

1. CONDUCTOR

Material: Bare Copper
 Construction: See Table 1
 Diameter: See Table 1

2. INSULATION

Material: Cross-linked Polyethylene
 Wall thickness: See Table 1
 Diameter: See Table 1
 Color: Orange
 Marking: None

3. BRAID SHIELD

Material: 36 AWG Tin Plated Copper
 Coverage: 95%, min
 Diameter: See Table 1

4. JACKET

Material: Cross-linked Polyethylene
 Wall thickness: See Table 1
 Diameter: See Table 1
 Color: See Table 3
 Marking: JUDD WIRE INC – JUDD P/N

5. PHYSICAL CHARACTERISTICS

Temperature rating: -40°C to 150°C
 Voltage Rating: 600V
 Weight: See Table 1

**6. PERFORMANCE PROPERTIES
 INSULATION – ISO 6722-1 CLASS D**

Mechanical

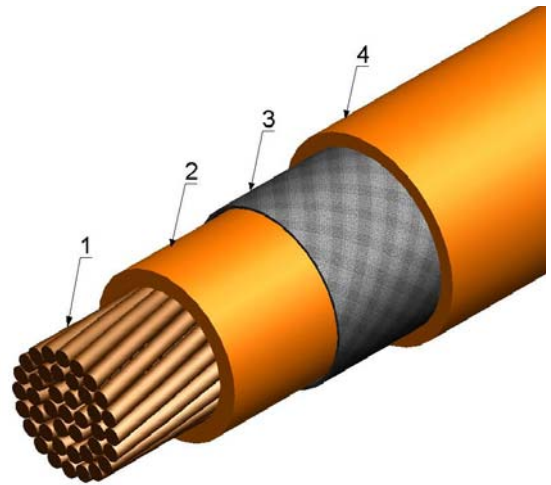
Tensile Strength (SAE J1128)	10 MPa, min
Elongation (SAE J1128)	150%, min
Scrape Abrasion*	See Table 2
Sandpaper Abrasion*	See Table 2
Adhesion (50 mm @ 50 mm/min)	See Table 2

Electrical

Dielectric Strength	1000V, 60 Hz, 60 sec
Withstand Voltage	1000V, 60 Hz, 30 min
	500V/sec Increase to 5000V, Hold for 5 min
Insulation Volume Resistivity	10 ⁹ Ω.mm, min
Spark Test	8000V _{ac}
Conductor	ASTM B-3
DC Resistance	See Table 2

Thermal

Short-term Aging (240 hrs @ 175°C)
 No Cracks, Pass Dielectric Strength Test
 Long-term Aging (3000 hrs @ 150°C)
 No Cracks, Pass Dielectric Strength Test



PERFORMANCE PROPERTIES (Cont'd)

Thermal Overload (6 hrs @ 200°C)
 No Cracks, Pass Dielectric Strength Test
 Flame Resistance (45°) 70 Sec Burn, max
 Low Temperature Winding (4 hrs @ -40°C)
 No Cracks, Pass Dielectric Strength Test
 Low Temperature Impact (4 hrs @ -15°C)
 Pass Impact Test, Pass Dielectric Strength Test
 Shrinkage (15 min @ 150°C) 2mm, max
 Hot Water Resistance
 (35 days @ 85°C, 10g/L Salt Solution)
 No Cracks, Pass Dielectric Strength Test
 Insulation Volume Resistivity
 1 x 10⁹ Ω.mm, min
 High Temperature Pressure Test (4 hrs @ 150°C)
 Pass Dielectric Strength Test

Chemical

Ozone Resistance (192 hrs @ 65°C)
 1 ppm, No Cracks
 Fluid Compatibility O.D. Change, max
 Pass Dielectric after Immersion
 Engine Oil (IRM 902) 15%
 Gasoline (Ref. Fuel C) 15%
 Ethanol / Ref Fuel C 15%
 Diesel Fuel 15%
 Power Steering (IRM 903) 30%
 Auto Trans. (Dexron VI) 25%
 Engine Coolant 50/50 15%
 Battery Acid (Sp. Gr. ~ 1.26) (SAE J1128) 5%



JUDD WIRE INC.
 124 Turnpike Road
 Turners Falls, MA 01376
 (413) 863-4357

Date	Rev	By	Appr'd	ECN	Description: 1C BC XLPO/XLPO, SHIELDED, ISO 150°C, 600V, HEV	
08/25/08	---	ARJP	EJK	---		
06/16/14	H	RMB	RTB	14-1526		
04/15/15	J	RB		15-1592		
Customer Approval:					Specification Number: JW1187-08	Page: 1 of 4

