



GORE™ MIL-W-81822/1A

HOOK-UP WIRE

Summary

GORE™ MIL-W-81822/1A dielectric material is a laminate of toughened polyester film and a special thermosetting adhesive. The material has outstanding mechanical durability and is particularly resistant to cold flow. Cut-through resistance of the material is so good that .004" to .007" walls easily replace as much as .010" to .020" of more commonly used insulations such as PVC, Nylon-jacketed PVC, and others.

GORE™ MIL-W-81822/1A Hook-up Wire is designed to meet or exceed specification requirements. The product line extends beyond the mil standard and includes a broad range of conductors and gauge sizes, both solid and stranded.

Because of its unusually high tensile modulus and tensile strength, GORE™ MIL-W-81822/1A insulation makes an important contribution to the tensile strength and fatigue life of an insulated wire, particularly small wires.

The uniquely tough, thin-wall properties of GORE™ MIL-W-81822/1A insulation provides cut-through protection, reduced wire size, and load sharing with the conductor.

CUT-THROUGH PROTECTION

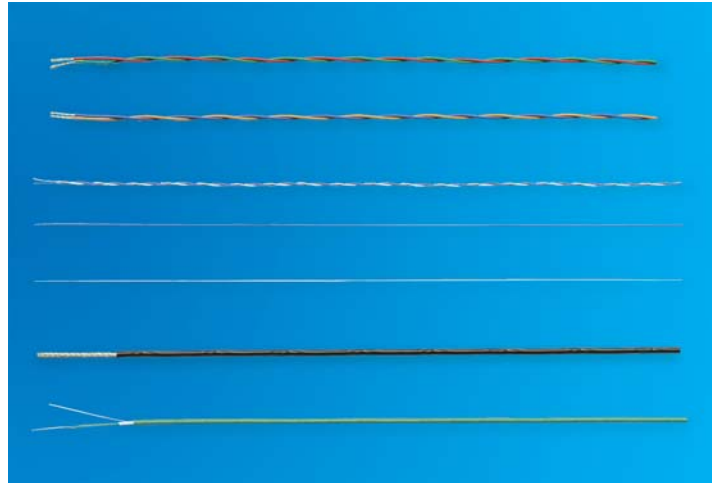
Dynamic cut-through protection of a .004" wall of GORE™ MIL-W-81822/1A insulation is twice that of a .005" wall of Tefzel® and even exceeds a .010" wall of PVC insulation.

REDUCED WIRE SIZE FOR INCREASED FLEXIBILITY

A tough primary insulation means a smaller wire, and a smaller wire means significantly more flexibility. This is because the bending ease of a wire or cable is inversely proportional to the fourth power of the radius of the cable. For example, a 50% smaller cable is 94% more flexible.

GORE™ MIL-W-81822/1A INSULATION SHARES THE LOAD WITH THE CONDUCTOR

GORE™ MIL-W-81822/1A insulation is a tough, thin polyester laminate. This high-modulus insulation has a unique load sharing ability that actually increases the strength of the conductor. Compared to PVC insulation, a .004" GORE™ MIL-W-81822/1A wall on a AWG30 wire provides a 48% greater break strength than a much thicker .010" wall of PVC.



GORE™ MIL-W-81822/1A Hook-up Wire is available in a variety of sizes.

PROPERTIES OF GORE™ MIL-W-81822/1A HOOK-UP WIRE

Construction	A solid conductor insulated with fused, helically wrapped layers of PET film
Temperature rating	105°C maximum
Conductors	Several options available. See tables on the next pages
Color coding	See tables on the next pages
Voltage rating	300 Volts
Dielectric constant	3.5 maximum (3.1 typical) at 1 MHz

Gore manufactures a broad range of standard and custom MIL-W-81822/1A Hook-up Wire. All versions benefit from Gore's 40 years of vertical integration of material development and highly evolved tape wrap process.

