DUPLEX STAINLESS STEEL - SS 329, UNS S32900, WNR 1.4460, AISI 329, Grade 329, AFNOR Z2 CND 27.05Az

Introduction :

Aesteiron is the prominent suppliers & exporters of 329 duplex stainless steel. We pride ourselves in offering good quality of UNS S32900 stainless steel in various finishes and sizes. Duplex SS 329 is the first duplex steel which is reflected in its higher permitted carbon content. AISI 329 Stainless Steel is designed for strength in moderate temperature and exceptional corrosion resistance. It can be used in marine application for hydraulic cylinder or anywhere where good corrosion resistance is needed. It provides very good resistance to corrosion particularly in chloride bearing environment. And it gives extra resistance to stress corrosion, pitting corrosion, fatigue corrosion. It is characterized by hardness, plasticity & strength. It shall be welded with low heat input as possible. UNS S32900 stainless steel has slightly lower alloy content than UNS S32205. It exhibits brittleness in high temperature between 300 – 900 °C. It can be welded through welding consumables.

Products Available in forms :

- DUPLEX STAINLESS STEEL - SS 329, UNS S32900 Plates
- DUPLEX STAINLESS STEEL - SS 329, UNS S32900 Pipes
- DUPLEX STAINLESS STEEL - SS 329, UNS S32900 Round Bar
- DUPLEX STAINLESS STEEL - SS 329, UNS S32900 Tube
- DUPLEX STAINLESS STEEL - SS 329, UNS S32900 Flanges
- DUPLEX STAINLESS STEEL - SS 329, UNS S32900 Wire
- DUPLEX STAINLESS STEEL - SS 329, UNS S32900 Fittings

Standard Available in forms :

- ASTM A240 / ASME SA240
- ASTM A268 / ASME SA268
- ASTM A789 / ASME SA789
- ASTM A790 / ASME SA790
- ASTM A511 / ASME SA511

Chemical Composition

	TYPE 329	WNR 1.4460	UNS S32900	AISI 329	GRADE 329H	AFNOR Z2 CND 27.05Az
Carbon	0.08max	0.08max	0.08max	0.08max	0.08max	0.08max
Iron	Bal	Bal	Bal	Bal	Bal	Bal
Manganese	1.0max	1.0max	1.0max	1.0max	1.0max	1.0max
Silicon	0.75max	0.75max	0.75max	0.75max	0.75max	0.75max
Sulphur	0.03max	0.03max	0.03max	0.03max	0.03max	0.03max
Phosphorus	0.04max	0.04max	0.04max	0.04max	0.04max	0.04max
Chromium	23.0-28.0	23.0-28.0	23.0-28.0	23.0-28.0	23.0-28.0	23.0-28.0
Nickel	2.5-5.0	2.5-5.0	2.5-5.0	2.5-5.0	2.5-5.0	2.5-5.0
Molybdenum	1.0-2.0	1.0-2.0	1.0-2.0	1.0-2.0	1.0-2.0	1.0-2.0

Mechanical Properties

	TYPE 329	WNR 1.4460	UNS S32900	AISI 329	GRADE 329H	AFNOR Z2 CND 27.05Az
Tensile Strength (Mpa)psi, min	725(10500)	725(10500)	725(10500)	725(10500)	725(10500)	725(10500)
0.2% Yield Strength (Mpa)psi, min	550(79800)	550(79800)	550(79800)	550(79800)	550(79800)	550(79800)
Elongation in 2" %	25min	25min	25min	25min	25min	25min
Reduction in Area, %	-	-	-	-	-	-
Hardness, Brinell	230	230	230	230	230	230

Applications:

- Heat exchangers
- Chemical tanks
- Refineries
- Shafts (Marine) pressure vessel parts
- Flanges, Fittings & Pipes for the Oil and Gas Industries
- Offshore Technology
- Paper Industry
- Compressor parts
- Seawater desalination plants

Features

- One of the most widely used precipitation hardening grades in the business.
- While soft and ductile in the solution annealed condition, it is capable of high properties with a single precipitation or aging treatment.
- Characterized by good corrosion resistance, high harness, toughness and strength.

Machinability

- Long, gummy chips characterize this alloys machinability.
- It can be machined in the annealed condition, however condition H1150M will yield best results.
- Post machining solution treatment of parts will be required prior to final hardening if machining in this condition.

Heat Treatment

- CONDITION A--Soak at 1900 F (1038 C) for 30 minutes and cool below 60 F (16 C) for complete martensite transformation.
- CONDITION H 950- Treat Condition A material at 900 F(482 C) for 1 hour, air cool..
- CONDITION H925, H1025, H1075, H1100, H1150- Soak solution treated material for 4 hours at specified temperature, air cool,
- CONDITION H1150M- Soak solution treated material at 1400 F (760 C) for 2 hours, air cool, then re-heat to 1150 F (620 C) for 4 hours and air cool.

Welding

- Successfully welded by common fusion and resistance methods, this alloy should not be joined by oxyacetylene welding.
- AWS E/ER630 filler metal is recommended if required.

Forging

- Soak for 1 hour at 2150 F (1177 C) prior to forging.
- Do not work below 1850 F (1010 C).
- Post-work solution treatment is required prior to final hardening.

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