



**TRIDENT**  
SOLUTIONS®

# Pro-Trace® HDD-CCS PE45 / PE50 Tracer Wire

## Spec Sheet

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



### DESCRIPTION:

- High-carbon steel core metallurgically bonded with a copper cladding
- Equal to copper in signal-tracing performance
- Almost 700% the break load of copper
- Corrosion, moisture, chemical, acid, oil, impact, crush, and abrasion resistant
- 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, 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

### SAMPLE SPECIFICATION:

Tracer wire for directional boring installation shall be a 12 AWG solid, Pro-Trace HDD-CCS PE45. Conductor shall be hard-drawn, 21% IACS, copper-clad steel, utilizing a AISI 1055 high carbon steel core with minimum break load of 1,330 lbs (required to meet break load). Conductor shall be extruded with a 45 mil, high density, high molecular weight polyethylene (HMWHDPE) pursuant to ASTM D1248. Tracer wire shall be rated for direct burial use at 600 volts and RoHS compliant. Tracer wire shall be PRO-TRACE HDD-CCS PE45 as manufactured by Trident Solutions.

INSULATION (Physical, Mechanical and Electrical Properties)		
Density @ 23°C	ASTM D1505	0.945 g/cm <sup>3</sup>
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 <sup>15</sup> ohm-cm

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

### WEIGHTS, MEASUREMENTS & PACKAGING

Part Number	Product Description	Conductor O.D.	Finished O.D.	Insulation Thickness (Nominal)	Product Weight: Per 1,000'
74641.XXXX	14 AWG HDD-CSS PE45 - Directional Drilling / Boring	0.0641"	0.154"	0.045"	17.5 lbs
74642.XXXX	12 AWG HDD-CSS PE45 - Directional Drilling / Boring	0.0808"	0.171"	0.045"	26 lbs
74643.XXXX	10 AWG HDD-CSS PE45 - Directional Drilling / Boring	0.1019"	0.192"	0.045"	37 lbs
74649.XXXX	9 AWG HDD-CSS PE45 - Directional Drilling / Boring	0.1143"	0.205"	0.045"	45 lbs
74644.XXXX	8 AWG HDD-CSS PE45 - Directional Drilling / Boring	0.1285"	0.219"	0.045"	55 lbs
74646.XXXX	4 AWG STR HDD-CSS PE50 - Pipe Bursting / Critical Bores	0.213"	0.313"	0.050"	110 lbs

### LIBERTY SALES & DISTRIBUTION

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