a performance criteria for a Wiring System (WS) inclusive of all elements forming part of that system i.e. cable joints, tap-offs, supports and fixings. The classification system prefix will be 'WS' followed by two numerals and a supplementary letter W.

- First numeral indicates the wiring system's ability to maintain circuit integrity to fire.
- Second numeral indicates the wiring system's degree of mechanical protection.
- Supplementary letter 'W' will denote the wiring system's capability of maintaining electrical integrity when Subjected to water spray following a fire.

Fire Test

First Numeral	Minimum time for which circuit integrity is retained (min)
X	Degree of protection does not apply
1	15
2	30
3	60
4	90
5	120

Fire with Water Spray

Supplementary letter W – Cables are subjected to fire at 1050°C for 120 minutes, then at 1050°C with water spray for a further 3 minutes.

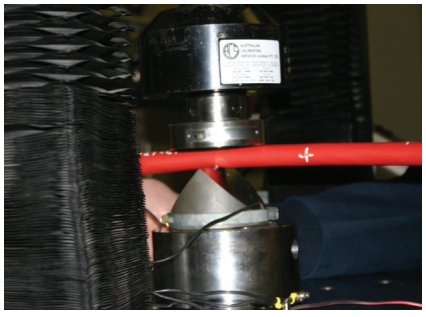
Mechanical Test

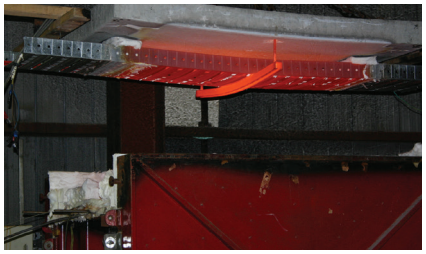
Second Numeral	Impact test(J)	Cutting test (kN)	Level of impact protection
X	-	-	Degree of protection does not apply
1	2.5	0.3	Light
2	15	1.0	Moderate
3	50	5.0	Heavy
4	500	5.0	Very heavy
5	5000	5.0	Extremely heavy

Core Colour:

Table 1

No. of cores	As per AS5000 (reduced earth)
Single	Natural
2	Red, Black or Red, White
2 + earth	Red, Black, Gn/Ye
3 (w/o earth)	Red White, Blue
3 + earth	Red, White, Blue, Gn/Ye
4 (w/o earth)	Red, White, Blue, Black
4 + earth	Red, White, Blue, Black, Gn/Ye
> 5	White with black numbering, Gn/Ye





DKSH Australia Pty. Ltd., 14-17 Dansu Court, Hallam VIC 3803, Australia, Ph 1800 010 113, Fax (03) 9554 6677

Data

Flame propagation tests

IEC 60332: Test on electrical cables under fire conditions

Part 1 : Test on a single vertical insulated wires or cable
Part 3 : Test on bunched wires and cables under fire condition

The propagation of fires along cable runs is influenced by a number of factors but in particular is relative to the total volume of combustible material in the cable run.

IEC 60332-3 details 3 test categories to test different amount of combustible material contained in a one metre sample bunched cable.

IEC 60332-3-22	-	The number of test pieces required to provide a total volume of 7 litres of non-metallic material shall be bunched on a ladder exposed to flame for 40 minutes.
IEC 60332-3-23	-	The number of test pieces required to provide a total volume of 3.5 litres of non-metallic material shall be bunched on a ladder exposed to flame for 40 minutes.
IEC 60332-3-24	-	The number of test pieces required to provide a total volume of 1.5 litres of non-metallic material shall be bunched on a ladder exposed to flame for 20 minutes.

The cable specimens are placed vertically next to each other and then exposed to the flame for a specified duration. After the burning has ceased, the charred or affected portion should not exceed a height of 2.5 meters.

Acid gas emission tests

IEC 60754: Test on gases evolved during combustion of electric cables

Part 1 : Determination of the amount of halogen acid gas
Part 2 : Determination of degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity

IEC 60754-1 specifies a method in determining the amount of halogen acid gas, other than hydrofluoric acid, evolved during the combustion of materials based on halogenated polymers and compounds containing halogenated additives taken from electric cables. This standard requires the amount of halogen acid evolved is less than 5mg/g of hydrochloric acid.

IEC 60754-2 specifies a method in determining the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity. This standard requires the weighted pH value of not less than 4.3 when related to 1 litre of water, and the weighted value of conductivity should not exceed 10μS/mm.

Smoke emission tests

IEC 61034: Measurement of smoke density of electric cables burning under defined condition

The 3 meter cube test determines the amount of smoke from electric cables during fire conditions. A one-meter length of cable is placed in a 3m2 enclosure, and exposed to a beam of light through a clear window. This light travels across the enclosure to a photocell connected to recording equipment in the window on the other end. A fire is then generated within the container and the minimum light transmission recorded. This standard requires a minimum light transmission value greater than 60% is acceptable.

Installation Guidance

It is the responsibility of the installing contractor to ensure FR cables are installed in accordance with the relevant standards and regulations for fire rated areas.