COMPLIANCE TESTING REPORT FOR AUSTRALIAN STANDARD AS/CA S008:2010 INCLUDING AMENDMENT NO 1/2014 REQUIREMENTS FOR CUSTOMER CABLING PRODUCTS

Client:	Radio Parts Group.
Address:	562 Spencer St, West Melbourne, VIC 3003, Australia
Report Number:	0910RAD_FTPC6A_S008
Date of Testing:	02 September to 03 September 2015
File Number:	RAD150807
Product Name:	FTP CAT6A SOLID CABLE
Brand Name	DOSS
Product Model No:	FTPC6A
Product Description:	DOSS FTP CAT6A SOLID CABLE
Result:	**Complies**
Compiled by:	Nina Rodoreda Testing Engineer
Approved by:	Martin Garwood Laboratory Manager
Date of Issue	10 September 2015

*** Refer to summary page for any conditions.**

SUMMARY OF COMPLIANCE WITH AUSTRALIAN STANDARD AS/CA S008:2010 (Including Amendment No 1/2014)

The CAT6A Solid Cable was supplied for AS/CA S008:2010 testing by Radio Parts Group of West Melbourne, VIC, Australia.

The Equipment Under Test (EUT) consisted of a length of CAT6A Solid Cable. The cable was 4 pair construction with pairs individually twisted. The 4 pairs were separated by an X cross slot. All 4 pairs were wrapped in a clear "MYLAR" sheet and then shielded together using "AL-FOIL" and a drain wire. The conductors were solid copper. The nominal diameter of 3 conductor pairs was 0.561 mm and 1 conductor pair was 0.58 mm. The conductors were insulated with High Density Polyethylene (HD PE). The sheath was CM Polyvinyl Chloride (CM PVC). A Rip Cord was present beneath the sheath. Please also refer to the photos in Appendix B and Product Specifications in Appendix C, at the rear of the report.

The EUT had the following sheath markings:
FTP CAT6A 4P 23AWG CONFORM TO ANSI/TIA-568-C .2 & ISO/IEC 11801 00252M

The requirements for labelling cable and cable products are specified in the ACMA Telecommunications Cabling (Customer Equipment and Customer Cabling) Notice.

The CAT6A Data cable **COMPLIES** with the tested clauses of AS/CA S008:2010.

SPECIAL CONDITIONS FOR COMPLIANCE:
The cable must comply with Clause 5.6.3 requirements for insulation and sheath materials.

This cable is compliant for indoor use only.

Possible Test Case Verdicts:
- test case does not apply to the test object .....N(.A)
- test object does meet the requirements.....P(ass)
- test object does not meet the requirements .....F(ail)
- testing was not performed.....NT
- noted.....ND

AS/CA S008:2010			
Clause	Requirement - Test	Result - Remark	Verdict
5.	REQUIREMENTS		P
5.1	GENERAL Cabling products shall be physically distinguishable from products used for distribution or connection of AC mains supply.		P
5.2	MARKINGS		P
5.2.1	Labelling Notice		ND
5.2.2	Inappropriate markings Cabling products intended solely for telecommunications use shall not bear markings indicating hazardous services.		P
5.2.3	Additional markings (excluding cable markings)		N
5.2.3.1	International protection (IP) rating		N
5.2.3.2	Multidiscipline telecommunications connecting hardware		N
5.3	UNDERGROUND CONDUIT		N
5.4	CABLE DISTRIBUTION DEVICES		N
5.5	OPTICAL FIBRE DISTRIBUTION DEVICES AND ENCLOSURES Optical fire distribution devices and splice enclosures shall comply with AS/NZS 2211.1		N

