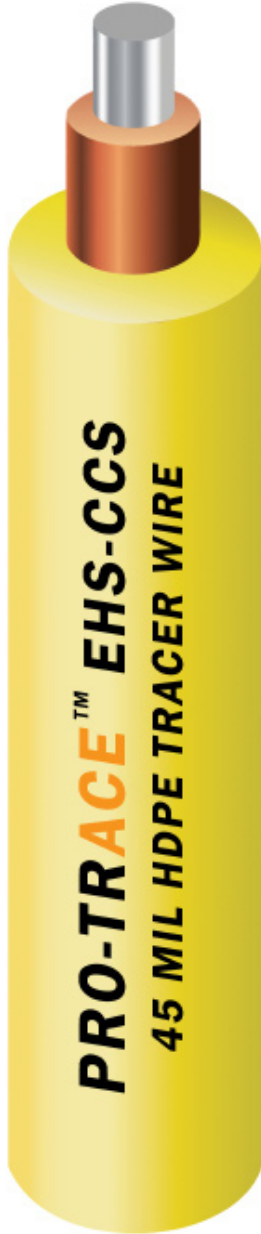


EHS-CCS PE45

PRO-TRACE™

Tracer Wire • Extra High-Strength Copper Clad Steel (EHS-CCS) Conductor • 21% IACS Conductivity • Corrosion Resistant High-Density, High Molecular Weight Polyethylene (HDPE) Insulation • Moisture, Chemical, and Oil Resistant Impact, Crush, and Abrasion Resistant • RoHS Compliant • Direct Burial Rated • 30 Volts



Applications and Information

- **PRO-TRACE™ EHS-CCS PE45** conductors are used for tracer wire applications not exceeding 30 Volts. Tracer wire is used to conductively locate buried utility lines for the gas, water, sewer, telecommunication, and electrical markets.
- **PRO-TRACE™ EHS-CCS PE45** has 5X the breakload of copper tracer wire, allowing 1 conductor to be used in directional boring applications. Equal to copper in signal tracing performance. With copper wire, 2 to 5 conductors are used to obtain the needed strength, in hopes that 1 conductor makes it through without breaking. It simply outperforms copper tracer wire.
- Considerably lower in cost and great price stability compared to copper.
- RoHS Compliant and works with lugs you already use.

Standards and References

PRO-TRACE™ EHS-CCS PE45 conductors meets or exceeds all applicable ASTM specifications, requirements of the National Electrical Code.

- ASTM B869: Standard Specification for 21% Conductivity, Hard Drawn, Copper-Clad Steel Wire
- ASTM B170: Standard Specification for Oxygen-Free Electrolytic Copper
- ASTM D1238: Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer

Construction

PRO-TRACE™ EHS-CCS PE45 is a extra high-strength, copper-clad steel conductor. A high carbon steel core, metallurgically bonded with a copper cladding, that is uniform and continuous, creating a bi-metal conductor that acts as one and is corrosion resistant. The extreme tensile strength of EHS-CCS allows 1 conductor to be used for directional boring applications making it the best performing tracer wire on the market.

PRO-TRACE™ EHS-CCS PE45 utilizes a 45 mil, high-density, high molecular weight polyethylene (HDPE) insulation. HDPE provides an excellent balance of surface smoothness, processing ease and electrical consistency. HDPE provides superior strength against underground elements that help prevent accidental breaks caused by rocks in shifting soil conditions.

Specifications

PRO-TRACE™ EHS-CCS PE45 TRACER WIRE

Tracer wire shall be a (12, 10, or 10) AWG SOLID, PRO-TRACE EHS-CCS (Extra High-Strength, Copper Clad Steel) conductor. The conductor must be 21% IACS conductivity. A 45 mil, high-density, high molecular weight polyethylene insulation shall be extruded over the conductor. Tracer wire shall be rated for direct burial use at 30 volts and RoHS compliant. Insulation color shall meet the APWA color code for identification of buried utilities. Tracer wire shall be **PRO-TRACE™ EHS-CCS PE45** as manufactured by Pro-Line Safety Products.

