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Report Sponsor	Issue Date
Henry Calbes Limited 508 Yishan Road, Jinghong Bldg, Suite 6H Shanghai China 200235	13/03/14

Mechanical Impact and Mechanical Cutting Test of an Electrical Wiring System

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

Test Reference	Test Dates
EWFA 27326200	10/02/14 & 12/02/14

Test Method	Supplementary Standards	Variation from Test Method
AS/NZS 3013:2005, Appendix D & E.	Nil	Nil

Product Description Cable 1
(All dimensions have been measured)
Description: Flexible fire rated 3 × 10mm² Core + 4mm² Earth Cable
Product Code: FRM3CE10
Cores:
Conductor: 10mm² core, comprising 140/0.3 mm diameter plain annealed copper wires.
Overall Conductor Diameter: 3.9mm in diameter
Mica Tape: 3-off layers of glass tape wounded at the same direction. The tape was 0.14mm thick × 21.5mm wide with 12mm overlap.
Insulation: X-HF-110 coloured white, blue and red with a nominal wall thickness of 1mm.
Earth:
Conductor: 4mm² core, comprising 56/0.3mm diameter plain annealed copper wires
Overall Conductor Diameter: 2.5mm in diameter
Mica Tape: 3-off layers of glass tape wounded at the same direction. The tape was 0.14mm thick × 11mm wide with 3.4mm overlap.
Insulation; X-HF-110 coloured green with yellow stripe with a nominal wall thickness of 1mm
Sheath: HFS-110-TP coloured red with a nominal wall thickness of 2.0mm.
Cable Overall Outer Diameter: Nominal 21.5mm.

TESTING AUTHORITY	Exova Warringtonfire Aus Pty Ltd	
Address	PO Box 4282 DANDENONG SOUTH VIC 3164 Unit 2, 409-411 Hammond Road DANDENONG VIC 3175	
Phone / Fax	61 (0)3 9767 1000 / 61 (0)3 9767 1001	
ABN	81 050 241 524	
Email / Home Page	www.exova.com	
Authorisation	Prepared By: <i>Patrick Chan</i> Patrick Chan	Reviewed By: <i>Chad McLean</i> Chad McLean

Test Results

Table 1 Summary of Mechanical Impact Test Results

Cable 1			
Specimen Temperature (°C)	Mass (kg)	Drop Height (mm)	Second Characteristic Numeral
-25	11.1	138	2
23	11.1	138	2
110	11.1	138	2

Table 2 Summary of Mechanical Cutting Test Results

Cable 1		
Specimen Temperature (°C)	Cutting Load* (kN)	Second Characteristic Numeral
-25	15.09	5
23	14.6	5
110	6.1	5

* Minimum cutting load failure of four cutting tests at the nominated temperature. Cutting test performed at Melbourne Testing Services by a representative of Exova.

Wiring System Classification

Based on the test results shown in Table 1 and Table 2 above, a Second Characteristic Numeral Classification, for the protection against mechanical damage in accordance with AS/NZS 3013:2005, Table 3.2, for the 'Flexible fire rated 3 × 10mm² Core + 4mm² Earth Cable', over an operating temperature range of -25°C to +110°C, can be assigned as 2.

AS/NZS 3013-2005 Second Characteristic Numeral Classification : 2

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 mechanical impact and cutting testing, as referenced above, 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.