AS/CA S008:2010			
Clause	Requirement - Test	Result - Remark	Verdict
5.6	CABLES		P
5.6.1	General A customer cable shall meet the requirements of Clauses 5.6.2 to 5.6.9 where specified in Clauses 5.6.10 to 5.6.18 of this Standard.		P
5.6.2	Conductor and optical fibre identification Shall use a system of identification such that all conductors, coaxial tubes or optical fibres within the cable are readily distinguishable visually form one another.	4 twisted pairs. Pairs are identified as: Blue, orange, green and brown. The matching mate in the twisted pair is white insulation with a matching coloured stripe.	P
5.6.3	Insulation and sheath material		NT
	(a) shall use insulation and sheath materials suitable for telecommunications purposes;	HD PE insulation CM PVC sheath	ND
	(b) Where PVC insulation or sheath materials are used, they shall comply with the requirements of Table 1 or 2, as applicable: and		NT
	Table 1 - PVC Insulation Requirements Tensile strength (unaged): 13 MPa Elongation (unaged): 100% Elongation (Aged): 50% of initial after 100C at 120h Volatile Loss: 20 g/m2 after 80C aging for 120h Volume Resistivity: 400GΩ m at 23C, 0.4GΩ m at 60C		N
	Table 2 - PVC Sheath Requirements Tensile strength (unaged): 12 MPa Elongation (Unaged): 100% Elongation (Aged): 50% of initial after 100C at 120h Volatile Loss: 20 g/m2 after 80C aging for 120h		NT
	(c) Where non-PVC insulation or sheath materials are used, they shall comply with the requirements of AS 1049 for-		NT
	(i) Tensile Strength Test (Aged/Unaged);		NT
	(ii) Elongation Test (Aged/Unaged); and		NT
	(iii) Shrinkback Tests for that particular type of insulation and sheath.		NT

AS/CA S008:2010			
Clause	Requirement - Test	Result - Remark	Verdict
5.6.4	Flammability A cable that is required to comply with this Clause shall pass the combustion propagation test of Method 5.6 including Appendix A and B of AS 1660.5.6.	Refer to table in Appendix A.	P
5.6.5	UV resistance Requirements of AS 1049 for cables exposed to UV radiation.		N
5.6.6	Metallic conductors		P
5.6.6.1	Conductor composition Any metallic conductors, other than copper-clad steel used as an inner conductor in coaxial cable, or copper-clad aluminium with a centre conductor greater than 2mm used as an inner conductor in coaxial cable- (1) shall be either plain or plated copper; (2) may be either a single, solid conductor or multi-stranded; (3) the DC resistance shall be less than the values given in Table 3; and (4) the conductor finish should be plain or tinned	Requirement: 74.92 Ω/km max. Measured: 74.10 Ω/km Solid plain copper diam. = 0.566mm All pairs measured and average calculated.	P
5.6.6.2	Electrical withstand voltage A multi-conductor cable that is required to comply with this Clause by any of Clauses 5.6.10 to 5.6.18 of this Standard, when tested at a frequency of 50 Hz on at least 1 m length; (a) shall be able to withstand the appropriate AC voltage levels and test method listed in Table 4, without breakdown for a period of 60 s or a period of 2 s as stated; and (b) for Test 2 and 3, all cables/cordages shall comply to the Table 4 limits using the test specified in AS/NZS 3191 Table 2.1, test number 8(a), and using test method referred in Clause 3.5.1 of AS/NZS 1660.3.		P
5.6.6.3	Mutual capacitance (a) The maximum mutual capacitance between the two wires forming a pair measured at any frequency in the range 800 Hz to 1000 Hz shall not exceed the relevant value given in table 5. (b) The measurement, referred to in Clause 5.6.6.3 (a) shall be performed on a minimum cable length of 100m (c) The mutual capacitance shall be corrected to a length of 1000m	Requirement: 120 nF/km max. Measured: 54.58 nF/km	P

AS/CA S008:2010			
Clause	Requirement - Test	Result - Remark	Verdict
5.6.6.4	Capacitance unbalance (a) The maximum capacitance unbalance between pairs measured at any frequency in the range 800 Hz to 1000 Hz shall not exceed the relevant value given in Table 5. (b) During the measurement referred to in Clause 5.6.6.4 (a), all conductors, other than those under test and the metallic shield (where applicable) shall be connected to earth. (c) The measurement shall be performed on a minimum cable length of 100m. (d) The capacitance unbalance between two pairs of wires with one pair designated 'A' and 'B' and the second pair designated 'C' and 'D'. (e) The capacitance unbalance shall be corrected to a length of 500m.	Requirement: 300 pF per 500m max. Measured: 21.45 pF per 500m	P
5.6.6.5	Insulation resistance (a) shall not be less than the relevant value given in Table 5; (b) the measurement shall be made on a minimum length of 100m of cable or cordage at a potential of 500Vd.c. ±50Vd.c. and the reading taken after the application of the voltage for 60s; and (c) the insulation resistance shall be corrected to a length of 1000m.	Requirement: 1000 MΩ/km min Measured: > 1000 MΩ/km	P
5.6.7	Metallic shield (a) any shield provided in the cable shall be electrically continuous; and (b) Where a foil shield is employed, a drain wire shall be placed in continuous contact with the metallic surface of the shield.	 Foil shield and drain wire provided	P P P
5.6.8	Water penetration test Water Penetration specified in Clause 25, Method-F5B of IEC 60794-1-2.		N
5.6.9	Integral bearer or strengthener		N
5.6.10	Cable with specific attributes Where a cable is claimed to have specific attributes, such as rodent or termite resistance or armouring strength, evidentiary documentation shall be made available on request to support the claim.		N