TABLE 1: CONDUCTOR (Physical, Mechanical and Electrical Properties)

PROPERTY	12 AWG	10 AWG	8 AWG
Conductor Type	EHS-CCS	EHS-CCS	EHS-CCS
Conductor Temper	Hard-Drawn	Hard-Drawn	Hard-Drawn
Rated Break Load	1,150 lbs	1,804 lbs	2,586 lbs
Rated Tensile Strength	224,230 psi	221,283 psi	199,430 psi
Minimum Elongation	1.0 %	1.0 %	1.0 %
Copper Thickness (% of Diameter)	3.0 %	3.0 %	3.0 %
Minimum Copper Weight (Per 1,000')	13.0 %	13.0 %	13.0 %
Nominal DC Resistance	7.565 ohms	4.757 ohms	2.991 ohms

TABLE 2: INSULATION (Physical, Mechanical and Electrical Properties)

TEST DESCRIPTION	ASTM STANDARD	TYPICAL VALUES
Density @ 23°C	ASTM D1505	0.945 g/cm ³
Melt Flow Rate	ASTM D1238	0.70 dg/10 min
Tensile Strength	ASTM D638	3,400 psi
Tensile Strength Retention	ASTM D638	90% after 48 hours @ 100°C
Tensile Elongation	ASTM D638	500%
Tensile Elongation Retention	ASTM D638	90% after 48 hours @ 100°C
Environmental Stress Cracking	ASTM D1693	0 failures @ 48 hours
Thermal Stress Cracking	ASTM D2951	0 failures @ 96 hours
Brittleness Temperature	ASTM D746	-76° C
Melting Temperature	ASTM D3418	260°C
Oxidative Induction Time	ASTM D3895	170 min @ 200°C
Dielectric Constant	ASTM D1531	2.32 @ 1 MHz
Dissipation Factor	ASTM D1531	0.00006 @ 1 MHz
DC Volume Resistivity Test @ 23°C	ASTM D257	> 1 x 10 ¹⁵ ohm-cm

PRODUCT PART NO.	CONDUCTOR		RATED BREAK LOAD	RATED TENSILE STRENGTH	HDPE INSULATION THICKNESS	NOMINAL O.D.	APPROX. WEIGHT PER 1,000 FT		STANDARD PACKAGES
	AWG SIZE	STANDARD					COPPER WEIGHT	FINISHED WEIGHT	
WEIGHTS, MEASUREMENTS AND PACKAGING									
74642XXXX	12 SOLID	21% IACS	1,150 lbs	224,230 psi	0.045"	0.171"	2.3007	26.85	1000 / 2500
74643XXXX	10 SOLID	21% IACS	1,804 lbs	221,283 psi	0.045"	0.192"	3.6592	40.38	1000 / 2500
74644XXXX	8 SOLID	21% IACS	2,586 lbs	199,430 psi	0.045"	0.219"	5.8189	59.00	500 / 1000

INSULATION COLOR & REEL SIZE				REEL & PACKAGING INFORMATION						
COLOR	500' REEL	1000' REEL	2500' REEL	SIZE	LENGTH	FLANGE	TRAVERSE	MATERIAL	CARTON QTY	PALLET QTY
BLACK	XXXXX0132	XXXXX0141	XXXXX0147	12 AWG	500	6.5"	9.0"	PLASTIC	2 x 500	90,000 FT
BLUE	XXXXX0232	XXXXX0241	XXXXX0247		1000	10.0"	7.0"	WOOD	BULK	96,000 FT
GREEN	XXXXX0532	XXXXX0541	XXXXX0547		2500	12.0"	12.0"	WOOD	BULK	90,000 FT
ORANGE	XXXXX0632	XXXXX0641	XXXXX0647	10 AWG	500	10.0"	7.0"	WOOD	BULK	60,000 FT
PURPLE	XXXXX0832	XXXXX0841	XXXXX0847		1000	12.0"	6.0"	WOOD	BULK	60,000 FT
RED	XXXXX0932	XXXXX0941	XXXXX0947		2500	14.0"	10.0"	WOOD	BULK	67,500 FT
WHITE	XXXXX1132	XXXXX1141	XXXXX1147	8 AWG	500	10.0"	7.0"	WOOD	BULK	40,000 FT
YELLOW	XXXXX1232	XXXXX1241	XXXXX1247		1000	12.0"	9.0"	WOOD	BULK	36,000 FT
					2500	16.0"	10.0"	WOOD	BULK	45,000 FT



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PRO-LINE
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