

1. CONDUCTOR

Material: Tin Plated Copper
Construction: See Table 1

2. INSULATION

Material
Layer 1: Irradiation Crosslinked Polyolefin
Layer 2: Irradiation Crosslinked PVDF
Wall thickness
Layer 1: 0.006" nominal
Layer 2: 0.003" nominal
Diameter: See Table 1
Color: See Table 3

3. CABLE

Components: See Table 1
Lay: 14 x Cabled Core OD
Fillers: Optional

4. BRAID SHIELD

Material: 36 AWG Tinned Copper
Coverage: 85% min
Barrier Tape: Optional

5. JACKET

Material: Irradiation Crosslinked PVDF
Thickness: 0.009" nominal
Color: White
Marking: JUDD WIRE FLEXRAD 44 M/C #XX
AWG ZZ/ZZ 150°C 600V (YYYY)

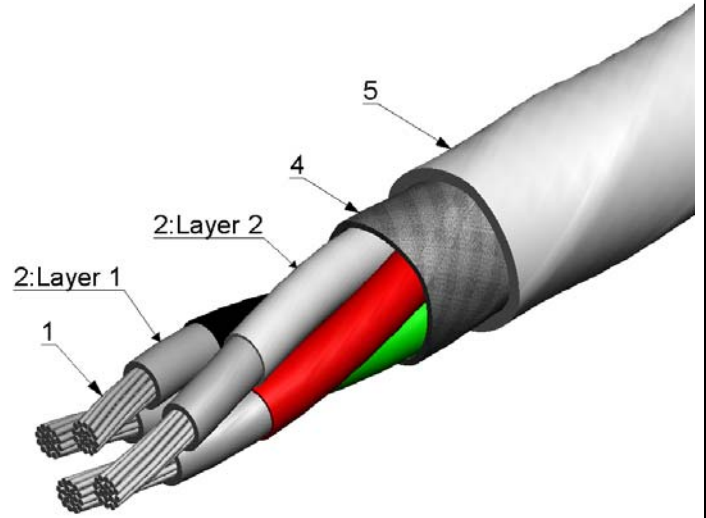
M – Denotes Number of components
XX – Denotes AWG Size
ZZ/ZZ – Denotes Conductor Standing
YYYY – Denotes Year of Manufacture

6. PHYSICAL CHARACTERISTICS

Temperature rating: 150°C
Voltage rating: 600V
Weight: See Table 1

7. PERFORMANCE PROPERTIES – AS81044/12

Mechanical
Elongation 150%, min
Tensile Strength 2500 psi, min
Concentricity 70%, min
Wicking 2.25", max
Bend Test
See Table 2 for Mandrel Requirements
Print Durability 125 Cycles, 500g
Mandrel Wrap Test
See Table 2 for Mandrel Requirements
No Cracks, Pass Wet Dielectric Test
Electrical
Impulse Dielectric Test 6.0/8.0 kV_{ac}
Wet Dielectric Test (5 hrs @ 25°C)
5% NaCl Solution, 2500 V, 5 min



PERFORMANCE PROPERTIES (Con't)

Insulation Resistance 5000 MΩ/kft, min
Direct Current Resistance @ 20°C See Table 1
Surface Resistance 500 MΩ·in, Initial and Final Readings, min
Spark Test 1500 V
Thermal
Shrinkage (6 hrs @ 300°C) 0.125 in, max
Life Cycle (168 hrs @ 200°C)
No Cracks, No Conductor Pitting
Accelerated Aging I (6 hrs @ 300°C)
No Cracks, No Conductor Pitting
Pass Wet Dielectric Test
Accelerated Aging II (6 hrs @ 225°C)
Print shall Remain Legible
Cold Bend (4 hrs @ -65°C)
See Table 2 for Mandrel Requirements
No Cracks, Pass Wet Dielectric Test
Thermal Shock Resistance
High Temperature 30 min @ 150°C
Low Temperature 30 min @ -55°C
Number of Cycles 4
Change in Measurement 0.060", max
Humidity Resistance 5000 MΩ/kft, min
Blocking (24 hrs @ 225°C)
Adjacent Wire Shall not Stick
Flammability 60° Angle
Maximum Burn Time 30 sec
Maximum Char Length 3.0"
Tissue Paper No Flame
Smoke Test (15 min @ 200°C)
No Indication of Visible Smoke



JUDD WIRE INC.
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(413) 863-4357

Date	Rev	By	Appr'd	ECN
06/20/13	--	EM	GT	---
09/25/13	A	EM	GT	13-1431
Customer Approval:				

Description: M/C, TPC, FLEXRAD 44, BSH XLPVDF 150°C, 600V	
Specification Number: JW1505-13	Page: 1 of 2

Chemical

Immersion Tests (20 hrs @ 50°C)
 No Cracks, Pass Wet Dielectric
 OD Increase, Max

Lubricating Oil 5%
 Hydraulic Fluid 5%
 Isopropyl Alcohol 5%
 Turbine Fuel 5%

8. REFERENCE SPECIFICATION

SAE AS81044
 SAE AS81044/12

Table 1 - Construction Details

# C	Size	Stranding	DCR	Insulated OD			Finished OD, in			Weight
	AWG	#S/AWG	Ω/kft, max	min	nom	max	min	nom	max	lbs/kft, nom
2	18	19/30	6.23	0.063	0.065	0.067	0.162	0.172	0.182	25.6
4	18	19/30	6.23	0.063	0.065	0.067	0.188	0.198	0.208	42.2
2	16	37/32	4.49	0.071	0.074	0.077	0.201	0.211	0.221	33.3
4	16	37/32	4.49	0.071	0.074	0.077	0.205	0.215	0.225	52.7

Table 2: Test Requirements

Size (AWG)	Bend Test Requirements				
	Mandrel Diameter (in)			Test Load (lbs)	
	Life Cycle and Acc. Aging Test	Cold Bend Testing	Wrap Test	Life Cycle and Acc. Aging Test	Cold Bend Test
24	0.50	0.50	0.250	0.38	0.50
22	0.75	0.75	0.250	0.36	1.00
20	0.75	1.00	0.250	0.36	1.00
18	1.00	1.50	0.375	0.50	1.00
16	1.00	1.50	0.375	0.50	1.00
14	1.50	2.00	0.500	1.00	3.00
12	2.00	2.00	0.500	1.00	3.00

Table 3: Color Code

Component #	Color
1	Black
2	White
3	Red
4	Green



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A

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