

COMPLIANCE TESTING REPORT FOR AUSTRALIAN STANDARD AS/CA S008:2020 REQUIREMENTS FOR CUSTOMER CABLING PRODUCTS

Client: 4Cabling Pty Ltd

Address: 17/31 Maddox St, Alexandria, NSW, 2015, Australia

Report Number: 10214CA_SLDC6AFUTPUV_S008

Date of Testing: 18 October 2021

File Number: 4CA210902

Product Name: SLD.C6AFUTP.UV.BLACK

Brand Name: 4Cabling

Product Model No: SLD.C6AFUTP.UV.BLACK

Product Description: 4C | Cat 6A F/UTP UV Stabilized Cable Roll 305m : 23AWGx4P, LDPE Jacket | Black

Result: **Complies**

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 Testing Engineer

Reviewed by: Philip Hitchcock
 Testing Engineer

Date of Issue: 21 October 2021




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

SUMMARY OF COMPLIANCE WITH AUSTRALIAN STANDARD **AS/CA S008:2020**

The CAT6A F/UTP UV Stabilized Outdoor Data cable was supplied for AS/CA S008:2020 testing by 4Cabling Pty Ltd of 17/31 Maddox St, Alexandria, NSW 2015, Australia.

The Equipment Under Test (EUT) consisted of a length of CAT6A F/UTP UV Stabilized Outdoor Data cable. The cable was 4 pair construction. The conductors were solid copper. The nominal diameter of each conductor was 0.565 mm. The conductors were insulated with High Density Polyethylene (HDPE). The sheath was Low-density Polyethylene (LDPE). Please also refer to the photo in Appendix B and Product Specifications in Appendix C, at the rear of the report.

The EUT had the following sheath markings:
4CABLING CAT.6A F/UTP (OUTDOOR USE) 23AWGx4P CABLE CONFORM TO
ANSI/TIA-568-C.2 & ISO/IEC 11801 ED.2 & EN 50288-6-1 06/2021 XXXXM

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

The CAT6A F/UTP UV Stabilized Outdoor Data cable **COMPLIES** with the tested clauses of AS/CA S008:2020.

SPECIAL CONDITIONS FOR COMPLIANCE:

The Cable must comply with Clause 5.6.3 requirements for insulation and sheath materials.

The Cable must comply with Clause 5.6.5 (UV resistance requirements of AS 1049).

The Cabling Product must comply with Clause 5.1.2 and be fit for purpose for its intended use.

This Cable is compliant for outdoor use only.

Possible Test Case Verdicts:

- test case does not apply to the test objectN(.A)
- test object does meet the requirementsP(ass)
- test object does not meet the requirements.....F(ail)
- testing was not performed.....NT
- noted.....ND

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2 Brex Court, Reservoir Victoria 3073 Australia. Ph: +613 9464 4016



AS/CA S008:2020			
Clause	Requirement - Test	Result - Remark	Verdict
5.	REQUIREMENTS		P
5.1	GENERAL		P
5.1.1	Physically distinguishable Cabling products, other than pits and access holes, shall be physically distinguishable from products used for distribution or connection of Mains Supply.		P
5.1.2	Fitness for purpose A Cabling Product shall be fit for purpose for its intended use, e.g. a Category 6 Cord that meets its performance requirements.		NT
5.1.3	Twisted pair and quad For the purposes of this Standard, a quad is deemed to satisfy a requirement for which a twisted pair has been specified.		N
5.2	MARKINGS		P
5.2.1	Labelling Instrument		ND
5.2.2	Inappropriate markings Cabling products intended solely for ES1 or ES2 telecommunications circuits 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
5.2.3.3	Marking durability		N
5.3	UNDERGROUND CONDUIT		N
5.4	CABLE DISTRIBUTION DEVICES		N
5.5	THIS CLAUSE IS DELETED		ND

