

DATA SHEET

ASC2250™ LDX

**LEAN DUPLEX STAINLESS STEEL
BEARING-FIT, TGP SHAFTING**



Associated Steel Corporation

Features

- Corrosion Fatigue Resistance
- Up to 3 Times the Strength of Type 316L
- Improved Machinability
- Resistance to Stress Corrosion Cracking (SCC)

Industrial Applications

- Pulp and Paper Mills
- Chemical Manufacturing
- Waste Water Treatment
- Potable Water Processing
- Dairy (USDA Approved)
- Energy and Natural Gas

*Upgrade for 303, 304L, 316L, 410, and 416 stainless in most applications.
Consider as a cost-effective substitute for 2205 or other duplex stainless steels.*

High Performance, Micro-Alloyed, Lean-Duplex Stainless Shaft

General

Associated Steel Corp. presents ASC2250 LDX, LEAN DUPLEX Stainless Shafting.

Better corrosion resistance, in most applications, than; 304, 316, 410, and 416.

ASC2250 LDX is a true Duplex grade, exhibiting equal parts Austenite and Ferrite. This grade provides the excellent corrosion resistance of an Austenitic Stainless. Further, ASC2250 LDX provides greater resistance to Stress Corrosion Cracking (SCC), in Sulfide and Chloride environments, than 410 and 416.

Mechanical Properties

Brinell Hardness	290 BHN max.
Tensile Strength	94,000 P.S.I. min.
Yield Strength	65,000 P.S.I. min.
Elongation in 2"	30%

USDA Certification

ASC2250 LDX has recently received USDA approval for Dairy processing, (3-A format for sanitary and practice standards.

National Sanitation Foundation

Approved for drinking water applications according to ANSI/NSF 61.

ASC2250 LDX has already developed a strong customer base in; Pulp & Paper, Refinery Service, Pharmaceuticals, Food Service, Meat and Poultry Processing, as well as in Energy and Natural Gas production.



Stock Sizes

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

Metric Sizes

20 MM	25 MM	30 MM	40 MM	50 MM
60 MM	70 MM	80 MM	90 MM	

Diameter Tolerances

Bearing Fit – TG&P Only..... (-.0005"/-.0015")

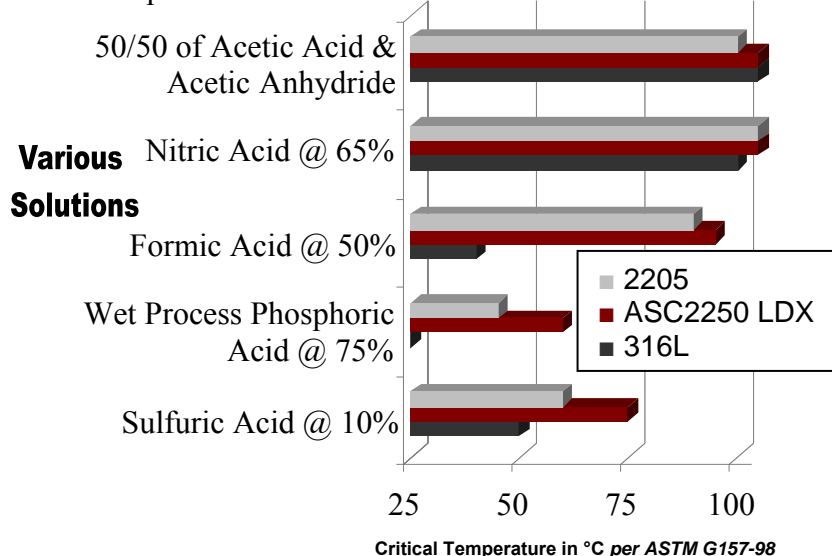
ASC2250 LDX is inventoried in two surface finishes; **TG&P Bearing Fit Tolerance**, and **Semi-Finished Oversize**, for finish machining at your facility.

Note: Semi-Finished Oversize will finish to the size; 1-1/2" O.S. diameter will finish to 1-1/2" TG&P.

WE STOCK LONG BAR LENGTHS FOR CUT-TO-LENGTH OPTIONS THAT OTHER STAINLESS HOUSES CANNOT SUPPLY.

General Corrosion Resistance

Higher Critical Temperature shows equal or superior general corrosion resistance when ASC2250 LDX is compared to other common stainless steels.



High Performance, Micro Alloyed, Lean-Duplex Stainless Shaft

Advantages

When you specify ASC2250 LDX, you get:

- Stress Corrosion Cracking (SCC)* Resistance
- Pitting Resistance
- Crevice Corrosion Cracking Resistance
- Intercrystalline Corrosion Resistance
- Erosion/Corrosion Resistance
- Corrosion Fatigue Resistance
- Up To 3 Times The Strength Of Type 316L
- Improved Machinability
- High Energy Absorption
- Low Thermal Expansion

IMPROVED SERVICE LIFE WHERE 316L HAS BEEN SUCCESSFULLY USED.

Stress Corrosion Cracking (SCC)

The duplex grain structure of ASC2250 LDX, with its continuous Ferritic phase means this product is much less sensitive to stress corrosion cracking (SCC). Austenitic stainless grades, such as 304 and 316 are more susceptible to SCC.

Where sulfide stress cracking and stress corrosion cracking resistance in sour oilfield environments are required, ASC2250 LDX would be an excellent consideration.