AS/CA S008:2010			
Clause	Requirement - Test	Result - Remark	Verdict
5.6.11	Metallic paired cable		P
5.6.11.1	General requirements Metallic paired cable, other than cordage, a cord or a special application cable, shall comply with the following Clauses: 5.6.2, 5.6.3, 5.6.4, 5.6.5, 5.6.6.1, 5.6.6.2, 5.6.6.3, 5.6.6.4, 5.6.6.5, 5.6.7, 5.6.8 and 5.6.9.		P
5.6.11.2	Construction A cable intended to carry a frequency of 300 Hz or greater shall be shielded or of twisted pair construction.		P
5.6.12	Cordage with metallic conductors		N
5.6.13	Cords with metallic conductors		N
5.6.14	Metallic jumper wire and jumper cable		N
5.6.15	Coaxial cable		N
5.6.16	Optical fibre cable		N
5.6.17	Blown fibre tube systems		N
5.6.18	Special application cables		N
5.7	CONNECTING HARDWARE, INCLUDING PLUGS AND SOCKETS OF ALL DESIGNS		N
5.8	CABLING PRODUCTS FOR UNDERGROUND AND AERIAL INSTALLATIONS		N

****** END OF REPORT BODY ******

Appendix A – Additional Test Data
Appendix B – Photographic Record of Sample
Appendix C – Product Specifications provided by the client

Appendix A – Additional Test Data

5.6.4	TABLE: Flammability Test	P

No	Object	Duration of application of flame (S)	Time object remained alight after removal of flame (S)	Time until ignition of tissue paper (S)	Time until ignition of particle board (S)	Ignition of tissue paper	Particle board scorching	Extent of burning upwards (mm)*	Extent of burning downwards (mm)*	Result
1	CAT6A Solid Cable	60 sec	1 sec	NI	NI	NI	NI	320 mm	490 mm	Pass

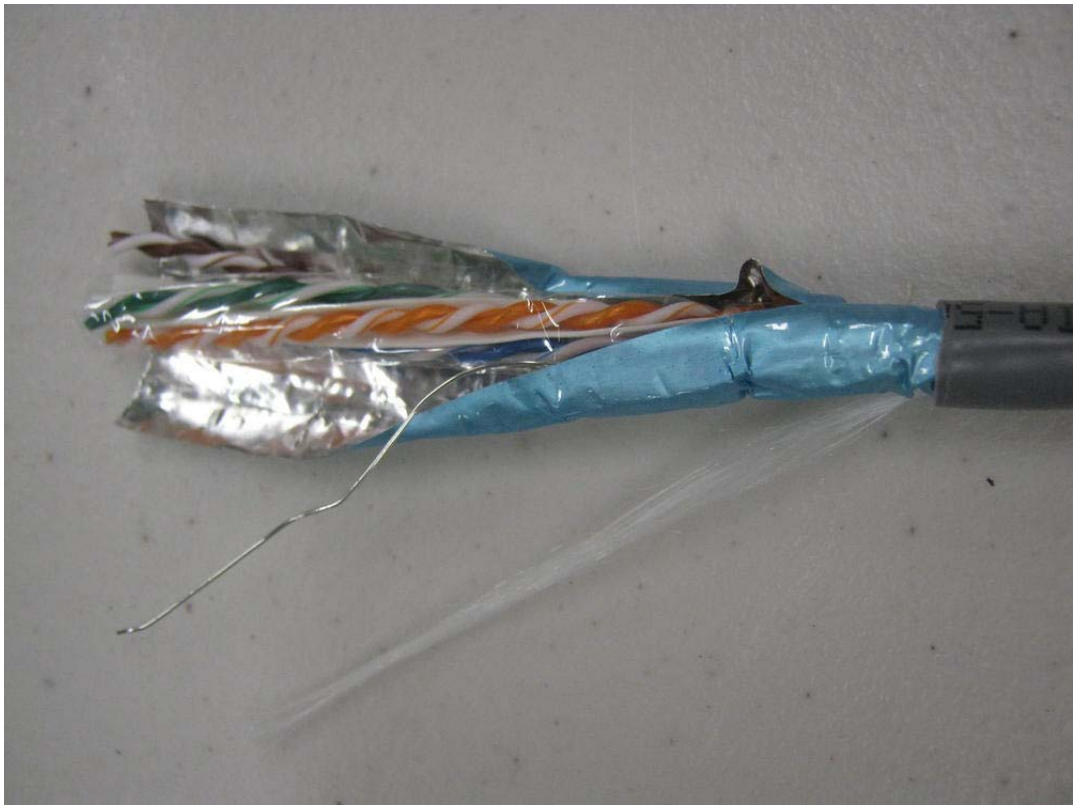
* Measured from lower edge of upper clamp. Start of burn was 475 mm from upper clamp. Limit for upward burn is > 50 mm and limit for downward burn is <540 mm from upper clamp (AS 1660.5.6).

