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EWFA Test Report No.	EWFA 50933200c.3 Page 1 of 4

Report Sponsor	Issue Date
TriCab (Australia) Pty Ltd 33 Prohasky Street Port Melbourne VIC 3207	16/11/2017

Fire-Resistance Test on an Electrical Wiring System

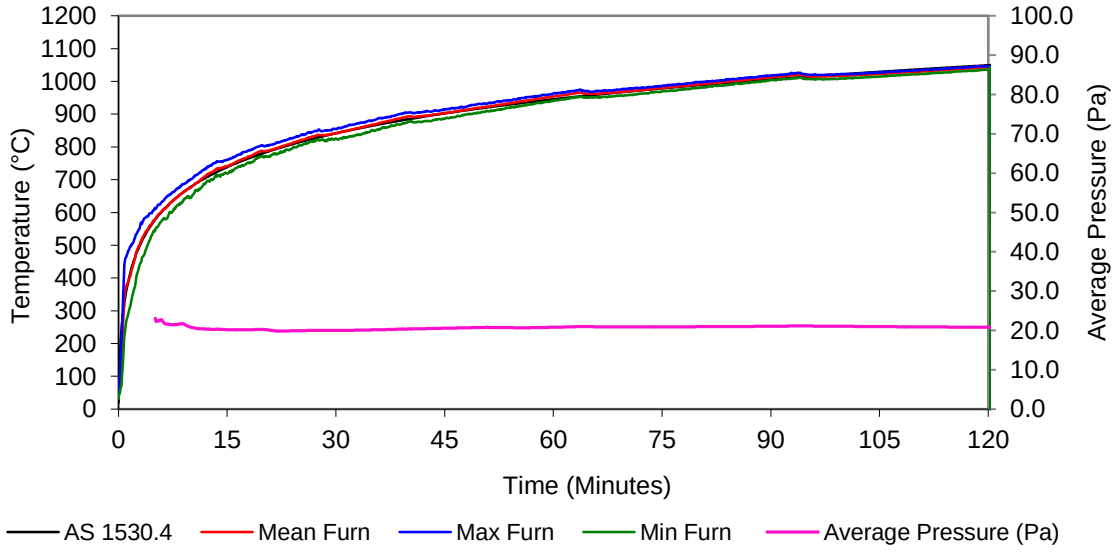
Objective

This test report confirms that the construction described below has been tested by Exova Warringtonfire Aus Pty Ltd and has achieved the stated performance when subjected to the nominated testing regime.

Test Reference	Test Date
EWFA 50933200	11/08/2017

Test Method	Supplementary Standard	Variation from Test Method
AS/NZS 3013:2005, Appendix A & B.	AS 1530.4-2014	None

Furnace Temperatures/Pressure



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Test Configuration

The cable was positioned in the cable tray as shown in Figure 1. Four cables were tested in one cable tray; the results for cable 3 are presented in this report. The cable tray was 472mm wide × 48mm high × 0.7mm thick steel, that was supported in the centre with a 42mm × 42mm × 2.5mm thick "U" steel section that had two lengths of Ø10mm threaded rod that were supported through the concrete slab on the unexposed side.

The tested cable had two bends of 90° at the bending radius as specified in Table 1 with a metallic cable tie fixing the cable to the tray at the centre between the two directional changes. The cable was otherwise fixed to the cable tray with plastic cable ties.

Table 1. Cable bending radius.

Cable Number	Cable diameter	Tested bending radius
3	10.1mm (measured)	71mm on inside of bend.

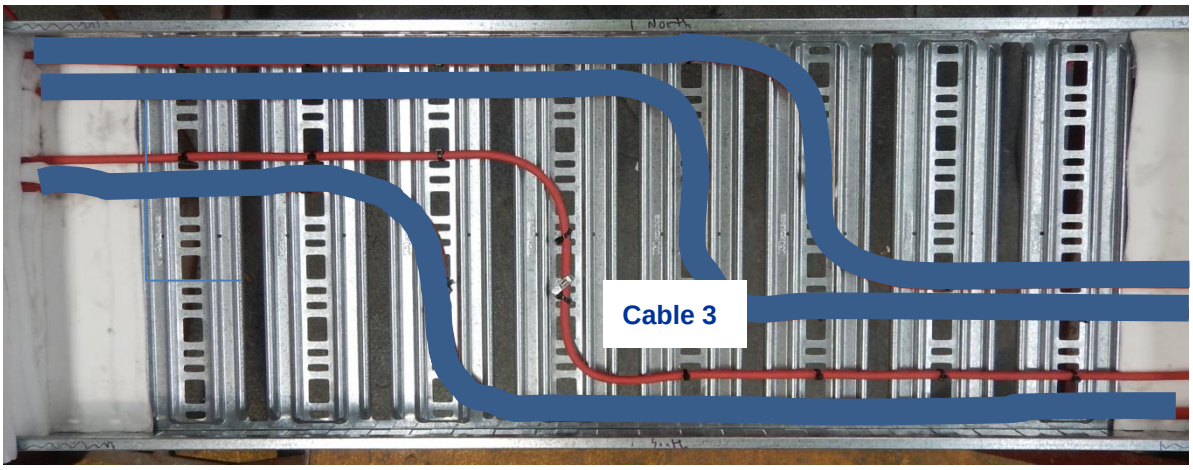

Figure 1

Product Description Cable 3

(All dimensions have been measured)
Description: WG-PLXN, 2C, 0.75mm^2, RE, TP1, 42548305

Cores:

Conductor: 2 × 0.75mm^2 cores, comprising 10/0.29mm diameter plain annealed copper wires.
Overall Conductor Diameter: 0.81mm in diameter
Mica tape: Two (2) layers of mica tape wound in opposing directions. The tapes were 5.9mm wide × 0.15mm thick with a 0.8mm and 1.4mm (outer & inner, resp.) overlaps.
Core Diameter: 3.4mm.