U-Bend Testing

{in a 40% CaCl₂ boiling solution (100°C) for 500 hours}

	Longitudinal / Transverse
ASC2250 LDX	No SCC (after 500 hours)
304L	SCC Cracking (< 150 hrs)

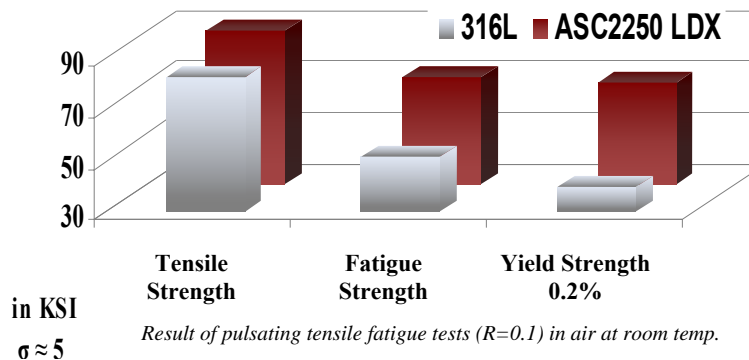
Corrosion Fatigue

ASC2250 LDX resists fatigue failure in corrosive environments due to its unique combination of high strength and resistance to corrosion.

Resists Fatigue Failure

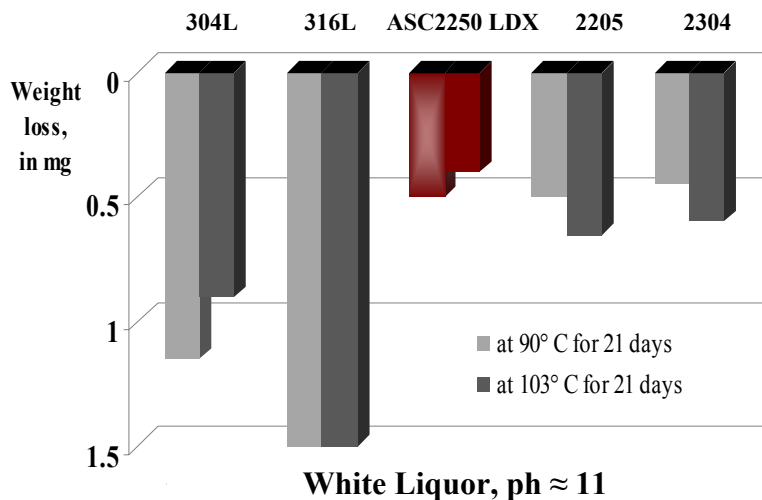
ASC2250 LDX shafting has been evaluated (pulsating tensile fatigue) at two million cycles with a probability of rupture listed at 50%.

Fatigue, Pulsating Test



Caustic Solution Corrosion

Testing in simulated “white liquor” shows less weight loss and superior corrosion resistance when ASC2250 LDX is compared to other common stainless steels.



ASC2250 LDX Typical Chemistry

Cr	Ni	Mn	Mo	N
22.0	2.0	5.0	.6 max	.30
C	Si	Cu	Ph	S
.04 max	1.0	.1/.8	.04	.03

Meets the following standards:

UNS S32101, ASTM A276 and A479, ASME SA479 and ASME VIII Section II Code Case 2418

High Performance, Micro Alloyed, Lean-Duplex Stainless Shaft

General Welding Data

Gas Tungsten arc TIG (GTAW)	
Shielded metal arc (SMAW)	
Gas metal arc (GMAW)	
Flux-cored arc (FCW)	
Submerged arc (SAW)	
Plasma arc (PAW)	

Resists the negative effects of localized corrosion in welding, at the heat affected zone.

Request detailed welding information.

Welding Tips

No pre-heat required. Cool between passes (below 300°F). Filler metal suggested but not required. Post weld anneal not required. If post-weld annealing is accomplished, follow with a rapid water quench to prohibit re-forming of the intermetallic phase.

When using GTAW or PAW, consider the adding of nitrogen in the shielding/purging gas to ensure optimum pitting resistance. Recommended Fillers: LDX2101 from Avesta Welding or 2209.

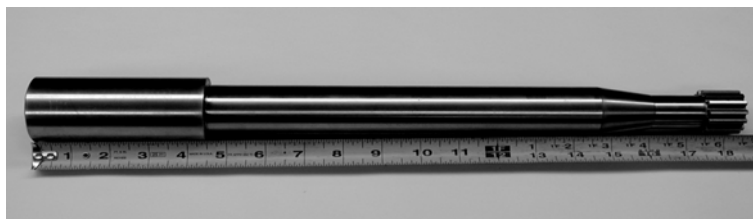
General Fabrication Data

Machining – Excellent machining characteristics when compared to type 304 or 316L stainless. Superior machinability to most Duplex grades.



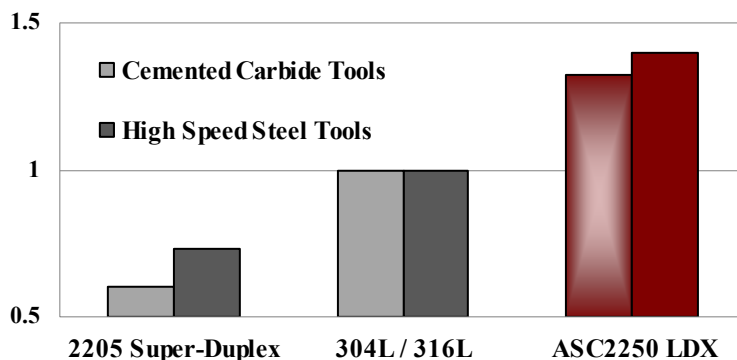
Associated Steel Corporation offers the following machining services available from your prints, sketches, and/or used parts:

- Broaching
- Chamfering
- Counter-Sinking
- Counter-Boring
- Drilling
- Facing To Length
- Grinding
- Heat Treating
- Milling
- Polishing
- Planing
- Saw Cutting
- Tapping
- Turning On Centers



Machinability Data

Relative Machinability



Drilling w/ standard method, V1000 for HSS tools