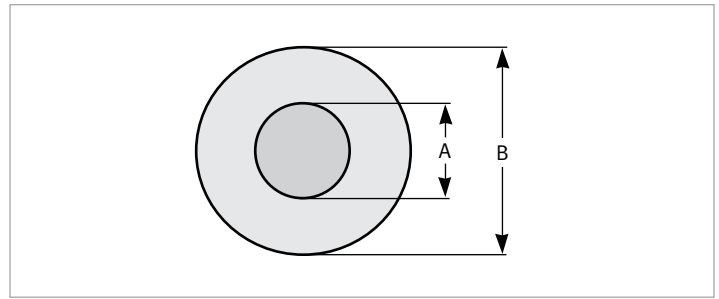
Minimum Length Requirements: For quantities of 10,000 feet and over, a minimum average length of 1000 feet and a minimum length of 100 feet will be maintained between splices.

Minimum Curl of Wire: When a thirty inch length of wire is cut from a barrel or spool, the wire, when lying unrestrained on a smooth, flat surface, shall not curl up to a diameter of less than ten inches within one minute at ambient temperatures. (Applies only to quantities of 5,000 feet and over on 16-inch reels).

Gore specializes in high-performance custom solutions and has a range of standard MIL-W-81822/1A hook-up wire. If your needs include special performance or size, please call for a quotation.

GORE™ MIL-W-81822/1A HOOK-UP WIRE

Product Class	SAE AS81822/1 (MIL-W-81822/1A)
Definition	Wire, Electrical, Solderless Wrap, Polyethylene Terephthalate-Polyester Laminated Tape Insulation, Silver Coated Solid Conductor
Voltage Rating	300 Volts
Conductor	Silver-plated OFHC (type B) is standard. Silver-plated alloy 135 (type C) is available.



GORE™ MIL-W-81822/1A HOOK-UP WIRE PART NUMBERS

Gore Part Number	AWG (Stranding)	Conductor Diameter "A"	Outside Diameter "B" Nominal	Outside Diameter "B" Tolerance	Cut-Through Load (grams)
M81822/1A-B24-*	24 (1)	0.0201"	0.034"	± 0.0015"	2600
M81822/1A-B26-*	26 (1)	0.0159"	0.0295"	± 0.0015"	2200
M81822/1A-B26V-*	26 (1)	0.0159"	0.0265"	± 0.0015"	2200
M81822/1A-B28-*	28 (1)	0.0126"	0.0265"	± 0.0015"	1800
M81822/1A-B28V-*	28 (1)	0.0126"	0.0255"	± 0.0015"	1800
M81822/1A-B30-*	30 (1)	0.010"	0.0195"	± 0.001"	1400
M81822/1A-B30V-*	30 (1)	0.010"	0.018"	± 0.001"	1400

*Color Coding: 0-black, 1-brown, 2-red, 3-orange, 4-yellow, 5-green, 6-blue, 7-purple, 8-gray, 9-white

GORE™ MIL-W-81822/1A HOOK-UP WIRE

Product Class	Tough, thin-wall hook-up wire
Voltage Rating	300 Volts
Conductor	Tin-coated copper (TPC), silver-plated copper (SPC), and silver-plated alloy 135 (SPA) are standard conductors.
Color Coding	Standard hook-up wire is supplied in solid colors to MIL-STD-104.

GORE™ MIL-W-81822/1A HOOK-UP WIRE PART NUMBERS

Gore Part Number	AWG (Stranding)	Conductor Diameter "A"	Outside Diameter "B" Nominal	Outside Diameter "B" Tolerance	Conductor Material
G05A010	12 (19/25)	0.090"	0.1005"	± 0.003"	TPC
G05B010	12 (19/25)	0.090"	0.104"	± 0.003"	TPC
G05A020	14 (19/27)	0.071"	0.0815"	± 0.003"	TPC
G05B020	14 (19/27)	0.071"	0.085"	± 0.003"	TPC
G05A030	16 (19/29)	0.057"	0.0675"	± 0.003"	TPC
G05B030	16 (19/29)	0.057"	0.071"	± 0.003"	TPC
G05A040	18 (19/30)	0.050"	0.0605"	± 0.003"	TPC
G05B040	18 (19/30)	0.050"	0.064"	± 0.003"	TPC
G04B010	20 (19/32)	0.040"	0.048"	± 0.002"	TPC
G05A050	20 (19/32)	0.040"	0.0505"	± 0.002"	TPC
G05B050	20 (19/32)	0.040"	0.0535"	± 0.0025"	TPC
G04B020	22 (7/30)	0.030"	0.038"	± 0.002"	TPC
G04B030	22 (19/34)	0.032"	0.040"	± 0.002"	TPC
G05A060	22 (7/30)	0.030"	0.0405"	± 0.002"	TPC
G05A070	22 (19/34)	0.032"	0.0425"	± 0.002"	TPC
G05B060	22 (7/30)	0.030"	0.0435"	± 0.0025"	TPC
G05B070	22 (19/34)	0.032"	0.0455"	± 0.0025"	TPC
E02A011	24 (1)	0.0201"	0.0275"	± 0.0015"	TPC