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AS/CA S008:2020			
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 5.6.10 where specified in Clauses 5.6.11 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 from 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;	HDPE insulation LDPE 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		N
	(c) Where non-PVC insulation or sheath materials are used, they shall comply with the requirements of AS 1049 for- (i) Tensile Strength Test (Aged/Unaged); (ii) Elongation Test (Aged/Unaged); and (iii) Shrinkback Tests for that particular type of insulation and sheath.		NT
5.6.4	Flammability A Cable that is required to comply with this Clause shall pass both – (a) the resistance to vertical flame propagation test as specified in AS/NZS IEC 60332.1.2 including Annex A; and (b) the falling flaming droplets/particles test as specified in AS/NZS IEC 60332.1.3 including Annex A.	Outdoor Cable	N
5.6.5	UV resistance Requirements of AS 1049 for Cables exposed to UV radiation.		NT
5.6.6	Metallic conductors		P

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AS/CA S008:2020			
Clause	Requirement - Test	Result - Remark	Verdict
5.6.6.1	<p>Conductor composition</p> <p>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-</p> <ul style="list-style-type: none"> (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 	<p>Requirement: 75.18 Ω/km max.</p> <p>Measured: 72.28 Ω/km</p> <p>Solid plain copper diam. = 0.565mm</p> <p>All pairs measured and average calculated.</p>	P
5.6.6.2	<p>Electrical withstand voltage</p> <p>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;</p> <ul style="list-style-type: none"> (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	<p>Mutual capacitance</p> <ul style="list-style-type: none"> (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 	<p>Requirement: 52 nF/km max.</p> <p>Measured: 51.8 nF/km</p> <p>This measurement was within our area of uncertainty which is ± 1.7 nF/km, when calculated for a 95% confidence level and a coverage factor of $K = 2$</p>	P

AS/CA S008:2020			
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: 150 pF per 500m max. Measured: 0 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. \pm 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: 10 G Ω /km min Measured: > 10 G Ω /km	P
5.6.7	Continuous metallic shield (a) any continuous metallic shield provided in the Cable shall be electrically conductive; and (b) Where a continuous 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
5.6.8	Water penetration test Water Penetration specified in Clause 5, Method-F5B or F5C of IEC 60794-1-22:2017.		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

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AS/CA S008:2020			
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, 5.6.9 and 5.6.10.		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
5.6.11.3	Operating Temperature A Cable shall have a minimum continuous operating temperature rating of 60 °C	Refer to Appendix C – Product Specifications provided by the client	ND
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
5.6.19	ES3 generic cable		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

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Appendix A – Additional Test Data

5.6.6.2	TABLE: Cable – Electrical Withstand Voltage		P
Test voltage applied between:		test voltage (V)	breakdown Yes / No
Blue wire to all other conductors and shield		2000 V a.c. rms	No
White Blue wire to all other conductors and shield		2000 V a.c. rms	No
Orange wire to all other conductors and shield		2000 V a.c. rms	No
White Orange wire to all other conductors and shield		2000 V a.c. rms	No
Green wire to all other conductors and shield		2000 V a.c. rms	No
White Green wire to all other conductors and shield		2000 V a.c. rms	No
Brown wire to all other conductors and shield		2000 V a.c. rms	No
White Brown to all other conductors and shield		2000 V a.c. rms	No
All conductors to sheath		4500 V a.c. rms	No
Shield to sheath		4500 V a.c. rms	No

