

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.

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 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

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