GORE™ MIL-W-81822/1A HOOK-UP WIRE PART NUMBERS (continued)

Gore Part Number	AWG (Stranding)	Conductor Diameter "A"	Outside Diameter "B" Nominal	Outside Diameter "B" Tolerance	Conductor Material
E02A021	24 (1)	0.0201"	0.0275"	± 0.0015"	SPC
E02A031	24 (1)	0.0201"	0.0275"	± 0.0015"	SPA
E02A041	24 (1)	0.0201"	0.0305"	± 0.0015"	TPC
E02A051	24 (1)	0.0201"	0.0305"	± 0.0015"	SPC
E02A061	24 (1)	0.0201"	0.0305"	± 0.0015"	SPA
E02A071	24 (1)	0.0201"	0.034"	± 0.0015"	TPC
E02A081	24 (1)	0.0201"	0.034"	± 0.0015"	SPC
E02A091	24 (1)	0.0201"	0.034"	± 0.0015"	SPA
G04B040	24 (1)	0.0201"	0.028"	± 0.002"	TPC
G04B050	24 (7/32)	0.024"	0.032"	± 0.002"	TPC
G04B060	24 (19/36)	0.025"	0.033"	± 0.002"	TPC
G05A080	24 (1)	0.0201"	0.0305"	± 0.002"	TPC
G05A090	24 (7/32)	0.024"	0.0345"	± 0.002"	TPC
G05A100	24 (19/36)	0.025"	0.0355"	± 0.002"	TPC
G05B080	24 (1)	0.0201"	0.0335"	± 0.0025"	TPC
G05B090	24 (7/32)	0.024"	0.0375"	± 0.0025"	TPC
G05B100	24 (19/36)	0.025"	0.0385"	± 0.0025"	TPC
E03A011	26 (1)	0.0159"	0.0235"	± 0.0015"	TPC
E03A021	26 (1)	0.0159"	0.0235"	± 0.0015"	SPC
E03A031	26 (1)	0.0159"	0.0235"	± 0.0015"	SPA
E03A041	26 (1)	0.0159"	0.0265"	± 0.0015"	TPC
E03A051	26 (1)	0.0159"	0.0265"	± 0.0015"	SPC
E03A061	26 (1)	0.0159"	0.0265"	± 0.0015"	SPA
E03A071	26 (1)	0.0159"	0.0295"	± 0.0015"	TPC
E03A081	26 (1)	0.0159"	0.0295"	± 0.0015"	SPC
E03A091	26 (1)	0.0159"	0.0295"	± 0.0015"	SPA
G04B070	26 (1)	0.0159"	0.024"	± 0.002"	TPC
G04B080	26 (7/34)	0.019"	0.027"	± 0.002"	TPC
G04B090	26 (19/38)	0.020"	0.028"	± 0.002"	TPC
G05A110	26 (1)	0.0159"	0.0265"	± 0.002"	TPC
G05A120	26 (7/34)	0.019"	0.0295"	± 0.002"	TPC
G05A130	26 (19/38)	0.020"	0.0305"	± 0.002"	TPC
G05B110	26 (1)	0.0159"	0.0295"	± 0.0025"	TPC
G05B120	26 (7/34)	0.019"	0.0325"	± 0.0025"	TPC
G05B130	26 (19/38)	0.020"	0.0335"	± 0.0025"	TPC
E04A011	28 (1)	0.0126"	0.020"	± 0.0015"	TPC
E04A021	28 (1)	0.0126"	0.020"	± 0.0015"	SPC
E04A031	28 (1)	0.0126"	0.020"	± 0.0015"	SPA
E04A041	28 (1)	0.0126"	0.023"	± 0.0015"	TPC
E04A051	28 (1)	0.0126"	0.023"	± 0.0015"	SPC
E04A061	28 (1)	0.0126"	0.023"	± 0.0015"	SPA
E04A071	28 (1)	0.0126"	0.0255"	± 0.0015"	TPC
E04A081	28 (1)	0.0126"	0.0255"	± 0.0015"	SPC
E04A091	28 (1)	0.0126"	0.0255"	± 0.0015"	SPA