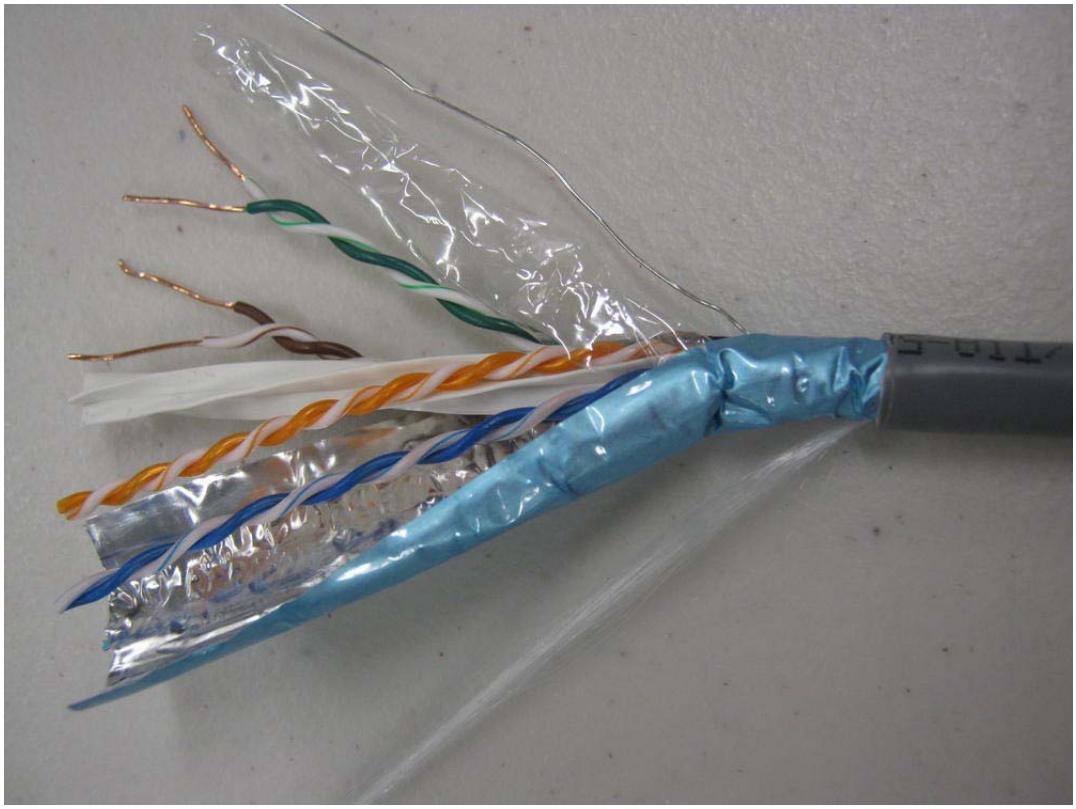
LEGEND

P	Pass
F	Does not comply
NA	Not applicable
NI	No ignition

NOTE:
INDIVIDUAL ITEMS OF THIS TEST REPORT SHOULD NOT BE QUOTED IN ISOLATION AS PROOF OF PRODUCT ACCEPTABILITY NOR APPLIED TO DIRECTLY ASSESS PERFORMANCE UNDER CONDITIONS OTHER THAN AS ENVISAGED BY THE REFERENCE SPECIFICATION, E.G. INDIVIDUAL FIRE TESTS TO PROVE AN OVERALL ACCEPTABLE FIRE HAZARD LEVEL.

