

Technical Data Sheet **AMPCO-TRODE® 46**

Description and Application

AMPCO-TRODE® 46 nickel-aluminum bronze spooled wire, bare rod and coated electrodes were developed for the welding of cast and wrought nickel-aluminum bronze. AMPCO-TRODE® 46 is also recommended for weld repairing NiBral boat propellers.

AMPCO-TRODE® 46 Coated

Limiting Chemical Composition,

% (deposited weld metal)

Copper*	Balance
Aluminum	8.50-9.50
Iron	3.0-6.0
Nickel	4.0-6.0
Manganese	0.50-3.50
Silicon	1.5 max.
Others	0.50 max.

*including silver

Mechanical Properties

(Nominal all-weld metal values)

Tensile Strength, ksi	99 (683 MPa)
Yield Strength, ksi	58 (400 MPa)
Elongation, % in 2" (51 mm)	25
Reduction of Area, %	22
BHN (3000kg.)	
1/4" (6.4 mm) deposit	187

Specifications

AWS A5.6 Class E CuNiAl

ASME SFA 5.6 Class E CuNiAl

Typical Applications

Ship fittings	Ship propellers
Power plant valves	Piping systems
Intake screens	Welding AMPCO® 483
Welding AMPCO® 45	
Oil recovery pumps	
Propeller gear housings	
Marine propulsion systems	

AMPCO-TRODE® 46 Bare

Limiting Chemical Composition,

% (filler metal)

Copper*	Balance
Aluminum	8.50-9.50
Iron	3.0-5.0
Nickel	4.0-5.50
Manganese	0.60-3.50
Silicon	0.10 max.
Others	0.50 max.

*including silver

Mechanical Properties

(Nominal all-weld metal values)

Tensile Strength, ksi	104 (718 MPa)
Yield Strength, ksi	59 (407 MPa)
Elongation, % in 2" (51 mm)	23
Reduction of Area, %	22
BHN (3000kg.)	
1/4" (6.4 mm) deposit	196

Specifications

AWS A5.7 Class ER CuNiAl

ASME SFA 5.7 Class ER CuNiAl

*MIL-E-23765/3A Type MIL-CuNiAl

*Note: A weld test is required on each Heat/lot of material to conform to MIL-E23765/3A

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