Sheath: HFS-110-TP sheath coloured red with a wall thickness of 2.3mm (measured average)
Cable Overall Outer Diameter: 10.1mm.

Cable Tie: The centre cable tie (Stainless Steel 7.9mm × 500mm; Tricab W02 – AMXX/7.9M500) was suppied by the test sponsor.

Table 2: Circuit Designation

Circuit Description	
Cable Number	**Circuit No.**
3	7
	8

Fire Resistance Test
Control of the furnace temperature was conducted in accordance with AS/NZS 3013:2005 and was maintained within the prescribed limits of variance from the time/temperature curve that is specified in AS 1530.4-2014 for the duration of the test period. The furnace pressure was measured at a position approximately 100mm below the soffit of the specimen mounting slab and was maintained at approximately 20 Pa above the laboratory atmospheric pressure for the duration of the fire resistance test. The electrical power cables were connected to a 240/415V 3 phase electrical circuit integrity monitoring system. This monitoring system provided each electrical circuit with 240 volts through a circuit breaker with indication light and a resistive load to induce 0.25A of current per circuit. The fire resistance test was terminated at 120 minutes. The observations of the fire resistance test are below with results shown in Table 3.

Observations		
Time		**Observation**
Min	Sec	
0	00	Start of Fire Resistance Test. Lamps 7 & 8 lit.
15	00	Electrical circuits 7 & 8 were intact and conducting the supplied current.
30	00	Electrical circuits 7 & 8 were intact and conducting the supplied current.
60	00	Electrical circuits 7 & 8 were intact and conducting the supplied current.
90	00	Electrical circuits 7 & 8 were intact and conducting the supplied current.
120	00	Electrical circuits 7 & 8 were intact and conducting the supplied current. Fire resistance test terminated.

Table 3: Summary Fire-Resistance Test

Fire Resistance Test Results			
Cable number	**Cable group[1]**	**Cable configuration**	**Circuit Integrity**
3	4	Single	120 minutes

[1] As defined in Appendix A AS/NZS 3013:2005.

Water Spray Test
The Water Spray Test was conducted in accordance with AS/NZS 3013:2005 Appendix B, using a ½" BSP male brass nozzle with a water spray cone of 90° that was positioned centrally, nominally 500mm below the soffit of the specimen mounting slab. The Water Spray Test was conducted within 10 minutes of the completion of the Fire Resistance Test for a duration of 3 minutes. The observations of the water spray test are shown in the next section and the results are shown in Table 4.

Water Spray Observations		
Time		**Observation**
Min	**Sec**	
122	25	Start of Water Spray Test. Lamps 7 & 8 lit.
125	25	Lamps 7 & 8 remain lit and conducting the supplied current. End of water spray test.

Table 4: Summary of Cable Classification in Accordance with AS/NZS 3013:2005

Wiring System Classification		
Cable	**Cable group[1]**	**Cable classification**
3	4	**WS5XW**

[1] As defined in Appendix A AS/NZS 3013:2005.

Application of Test Results

AS/NZS 3013:2005 applies only to the testing and classification of wiring system elements that are in all other respects safe and suitable for their intended use and comply with other relevant Standards.

A wiring system is then assembled using the individual elements and a fire and mechanical performance classification for the assembled system is established.

The fire protection classification of a wiring system shall not be greater than the fire protection classification of its lowest classified element.

The mechanical protection classification of an assembled wiring system shall not be less than the mechanical protection classification of its highest classified element. For example, if a cable of low classification is protected by an enclosure of higher classification the assembled system is assigned the classification of the enclosure.

The use of wiring system elements tested in accordance with AS/NZS 3013:2005 may not be necessary where parts (or components) of building construction provide satisfactory protection against fire conditions and mechanical damage.

The degree of protection against fire conditions and mechanical damage required of a wiring system or its elements is dependent on the application. Appendix F of AS/NZS 3013:2005 describes methods of protection of wiring system elements against the fire conditions and mechanical damage for which testing may not be considered necessary.

Conditions/Validity

- This report may only be reproduced in full without modifications. Extracts or abridgements of reports shall not be published without permission of Exova Warringtonfire Aus Pty Ltd.
- This test report is based on the results of a fire resistance test, as referenced in Tables 3 & 4, performed by Exova Warringtonfire Aus Pty Ltd.
- This test report does not provide an endorsement by Exova Warringtonfire Aus Pty Ltd of the performance of the actual products supplied.
- The conclusions in this test report relate to the configurations as detailed, and should not be applied to any other configuration or other cable construction or type.
- The results of these tests may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all conditions.