

FEATURES

- ✓ 2HR Fire Rated
- ✓ 0.6/1kV insulation rating
- ✓ 110°C continuous operation
- ✓ AS/NZS 3013 – WS52W
- ✓ AS/NZS 5000.1
- ✓ AS/ACIF S008
- ✓ RCM Certified
- ✓ Low smoke zero halogen
- ✓ Flame retardant
- ✓ Flexible class 6 conductors
- ✓ ActivFire Certified



PRODUCT DESCRIPTION

FireSense Fire Rated cables have been specifically designed for use within the Fire Alarm and Mechanical/Electrical industries.

FireSense Fire Rated Cables are constructed from the highest quality cross linked polymers available and are designed to be easy to install, strip and terminate.

FireSense Fire Rated Cables have been independently tested and approved by EXOVA/Warringtonfire to the exacting requirements of AS/NZS 3013 for both fire and mechanical cable properties. All FireSense cables are certified 2 hour fire rated. FireSense Fire Rated Cables have also been tested and approved to electrical standards AS/NZS 5000.1 by respective industry testing authorities.

It is a mandatory requirement of AS/NZS 3000:2007 Appendix H and AS/NZS1668.1 that cables be approved to AS/NZ 3013 and carry a 2HR Fire Rating.

FireSense cables are manufactured using 100% pure, annealed conductors for ease of stripping and termination while achieving the highest possible electrical performance. FireSense's highly specialised insulation and outersheath materials meet the stringent Impact and Cutting test requirements of AS/NZS 3013 yet allow for ease of stripping and cable placement on trays saving valuable installation time on site.

FireSense Single Core Cable use Class 6 flexible conductors making for a more flexible cable which is much easier to install.

It is recommended that FireSense stainless steel cable ties be used for fixing cable to tray every 1.0 metre when mounted horizontal and every 0.6 metres when mounted vertically.

When fixing to catenary wire our recommendation is as follows:

Cable bunch $\geq$ 25mm fix every 300mm.
Cable bunch is $<$ 25mm fix every 600mm.

ORDERING INFORMATION

Part Number	No. of Cores	Cross Section (mm ²)	Conductor Class	Overall Cable Diameter	Operating Temperature (°C)	AS/NZS 3013 Rating
FR-35-1C	1	35	Class 6	16mm	-25 to + 110	WS52W
FR-50-1C	1	50	Class 6	18mm	-25 to + 110	WS52W
FR-70-1C	1	70	Class 6	20mm	-25 to + 110	WS52W
FR-95-1C	1	95	Class 6	23mm	-25 to + 110	WS52W
FR-120-1C	1	120	Class 6	25mm	-25 to + 110	WS52W
FR-150-1C	1	150	Class 6	28mm	-25 to + 110	WS52W
FR-185-1C	1	185	Class 6	30mm	-25 to + 110	WS52W
FR-240-1C	1	240	Class 6	33mm	-25 to + 110	WS52W
FR-300-1C	1	300	Class 6	35mm	-25 to + 110	WS52W
FR-400-1C	1	400	Class 6	41mm	-25 to + 110	WS52W
FR-500-1C	1	500	Class 6	46mm	-25 to + 110	WS52W
FR-630-1C*	1	630	Class 6	50mm	-25 to + 110	WS52W

*Indent Product only.

ELECTRICAL CHARACTERISTICS

Part Number	DC Resistance (Ω / Km)	AC Resistance @ 50Hz (Ω / Km at °C) As per AS3008 Table 34/37				Current Carrying Capacity Unenclosed (Amps) As per AS3008 Table 9			
	20°C	45°C	75°	90°	110°	Spaced	Touching	Exposed	Underground Wiring Enclosure
FR-35-1C	0.554	0.609	0.674	0.707	0.750	214	172	143	151
FR-50-1C	0.386	0.424	0.470	0.493	0.523	270	217	179	188
FR-70-1C	0.272	0.300	0.332	0.348	0.369	340	273	224	229
FR-95-1C	0.206	0.227	0.252	0.264	0.280	410	239	269	268
FR-120-1C	0.161	0.178	0.197	0.207	0.219	487	390	317	316
FR-150-1C	0.129	0.144	0.159	0.166	0.176	562	450	365	357
FR-185-1C	0.106	0.119	0.131	0.137	0.145	644	516	417	404
FR-240-1C	0.0801	0.0912	0.100	0.105	0.111	775	620	499	481
FR-300-1C	0.0641	0.0745	0.0817	0.0853	0.0898	895	714	572	542
FR-400-1C	0.0486	0.0587	0.0640	0.0666	0.0699	1079	855	682	648
FR-500-1C	0.0384	0.0487	0.0527	0.0548	0.0571	1260	990	786	729
FR-630-1C*	0.0287	0.0389	0.0418	0.0432	0.0415	1493	1154	913	828

