

Technical Data Sheet **AMPCO-TRODE® 40**

Description and Application

AMPCO-TRODE® 40 manganese-nickel-aluminum bronze is available in coated electrodes, bare filler metal rod and wire for welding cast ship propellers conforming to MIL-B-21230, Alloy 2 for high resistance to corrosion, erosion and cavitation. AMPCO-TRODE® 40 also exhibits good ability to join dissimilar metals.

AMPCO-TRODE® 40 Coated

Limiting Chemical Composition,

% (deposited weld metal)

Copper*	Balance
Aluminum	7.0-8.50
Iron	2.0-4.0
Nickel	1.5-3.0
Manganese	11.0-14.0
Silicon	1.5 max.
Others	0.50 max.

*including silver

Mechanical Properties

(Nominal all-weld metal values)

Tensile Strength, ksi	95 (655 MPa)
Yield Strength, ksi	56 (386 MPa)
Elongation, % in 2" (51 mm)	27
Reduction of Area, %	38
BHN (3000kg.)	
1/4" (6.4 mm) deposit	185

Specifications

AWS A5.6 Class E CuMnNiAl
ASME SFA 5.6 Class E CuMnNiAl

Typical Applications

Ship propellers
Marine components
Welding cast iron
Joining dissimilar metals

AMPCO-TRODE® 40 Bare

Limiting Chemical Composition,

% (filler metal)

Copper*	Balance
Aluminum	7.0-8.50
Iron	2.0-4.0
Nickel	1.5-3.0
Manganese	11.0-14.0
Others	0.50 max.

*including silver

Mechanical Properties

(Nominal all-weld metal values)

Tensile Strength, ksi	110 (759 MPa)
Yield Strength, ksi	67 (462 MPa)
Elongation, % in 2" (51 mm)	27
Reduction of Area, %	37
BHN (3000kg.)	
1/4" (6.4 mm) deposit	217

Specifications

AWS A5.7 Class ER CuMnNiAl
ASME SFA 5.7 Class ER CuMnNiAl

*Hardness will vary depending on quality of the weld and experience and knowhow of the welder.