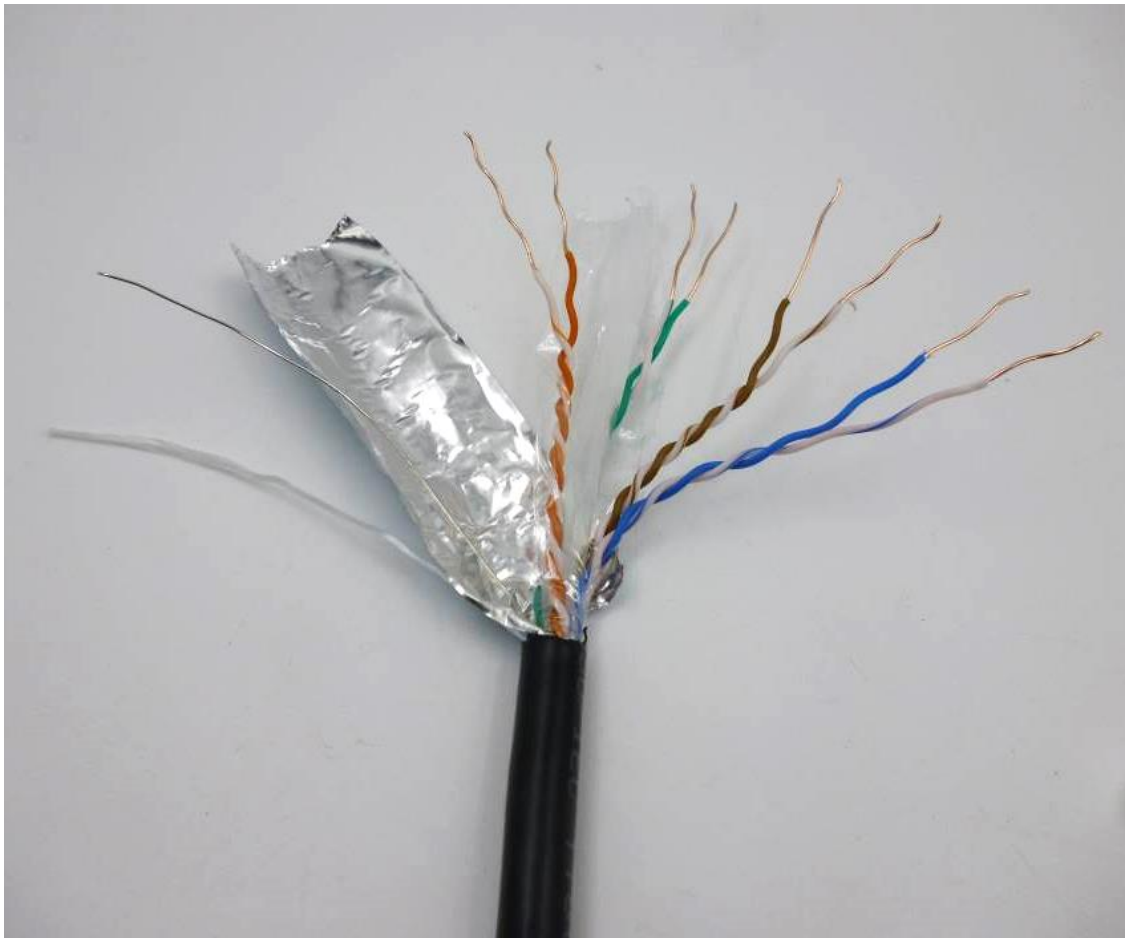
5.6.6.5	TABLE: Insulation Resistance		P
Test Voltage applied between:		Test Voltage (V)	Insulation Resistance (MΩ/km)
Wires forming a pair		500Vdc	>10 GΩ/km

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Appendix B – Photographic Record of Sample



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Appendix C – Product Specifications provided by the client



4CABLING
QUALITY PRODUCTS FOR A CONNECTED WORLD

SLD.C6AFUTP.UV.BLACK

CAT6A F/UTP LDPE SOLID CORE CABLE ROLL 305M: BLACK

4Cabling's CAT6A F/UTP LDPE 305M Ethernet Cable is made from 100% bare copper and supplied on a sturdy wooden tray. Our cable is independently third-party tested and certified to ISO/IEC 11801, TIA/EIA-568-C.2; and is RoHS compliant.

