



# HIGH-PERFORMANCE RAYCHEM WIRE AND CABLE

THE PERFORMANCE CHOICE FOR  
HARSHTEST ENVIRONMENTS

## QUICK REFERENCE GUIDE

### High Performance

- Meet your application challenges . . . from harsh to harshest
- Compatible with full range of connectors and harnessing components

### Space and Weight Savings

- Wide range of advanced cross-linked insulations and jackets
- Choice of tin-, nickel-, or silver-plated copper/copper alloy conductors



Aerospace				
Product Family		Conductor Sizes (AWG)	Temperature Range (°C)	Insulation Material
SPEC 44 (AS81044)	Military Aerospace Commercial Aerospace In-Flight Entertainment Space Applications Satellites	26 to 1/0	-65 to 150	Radiation-Cross-Linked PVDF
SPEC 55 (AS22759)		30 to 4/0	-65 to 200	Radiation-Cross-Linked ETFE
SPEC 80		30 to 4/0	-65 to 200	Radiation-Cross-Linked Flexible ETFE
SHF-260	Helicopters Engines	24 to 4/0	-65 to 260	Modified PFA

Marine				
Product Family		Conductor Sizes (AWG)	Temperature Range (°C)	Insulation Material
ZHPCG / ZHI (Class 5 & Class 6)	Military Naval Applications Military Electronics Shipboard Weapon Systems Shipboard Communication Systems Offshore Marine Applications Umbilicals / Tethers Drilling and Pumping Equipment	1.5 mm <sup>2</sup> to 400 mm <sup>2</sup>	-45 to 125	Radiation-Cross-Linked Halogen-Free Polyolefin
FRD25S		8 to 4/0	-55 to 125	Flexible Diesel-Resistant Polyester Blend
10603		14 to 4/0 and 250 and 350 MCM	-55 to 125	Thermorad Dual Insulation
SPEC 44/44M		30 to 1/0	-65 to 150	Radiation-Cross-Linked PVDF
SPEC 99M		See Def Stan 61-12 Part 18 for construction available sizes	-40 to 120	Radiation-Cross-Linked Modified Polyester
100G (VG-95218-Type 20 to Type 23)		30 to 4/0	-55 to 125	Halogen-Free Polymer

Ground				
Product Family		Conductor Sizes (AWG)	Temperature Range (°C)	Insulation Material
ZHPCG / ZHI (Class 5 & Class 6)	Grounds Systems Military Ground Vehicles Wheeled and Tracked Vehicles Amphibious Vehicles Heavy and Light Trucks	1.5 mm <sup>2</sup> to 400 mm <sup>2</sup>	-45 to 125	Radiation-Cross-Linked Halogen-Free Polyolefin
SPEC 44 (AS81044)		26 to 1/0	-65 to 150	Radiation-Cross-Linked PVDF
SPEC 55 (AS22759)		30 to 4/0	-65 to 200	Radiation-Cross-Linked ETFE
SPEC 80		30 to 4/0	-65 to 200	Radiation-Cross-Linked Flexible ETFE
SHF-260		24 to 4/0	-65 to 260	Modified PFA
PWR0113		8 to 4/0	-65 to 200 (3000+ hours)	Fluoroelastomer
FRD25S		8 to 4/0	-55 to 125	Flexible Diesel-Resistant Polyester
10603		14 to 4/0 and 250 and 350 MCM	-55 to 125	Thermorad Dual Insulation
100G (VG-95218-Type 20 to Type 23)		30 to 4/0	-55 to 125	Halogen-Free Polymer

\*2000 V is available as nonstandard part. Consult TE.

