HONGCHEN METAL
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PRODUCT SPECIFICATIONS · PIPE

Hastelloy C-22 Pipe

Chemical composition, mechanical properties and material characteristics

Features

- Hastelloy C22 plate is made of a special alloy with excellent corrosion resistance and high temperature strength.
- It is a solid solution strengthened nickel-based alloy, mainly containing cobalt, chromium, tungsten, molybdenum and a small amount of aluminum, titanium, nitrogen and other elements.

Typical Applications

- Preferred when oxidizing chemical media dominate, including wet chlorine, bleach and oxidizing acid mixtures; often compared with C-276 for oxidizing vs reducing balance.

Product Parameters

Product Name	Hastelloy C-22 Pipe
Type	Ni-Cr-Mo-W Alloy (Hastelloy C-22)
Standard	UNS N06022; ASTM B575 / B619 / B622
Surface	Black, Bright Polished, Rough Turning, Matt Surface Treatment, No.4, BA, etc.
Delivery Condition	Annealed / solution annealed; other tempers available by agreement.
Scope of Application	Preferred when oxidizing chemical media dominate, including wet chlorine, bleach and oxidizing acid mixtures; often compared with C-276 for oxidizing vs reducing balance.
Certificate	ISO / SGS / BV and EN 10204 3.1 MTC available; third-party inspection and PMI can be arranged per purchase order.
Production Technology	Hot rolling or cold rolling / drawing according to product form; solution treatment and pickling / passivation applied where corrosion performance or surface quality require it. Seamless or welded supply routes depending on size; cut-to-length and end preparation available.
Edge Processing	Plain, beveled or threaded ends available on request; end finishing and length tolerance per order.
Outer Diameter	Round Pipe
Square Pipe	10*10mm-100*100mm
Rectangular Pipe	10*20mm-50*100mm
Wall Thickness	0.6mm-6.0mm
Length	1-6 meters, Length can be customized

Chemical Composition

C	Si	P	S	V	Cr	Mn	Fe	Co	Ni	Mo	W
0.015 max	0.08 max	0.02 max	0.02 max	0.35 max	20.0 - 22.5	0.50 max	2.0-6.0	2.5 max	Remainder	12.5 - 14.5	2.5 - 3.5

Mechanical Properties

Tensile Strength (ksi)	0.2% Yield Strength (ksi)	Elongation% in 2 inches
100	45	45

Physical Performance

	Units	Temperature in°C
Density	8.69 g/cm³	24°C
Specific Heat	0.093 Kcal/kg.C	52°
Melting Range	1357-1399°C	-
Modulus of Elasticity	205.5 KN/mm²	-
Electrical Resistivity	113.7 μΩ.cm	24 °
Coefficient of Expansion	12.4 μm/m °C	24-93°
Thermal Conductivity	10.1 w/m-° K	48°

Selection note: match grade to medium, temperature, chloride level and whether as-welded corrosion service is required.

Related Properties

Corrosion Resistance	Provides practical corrosion resistance in atmospheric exposure, fresh water, food-contact environments and many mild chemical media. Resistance drops when chlorides, reducing acids or high-temperature concentrated solutions become dominant—match the grade to the real medium, temperature and oxygen level.
Formability	Most austenitic corrosion grades form well by bending, rolling, deep drawing and stamping when tooling radii, lubrication and springback are set for the thickness and temper. Work hardening raises strength during cold work; intermediate anneal may be needed for severe multi-stage forming.
Weldability	Generally weldable with common fusion processes. For as-welded corrosive service, prefer low-carbon (L) or stabilized grades, control heat input, and specify filler that preserves corrosion resistance in the weld metal and HAZ. Post-weld cleaning and passivation improve finished performance.
Surface & Cleanliness	Final corrosion behavior is strongly affected by surface finish, free iron contamination and weld discoloration. Pickling, passivation or electropolishing after fabrication is often as important as grade selection for sanitary, marine and chemical equipment.
Selection Notes	Use molybdenum-bearing or higher-alloy variants when pitting, crevice attack or stronger chemical media are expected. Confirm product form (plate, tube, bar, wire) and heat-treatment condition against the project specification before ordering.

Material guidance for your next project

Send your grade, size and application requirements to our team.

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