FEATURES:

- Fully tested at 100M to 10GBASE-T (500MHz) ISO/IEC 11801, TIA/EIA-568-C.2, CAT6A standard
- Complies with RoHS standards.
- Supports speeds of up to 10Gb/s for up to 100m
- Operating temperature -40C° to 70C°
- Gauge: 23AWG
- Colour: Black
- Length: 305m

COMPLIANCES

- ISO/IEC 11801, TIA/EIA-568-C.2
- RoHS Compliant
- 1 Year Warranty

Category	F/UTP CAT6A-MP-PE			<div><div>White-Blue/Blue</div><div>Sheath</div><div>Rip cord</div><div>White-Brown/Brown</div><div>Separator</div><div>White-Orange/Orange</div><div>Mylar</div><div>AL/Mylar</div><div>Drain wire</div><div>White-Green/Green</div></div>					
Reference Standard	ISO/IEC 11801, TIA-568-C.2								
Conductor	Material	SOLID-Bare Copper							
	Nom. O.D. (mm)	0.565	up	+0.005					
			down	-0.005					
Insulation	Material	HDPE							
	Thickness	1.12 ± 0.05 mm							
Screening Material	Mylar - AL/Mylar								
Sheath	Thickness	0.60 ± 0.05mm			Technical Performance (100m):				
	External O.D.	7.4 ± 0.4 mm			Frequency (MHz)	KL	ATT	NEXT	PAIRS DELAY
					(MHz)	≥ dB	≤ dB	≥ dB	≤ ns
	Surface	Clean, Prop. Satiation			1	20.0	—	74.3	570.0
	Material	LDPE (complies RoHS)			4.0	23.0	3.8	85.3	550.0
Surface Printing	Color	Black			8.0	24.5	5.3	88.8	546.7
	Letter height	3.0 ± 0.3mm			10.0	25.0	5.9	89.3	545.4
	Color	White			15.0	25.0	7.5	86.2	542.0
	Print error & Space	≤ ± 0.5%, 1m			20.0	25.0	8.4	84.8	542.1
					25.0	24.3	9.4	83.3	541.2
Core Color	1 White-Blue/Blue	2 White-Orange/Orange			31.25	23.6	10.5	81.9	540.1
	3 White-Green/Green	4 White-Brown/Brown			62.5	21.5	15.0	77.4	538.8
Packing	Wooden Tray			100	20.1	16.1	74.3	537.8	
Wooden Tray dimension	According to the requires			200	18.0	27.8	69.0	536.5	
Packing length	(305 ± 1.5)m			250	17.3	31.1	68.3	536.3	
Rip-cord	Yes	Drain wire	Yes	300	16.8	34.3	67.1	536.1	
Sheath Physical Properties	Before Aging Tensile Strength (Mpa)	≥ 10.0			500	15.2	40.3	63.0	535.0
	Elongation (%)	≥ 350			Frequency (MHz)	KL	ELFEXT	PS ELFEXT	
	Aging Period (°C × hrs)	100°C × 24h × 10d			(MHz)	≥ dB	≥ dB	≥ dB	
	After Aging Elongation (%)	≥ 300			1	72.3	68.0	65.0	
	Cold bend (-20 ± 2°C × 4h) 3 × Cable O.D. No visible cracks				4	63.3	56.0	53.0	
Electrical Characteristics (20°C)	Impedance (Ω)	1.0 250.0MHz 100 ± 15			8	58.6	49.9	46.9	
		250.0 500.0MHz 100 ± 22			10	57.3	48.0	45.0	
	1.0-500.0MHz Delay Skew (ns/100m)	≤ 45			15	54.2	43.9	40.9	
	Unbalanced-to-ground capacitance (pF/100m) max	330			20	52.8	42.0	39.0	
	DC Resistance (Ω/100m) max	9.33			25	51.3	40.0	37.0	
DC Conductor Resistance Unbalance (%) max	± 0.0			31.25	49.9	38.1	35.1		
				62.5	45.4	37.1	34.1		
				100	42.3	34.0	31.0		
				200	37.8	29.0	26.0		
				250	36.3	28.0	25.0		
				300	35.1	26.5	23.5		
				500	31.8	24.0	21.0		

CONNECT & COLLECT LOCATIONS

17/31 Maddox Street | 17/428 Old Geelong Road | 12/58 Metroplex Ave | 1/9 Collingwood Street
Alexandria NSW 2015 | Hoppers Crossing VIC 3029 | Murarrie QLD 4172 | Osborne Park WA 6017

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GTC APPROVED

