
 <small>A JOULON COMPANY</small>	<b>SARA SAE ENGINEERING SPECIFICATION</b>		
	<b>Section: SES 26 – 780</b>		
	<b>Issue: “A”</b>	<b>Rev No: “1”</b>	
	<b>Eff. Date: 02-12-2017</b>	<b>Page: 1 of 3</b>	

**BRASS-NAVAL 18KSI (124 MPA) HO2 TEMPER BAR, ROD, AND  
MILL SHAPES, SUBSEA COMPATIBLE FOR SHEAR PIN**

Rev	Reason of Change	Date	Made By	Reviewed By	Approved By	Status
0	Initial release	24-07-2014	ALOK	DPR	KCR	Released
1	Reduction area & hardness value added in Table 2	2-12-2017	MN	AS	KKD	Released

**Summary:**

This specification covers corrosion resistant naval brass (UNS C46400). This specification shall apply to mill shapes, plates, and bars with diameters and thicknesses less than 3”.

	<b>SARA SAE ENGINEERING SPECIFICATION</b>	
	<b>Section: SES 26 – 780</b>	
	<b>Issue: “A”</b>	<b>Rev No: “1”</b>
	<b>Eff. Date: 02-12-2017</b>	<b>Page: 2 of 3</b>

## 1.0 Scope

This specification covers corrosion resistant naval brass (UNS C46400). This specification shall apply to mill shapes, plates, and bars with diameters and thicknesses less than 3”.

## 2.0 Reference Specifications

<b>Documents</b>	<b>Descriptions</b>
ASTM B21	Standard specification for Naval Brass Rod, Bar and shapes
BS 2874	Specification for Copper and Copper Alloy Rods and Sections (other than forging stock)

## 3.0 Chemical Composition

The chemical composition shall conform to one of the following:

	<b>ASTM B21 Alloy 464</b>	<b>BS2874 CZ112 -----</b>
Copper.....	59.00-62.0%	61.0-66%
Lead. Max.....	0.20%	-
Iron, max.....	0.10%	-
Tin.....	0.50-1.0%	0.9-1.5%
Zinc.....	Reminder	Reminder


## 4.0 Mechanical Properties

The material shall meet the mechanical properties listed in Table 2, irrespective of any industry standard followed for chemistry. Mechanical properties verification shall be obtained from a coupon or test block whose size shall be approximately the maximum thickness of the production material. The test coupon shall accompany the production material during heat treatment.

Table 2: Mechanical Requirements. (All are minimums unless otherwise specified)

Tensile Strength	50,000psi (344 MPa)
Yield Strength (0.2% offset)	18,000 psi (124 MPa)
Elongation in 2" or 4D	20%
Reduction of area	35%
Hardness <sup>1</sup>	60-80 HRB

<sup>1</sup>The reduction of area and hardness values not required to be reported.

	<b>SARA SAE ENGINEERING SPECIFICATION</b>	
	<b>Section: SES 26 – 780</b>	
	<b>Issue: “A”</b>	<b>Rev No: “1”</b>
	<b>Eff. Date: 02-12-2017</b>	<b>Page: 3 of 3</b>

## 5.0 Heat Treatment

Material shall be heat treated in a condition to meet the mechanical properties given in Table 2.

## 6.0 Weld Repair

Weld repair of this material is not permitted.

## 7.0 Markings

Material shall be identified with the heat number in a non-machined surface.

## 8.0 INSPECTION

Material shall be inspected and free of defects that would be detrimental to the intended service.