Appendix B – Photographic Record of Sample





Appendix C – Product Specifications provided by the client

PRODUCTION SPECIFICATION SHEET

for U-FTP CAT6A 23AWG CABLE

Configuration & physical Characters:		**Electric Characters:**		**Premise Cable Electrical Table(TIA Cat 6A Perm.Link)**						
Type of cable	U-FTP	1.Spark Test	2000±250VOC	Freq (Mhz)	Insert loss(dB)	NEXT (dB)	RL (dB)	ACR-F (dB)	PS NEXT(dB)	PS ACR-F(dB)
Length per reel	1000ft	2.Mutual Capacitance	560pF/100m Max	1	3.0	65.0	19.1	64.2	62.0	61.2
Number of pairs	4	3.Conductor Resistance	MAX 9.38Ω/100m at 20°C	4	3.5	64.1	21.0	52.1	61.8	49.1
Field of application	indoor	4.Capacitance Unbalance	MAX 330pF/100m	8	5.0	59.4	21.0	46.1	57.0	43.1
Category	Cat.6A	5. Resistance Unbalance	MAX 5%	10	5.5	57.8	21.0	44.2	55.5	41.2
Flame Rating:	CM/CMR PVC	6.Impedance	100±15Ω	16	7.0	54.6	20.0	40.1	52.2	37.1
Conductor Material	Bare Copper			20	7.8	53.1	19.5	38.2	50.7	35.2
Conductor Size	23AWG 1/0.56/0.58±0.015 mm			25	8.8	51.5	19.0	36.2	49.1	33.2
				31.25	9.8	50.0	18.5	34.3	47.5	31.3
Insulation Material	HD-PE			62.5	14.0	45.1	16.0	28.3	42.7	25.3
Insulation Thickness	MIN at any point: 0.24/0.28mm MAX AVG: 0.26/0.30mm			100	18.0	41.8	14.0	24.2	39.3	21.2
Insulation Diameter	1.08± 0.01mm;1.15± 0.01mm			200	26.1	36.9	11.0	18.2	34.3	15.2
Insulation Color code	Blue/White-Blue Orange/White-Orange Green/White-Green Brown/White-Brown			250	29.5	35.3	10.0	16.2	32.7	13.2
				350	35.6	31.8	8.6	13.3	29.1	10.3
				500	43.8	26.7	8.0	10.2	23.8	7.2
Insulation Elongation	MIN 300%			**Standard:**		**ISO/IEC 11801; ANSI/TIA-568-C.2;UL 444**				
Insulation Tensile strength	MIN 1.682Kg/mm^2			**Test :**		**Perm.Link test by fluke 90+/-5m**				
stranding Myar	0.025×23mm									
stranding Al Foil	0.065×23mm									
stranding Drain Wire	1/0.40±0.02mm									
stranding CROSS SLOT	5.0x0.7mm									
Jacket Material	CM PVC									
Jacket Thickness	MIN at any point: 0.53mm MAX AVG: 0.57mm	Marking: per request								
Jacket Diameter	7.4±0.2mm									
Jacket Colors	per request									
Jacket Aging at 100°C for 168Hrs	MIN ELONGATION RETENTION:50% MIN TENSILE STRENGTH RETENTION:75%									
				Edition:	OR	REV.	P/N:			
DIMENSIONS ARE IN mm	TOLERANCES ARE	DRAWN Jason	APPROVED			A	DESCRIPTION U-FTP CAT6A 23AWG CABLE			
	FRACTIONS DECIMALS ANGLES	DATE 02/11/2014	DATE							
MOLD NO.	.X±0.20	SHEET OF								
	.XX±0.12	SIZE A4	SCALE N.T.S