GORE™ MIL-W-81822/1A

HOOK-UP WIRE

GORE™ MIL-W-81822/1A HOOK-UP WIRE PART NUMBERS (continued)

Gore Part Number	AWG (Stranding)	Conductor Diameter "A"	Outside Diameter "B" Nominal	Outside Diameter "B" Tolerance	Conductor Material
G04B100	28 (1)	0.0126"	0.0205"	± 0.002"	TPC
G04B110	28 (7/36)	0.015"	0.024"	± 0.002"	TPC
G05A140	28 (1)	0.0126"	0.023"	± 0.002"	TPC
G05A150	28 (7/36)	0.015"	0.0255"	± 0.002"	TPC
G05B140	28 (1)	0.0126"	0.0255"	± 0.002"	TPC
G05B150	28 (7/36)	0.015"	0.0285"	± 0.0025"	TPC
E05B011	30 (1)	0.010"	0.018"	± 0.0015"	SPC
E05B021	30 (1)	0.010"	0.018"	± 0.0015"	SPA
E05B031	30 (1)	0.010"	0.018"	± 0.001"	SPC
E05B041	30 (1)	0.010"	0.0195"	± 0.0015"	SPC
E05B051	30 (1)	0.010"	0.0195"	± 0.0015"	SPA
E05B061	30 (1)	0.010"	0.0195"	± 0.001"	SPC
E05B071	30 (1)	0.010"	0.0195"	± 0.001"	SPA
G04B120	30 (1)	0.010"	0.018"	± 0.002"	TPC
G04B130	30 (7/38)	0.012"	0.020"	± 0.002"	TPC
G05A160	30 (1)	0.010"	0.0195"	± 0.002"	TPC
G05A170	30 (7/38)	0.012"	0.0225"	± 0.002"	TPC
G05B160	30 (1)	0.010"	0.023"	± 0.002"	TPC
G05B170	30 (7/38)	0.012"	0.027"	± 0.001"	TPC
E07A110	32 (1)	0.008"	0.012"	± 0.001"	SPC
E07A120	32 (1)	0.008"	0.012"	± 0.001"	SPA
G04B140	32 (1)	0.008"	0.016"	± 0.002"	TPC
G04B150	32 (7/40)	0.0093"	0.0175"	± 0.002"	TPC
G05A180	32 (7/40)	0.0093"	0.0195"	± 0.002"	TPC
G05B180	32 (7/40)	0.0093"	0.023"	± 0.0025"	TPC
E07A130	34 (1)	0.0063"	0.0105"	± 0.0005"	SPC
E07A140	34 (1)	0.0063"	0.0105"	± 0.0005"	SPA
G04B160	34 (1)	0.0063"	0.0145"	± 0.002"	TPC
G04B170	34 (7/42)	0.0075"	0.0155"	± 0.002"	TPC

Minimum Length Requirements: For quantities of 10,000 feet and over, a minimum average length of 1000 feet and a minimum length of 100 feet will be maintained between splices. Minimum Curl of Wire: When a thirty inch length of wire is cut from a barrel

or spool, the wire, when lying unrestrained on a smooth, flat surface, shall not curl up to a diameter of less than ten inches within one minute at ambient temperatures. (Applies only to quantities of 5,000 feet and over on 16-inch reels).

Note: This product was previously sold under the Mil-ene trade name.

W. L. Gore & Associates, Inc.

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