Material Abrasion Resistance and Flexibility				
Material	Product Group	Abrasion Resistance	Flexibility	
FDR25	FDR25	Fair	Excellent	
Thermorad Dual Insulation	10603	Good	Good	
XL Halogen Free Polyolefin	ZHPCG	Good	Good	
Modified PFA	SHF-260	Good	Good	
Fluoroelastomer	PWR0113	Good	Good	
Radiation-Cross-Linked PVDF	SPEC 44	Very Good	Fair-Good	
XL ETFE	SPEC 55	Very Good	Fair-Good	
XL Flexible ETFE	SPEC 80	Very Good	Good	
XL ETFE	VG-95218-Type 20 to Type 23	Very Good	Fair	
Radiation-Cross-Linked PVDF	VG-95218-Type 20 to Type 23	Very Good	Fair-Good	

Voltage (V)		Conductor Options		Colors
600/1000/2500	Tin-Plated Copper	Nickel-Plated Copper / Alloy	Silver-Plated Copper / Alloy	All
450/600/1000	Tin-Plated Copper	Nickel-Plated Copper / Alloy	Silver-Plated Copper / Alloy	All
600/1000/2000*	Tin-Plated Copper	Nickel-Plated Copper / Alloy	Silver-Plated Copper / Alloy	All
1000	—	Nickel-Plated Copper	—	Black and White

Voltage (V)		Conductor Options		Colors
600/1000/1900/3000	Tin-Plated Copper	—	—	Black
1000	Tin-Plated Copper	—	—	Black
600	Tin-Plated Copper	—	—	Black
600/1000/2500	Tin-Plated Copper	Nickel-Plated Copper / Alloy	Silver-Plated Copper / Alloy	MIL-STD-681
600/1000	Tin-Plated Copper	—	—	MIL-STD-681
750/1300	Tin-Plated Copper	—	—	MIL-STD-681

Voltage (V)		Conductor Options		Colors
600/1000/1900/3000	Tin-Plated Copper	—	--	Black
600/1000/2500	Tin-Plated Copper	Nickel-Plated Copper / Alloy	Silver-Plated Copper / Alloy	MIL-STD-681
450/600	Tin-Plated Copper	Nickel-Plated Copper / Alloy	Silver-Plated Copper / Alloy	MIL-STD-681
600	Tin-Plated Copper	Nickel-Plated Copper / Alloy	Silver-Plated Copper / Alloy	MIL-STD-681
1000	—	Nickel-Plated Copper	—	White and Black
600	—	Nickel-Plated Copper / Alloy	—	Black or Red Preferred
1000	Tin-Plated Copper	—	—	Black
600	Tin-Plated Copper	—	—	Black
750/1300	Tin-Plated Copper	—	—	MIL-STD-681

## Approvals/Specifications

Specification	TE Wire and Cable Types
SAE AS81044/5 to /13	81044/x
SAE AS22759/32 to /35 and 22759/41 to /46	22759/x
NEMA WC-27500	Specific SPEC 44x and 55A parts ONLY
Defence Standard 61-12 Part 33/001 Issue 5	Specific SPEC 55D parts ONLY
Defence Standard 61-12 Part 18 - Type 1	Specific SPEC 44M and SPEC 99 ONLY
Defence Standard 61-12 Part 26 - All Types	Specific SPEC 44D ONLY
VG 95218 Parts 20, 21, 22, 23, 1000	Specific SPEC VG ONLY
NATO Stock Numbers (NSNs)	Exist for most standard constructions: check product offering
Raychem Specification SPEC 55, 55A, 55PC	Covers all base SPEC 55 products
Raychem Specification SPEC 44	Covers all base SPEC 44 products
Boeing Spec BMS13-48	Specify SPEC 55PC parts ONLY
Airbus ABS 0820 through to 0826	Specific SPEC 55K ONLY
European Space Agency 3901/012, 3901/020 and 3901/022	Specific SPEC 55 and SPEC 99 ONLY

Tel: +44(0) 1793616700 • Fax: +44(0) 1793 644304  
uksales@is-rayfast.com • export@is-rayfast.com

**www.is-rayfast.com**

2 Lydiard Fields, Swindon, Wiltshire, SN5 8UB



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Consult TE for the latest dimensions and design specifications.