PERFORMANCE PROPERTIES (Cont'd)

CABLE – ISO 14572

Mechanical

Tensile Strength (SAE J1128)	10 MPa, min
Elongation (SAE J1128)	150%, min
Bend Radius	
Secured Mount	See Table 2
Unsecured Mount	See Table 2

Electrical

Dielectric strength	1000V, 60 Hz, 60 Sec
Withstand Voltage	5000V, 60 Hz, 60 Sec
Theoretical Ampacity	See Table 4
(Ambient Temperature Air, Single Cable routing in a non-enclosed space)	
Spark Test	8000 V _{ac}

Thermal

Short-term Aging (240 hrs @ 175°C)	
No Cracks, Pass Dielectric Strength Test	
Long-term Aging (3000 hrs @ 150°C)	
No Cracks, Pass Dielectric Strength Test	
Flame Resistance (45°)	70 Sec Burn, max
Low Temperature Winding (4 hrs @ -40°C)	
No Cracks, Pass Dielectric Strength Test	
Thermal Overload (6 hrs @ 200°C)	
No Cracks, Pass Dielectric Strength Test	
Shrinkage (15 min @ 150°C)	5 mm, max
High Temperature Pressure Test (4 hrs @ 150°C)	
40% Impression Thickness, min	

Chemical

Ozone Resistance (192 hrs @ 65°C)	1 ppm, No Cracks
Fluid Compatibility	O.D. Change, max
Pass Dielectric after Immersion	
Engine Oil (IRM 902)	15%
Gasoline (Ref. Fuel C)	15%
Ethanol / Ref Fuel C	15%
Diesel Fuel	15%
Power Steering (IRM 903)	30%
Auto Trans. (Dexron VI)	25%
Engine Coolant 50/50	15%
Battery Acid (Sp. Gr. ~ 1.26) (SAE J1128)	5%

7. PROCEDURAL REFERENCE SPECIFICATIONS

ISO 6722-1 (CLASS D)

SAE J1128

ISO 14572

ASTM B-3

8. PRODUCT STANDARD

ISO 6722-1 (Approved Exception)

ISO 14572



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Table 1: Dimensional Data

Conductor			Primary Insulation			Braid Shield Diameter (mm)	Jacket		Weight (kg/km)
Conductor Size (mm ²)	Construction (# / mm)	Diameter (mm)	Wall Thickness (mm)		Diameter (mm)		Jacket Wall, Nom (mm)	Diameter (mm)	
			Min	Nom					
2.00	19/.36	1.78	0.28	0.35	2.48 ± 0.09	2.99 ± 0.11	0.76	4.51 ± 0.16	45.1
3.00	41/.32	2.36	0.32	0.40	3.16 ± 0.11	3.66 ± 0.13	0.76	5.19 ± 0.18	65.1
4.00	56/.30	2.41	0.32	0.40	3.21 ± 0.11	3.72 ± 0.13	0.76	5.24 ± 0.18	71.8
5.00	105/.25	2.79	0.32	0.40	3.60 ± 0.13	4.10 ± 0.15	0.76	5.62 ± 0.20	85.9

Table 2: Performance Properties

Size (mm ²)	Max DCR (mΩ/m)	Bend Radius (mm)		Min Adhesion Core (N)	Min Adhesion Jkt (N)	Abrasion Resistance*		
		Secured Mount	Unsecured Mount			Scrape (min)	Sandpaper	
							Mass (kg)	Length (min)
2.00	9.42	18.0	36.0	TBD	TBD	TBD	0.20	500
3.00	6.15	20.0	39.5	TBD	TBD	150	0.50	300
4.00	4.71	21.0	42.5	TBD	TBD	TBD	0.50	350
5.00	3.94	22.0	44.0	TBD	TBD	TBD	0.50	430

*Abrasion Resistance is 60V Thin Wall Requirement (Approved Exception)

Table 3: Colors

	2.00	3.00	4.00	5.00
Orange	C12686	C09494	C12692	C12697
Orange/White	C12688	C12690	C12695	C12698
Orange/Black	C12689	C12691	C12696	C12699



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Table 4: Ampacity

Size (mm ²)	DCR @ 20°C (mΩ/m) Max.	Ambient Air Temperature (Single Cable Routing in a Non-Enclosed Space)						
		22°C	50°C	75°C	100°C	125°C	140°C	
2	9.42	Theoretical DC Ampacity (Maximum Current, Amps)	37	33	28	23	16	10
3	6.15		40	35	31	25	18	11
4	4.71		57	51	44	36	25	16
5	3.94		66	58	51	41	29	18



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