



Pro-Trace® HDD-CSS PE45 / PE50 Tracer Wire Fact Sheet

Part# 7464X.XXXX (X = Variable Information)



Pro-Trace HDD-CCS (Horizontal Directional Drilling - Copper Clad Steel) is used for tracer wire systems to conductively locate buried utility lines for the gas, water, sewer, telecom, and electrical markets. It boasts 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. HDD-CCS has almost 700% the break load of copper, which allows 1 wire to be installed in critical installations. Our PRO-TRACE® HDD-CCS PE50 is our 4 AWG stranded wire with the most extreme break load available and designed for pipe bursting and the most challenging of bore shots.

DESCRIPTION:

- Equal to copper in signal-tracing performance
- For use in Directional Boring | Pipe Bursting
- Available gauges: 4AWG (Stranded) | 8AWG | 10AWG | 12AWG | 14AWG
- Available reel sizes: 500' | 1,000' | 2,500' | 5,000'
- Available insulation thickness: 45 mil (600v) HDPE | 50 mil (600v, Stranded Wire) HDPE
- Insulation colors: Red | Yellow | Orange | Green | Blue | Purple | White | Black | Brown
- RoHS Compliant and works with connectors you already use

STANDARDS & REFERENCES:

Pro-Trace HDD-CCS meets or exceeds all applicable UL Standards, ASTM specifications, and requirements of the National Electrical Code.

- ASTM B1010/B1010M: Specification EHS Copper Clad Steel in Tracer Wire Applications
- ASTM B170: Specification for Oxygen-Free Electrolytic Copper
- ASTM D1248: Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable

CONDUCTOR (Physical, Mechanical and Electrical Properties)					
	14AWG	12AWG	10AWG	8AWG	4AWG-Str
Conductor Type	EHS-CCS (Extra High Strength Copper Clad Steel)				
Conductor Temper	Hard-Drawn				
Steel Grade	AISI 1055				
Copper Grade	UNS C10200				
Break Strength (lbs)	725	1,330	1,940	2,785	4,705
Elongation (ASTM B869)	≥ 1.0%				
Copper Thickness (% of Dia.)	3.0 %				
Copper Weight (Per 1,000')	13.0 %				
Nominal DC Resistance (ohms)	12.024	7.562	4.756	2.991	1.277

INSULATION (Physical, Mechanical and Electrical Properties)		
Density @ 23°C	ASTM D1505	0.945 g/cm ³
Melt Flow Rate	ASTM D1238	0.70 g/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 @ 23°C	ASTM D257	> 1 x 10 ¹⁵ ohm-cm