ELECTRICAL CHARACTERISTICS CONTINUED

3 Phase Voltage Drop @ 5 ⁰ Hz (mV/A.m at °C) As per AS3008 Table 46			
45°	75°	90°	110°
1.070	1.180	1.730	1.840
0.754	0.831	0.869	0.921
0.543	0.596	0.622	0.658
0.424	0.463	0.483	0.509
0.344	0.373	0.388	0.408
0.291	0.313	0.325	0.340
0.254	0.272	0.280	0.293
0.215	0.227	0.233	0.242
0.194	0.203	0.207	0.213
0.175	0.180	0.183	0.187
0.164	0.167	0.169	0.172
0.154	0.156	0.157	0.159

Permissible Thermal Short Circuit Current (kA) for 1 second @ 110°C with Insulation Max. Temperature of 250°C in accordance with AS/NZS 3008.1.1:2009: (I_{2t} = K₂S₂)

Conductor Size (mm ²)	35	50	70	95	120	150	185	240	300	400	500	630
Short Circuit Current (kA)	4.62	6.6	9.24	11.88	15.84	19.8	24.42	31.68	39.6	52.8	66	83.16

CONSTRUCTION

Conductors	Stranded Annealed Copper
Flame Barrier	Mica Tape
Insulation	Flame Retardant, Low Smoke, Zero Halogen (X-HF-110)
Sheath	Flame Retardant, Low Smoke, Zero Halogen (HFS-110-TP)
Operating Temperature	-25° to +110°C
Insulation Color	White
Sheath Color	Red

WEIGHT PER METRE

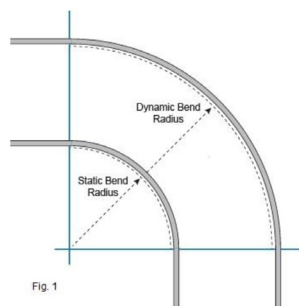
Please note: the below measurements are approximate only and do not account for the weight of the drum.

Cable	Approx weight per metre (kg)
FR-35-1C	0.460
FR-50-1C	0.640
FR-70-1C	0.830
FR-95-1C	1.115
FR-120-1C	1.336
FR-150-1C	1.798
FR-185-1C	2.308
FR-240-1C	2.857
FR-300-1C	3.104
FR-400-1C	4.800
FR-500-1C	5.066

MINIMUM BENDING RADIUS

The minimum bend radius is 10x Cable Diameter.

The measuring points are from outer sheath using the inner static bend radius, as indicated in Fig 1 to the right.



STANDARDS COMPLIANCE

Fire & Mechanical	AS/NZS 3013 - Appendix A,B,D,E
Conductors	AS/NZS 1125 - Class 6
Cable Construction	AS/NZS 5000.1
Vertical Flame Spread	AS/NZS 1660.5.1
Smoke Density	AS/NZS 1660.5.2, IEC 61034
Halogen Gas	AS/NZS 1660.5.3, IEC 60754-1&2
Acidity of Gas	AS/NZS 1660.5.4
Vertical Flame Propagation	AS/NZS 1660.5.6, IEC 60332-1, IEC 60332-3-24
ACMA Compliance	AS/ACIF S008

APPROVAL CERTIFICATES

Part Number	AS/NZS 3013			ASA-181008-EA AS/NZS 5000.1	
	Rating	Certificate No.	Issuer	Certificate No.	Issuer
FR-35-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-50-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-70-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-95-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-120-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-150-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-185-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-240-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-300-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-400-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-500-1C	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA
FR-630-1C*	WS52W	SFC27760A.04	EXOVA/Warringtonfire	ASA-181008-EA	ASA

ActivFire Listing No.	afp-2417
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RCM Responsible Supplier	E6560	Level 3	ASA-181008-EA
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CLASSIFICATION

AS3013 is a classification system which defines the performance of a Wiring System (WS). The classification system prefix is 'WS' followed by two numerals and a supplementary letter W. ie

AS/NZS 3013 Fire Rated Cable Technical Information

Classification of the fire and mechanical performance of wiring system elements:

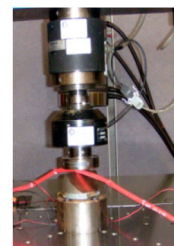
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WS	5	2	W
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1	15 minutes
2	30 minutes
3	60 minutes
4	90 minutes
5	120 minutes



	Impact Test (J)	Cutting Test (kN)	Level of Protection
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



The 'W' suffix denotes the wiring system's capability to maintaining circuit integrity when subjected to water spray immediately following a fire.

Cables are subjected to flame for 120 minutes, then water sprayed for a further 3 minutes.

