

**TIRED OF GIVING-UP STRENGTH FOR CORROSION RESISTANCE?**

(Quit using stainless grades like 304 and 316)

**TIRED OF GIVING-UP CORROSION RESISTANCE FOR STRENGTH?**

(Quit using stainless grades like 410, 416 and 17-4PH)

**TIRED OF STRAIGHTNESS PROBLEMS?**

(Get rid of stainless that “moves & walks” during machining)

**TIRED OF PARTS THAT GALL & WON'T COME APART?**

(Get rid of stainless that seizes and tears on dis-assembly)

**Nass 45** provides a high degree of corrosion resistance; like a 316 stainless. Strength levels are near those of hardened 4340.

**Nass 45** is much easier to machine than 300 series stainless grades. It is not gummy, and it will not “walk and move” when cutting keyways or machining.

**Nass 45** is available in two surface finishes; precision close tolerance TG&P, and Fine Turned Oversize (the size will make the size).

Inquire on: Metric Sizes, Special Diameter Tolerances, Sizes Made to Your Specifications.

**Nass 45** has been tested and proven to provide significant increase to service life in the following field applications: marine environments, pulping operations, pharmaceutical, food processing, petrochemical, and manufacturing.

Consider as a replacement where the following stainless grades are used: 303, 304, 304L, 316, 316L, 317, 317L, 410, 416, and PH grades.

Product is crated to protect finish and straightness.



## Typical Physical Properties\*

Hardness.....	258/294 BHN
Tensile Strength.....	140,000 P.S.I.
Yield Strength.....	108,000 P.S.I.
Charpy “V” Notch Impact.....	105 @ 70°F
Elongation .....	24%
Reduction of Area.....	65%

\*Based on ½” Diameter Specimen

## Typical Straightness Standard\*

Pump Shaft Straightness = .005” in the first 5 feet, plus .0015” / for each additional foot.

\*subject to variance if small dia. long length

## Agency Compliance

NACE MR-01-75-97 Rev.	FDA
API-6A	USDA
AMS-5763 (chemistry only)	

### Available Sizes

1/4"	1-1/4"	2-9/16"	5"
5/16"	1-5/16"	2-11/16"	5-1/2"
3/8"	1-3/8"	2-3/4"	6"
7/16"	1-7/16"	2-15/16"	6-1/2"
1/2"	1-1/2"	3"	6-3/4"
9/16"	1-9/16"	3-1/4"	
5/8"	1-5/8"	3-3/8"	
11/16"	1-3/4"	3-7/16"	
3/4"	1-15/16"	3-1/2"	
7/8"	2"	3-3/4"	
15/16"	2-3/16"	3-15/16"	
1"	2-1/4"	4"	
1-1/8"	2-7/16"	4-7/16"	
1-3/16"	2-1/2"	4-1/2"	

\*Diameters smaller than 7/8" round may be modified due to production restrictions. Inquire on available lengths.  
INQUIRE ON METRICS-FORGINGS-SPECIAL SIZES

### Typical (TG&P) Diameter Tolerances

Up to 1-1/2" Rd	(+.000"/-.001")
Over 1-1/2" Rd to 3-1/2" Rd	(+.000"/-.002")
Over 3-1/2" Rd to 4-1/2" Rd	(+.000"/-.003")
Over 4-1/2" Rd to 5-1/2" Rd	(+.000"/-.004")
Over 5-1/2" Rd and Above	Per Application

### Stock Lengths

Random Lengths Up To 30 Ft  
Custom "Cut-To-Length"

### Typical Applications

Agitator Shafts	Line Shafts	Gears
Bolts	Pump Shafts	Journals
Fan Shafts	Spindles	Mixer Shafts

### Service Temperature

To maintain the unusually high degree of toughness, service temperature should be limited to 800°F, constant, 1200°F intermittent.

### Advantages of Nass 45

- EXCELLENT CORROSION RESISTANCE
- HIGH PHYSICAL STRENGTH
- NON-GALLING
- HIGH AND LOW TEMPERATURE SERVICE
- DOUBLE STRESS RELIEVED
- PUMP SHAFT QUALITY
- BETTER MACHINABILITY – NOT GUMMY

**Nass 45** is a field proven alternative to most Austenitic Stainless grades. Commercial Austenitic Stainless may provide excellent corrosion resistance but lacks strength. Ferritic, or Martensitic stainless grades may provide adequate strength, but fail due to insufficient corrosion resistance. **Nass 45 provides both excellent corrosion resistance and high strength.**

**Nass 45** is a solution treated precipitation hardening martensitic stainless alloy with chemical modification for increased resistance to corrosive attack and fatigue failure.

**Nass 45** provides improved Machinability with less distortion during machining. Each bar is "High Temperature Double Stress Relieved" to deliver a shaft virtually free of internal stress (our standard rolling practice).

#### MACHINABILITY

Approximately 50%. Utilize carbide, or high quality, high speed cutting tools.

#### WELDING

Weld with 630 covered electrodes, or 308L rods. (See pg. 34).

Macro AAAA (ASTM E340/E381)  
Mag Particle Inspected to AMS 2303  
AOD Refined

**Past Protected Trade Name Of Pyramid Steel Company – Petro Chem<sup>®</sup>**