HONGCHEN METAL
INDUSTRIAL METAL MATERIALS

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PRODUCT SPECIFICATIONS · PLATE

# Stainless Steel 444 Plate

Chemical composition, mechanical properties and material characteristics

### Features

- 444 stainless steel is widely popular for its excellent corrosion resistance and heat resistance.
- This stainless steel has a wide range of applications and can maintain stable performance in a variety of extreme environments.

### Typical Applications

- Intended for furnace parts, radiant tubes, exhaust hardware, kiln components and thermal processing equipment where resistance to high-temperature oxidation and scaling is the primary requirement. Continuous and intermittent temperature limits should follow the grade standard.

## Product Parameters

| | |
|---|---|
| Product Name | 444 Stainless Steel Plate |
| Type | Heat-Resistant Stainless Steel |
| Standard | ASTM, AISI, JIS, GB, DIN, EN, etc. |
| Surface | No.1 / pickled, sandblasted or shot-blasted; brighter finishes on request. |
| Delivery Condition | Annealed / solution annealed suitable for elevated-temperature fabrication. |
| Scope of Application | Intended for furnace parts, radiant tubes, exhaust hardware, kiln components and thermal processing equipment where resistance to high-temperature oxidation and scaling is the primary requirement. Continuous and intermittent temperature limits should follow the grade standard. |
| Certificate | EN 10204 3.1 MTC; high-temperature oxidation / scaling data can be referenced from grade standards on request. |
| Production Technology | Hot- or cold-rolled and annealed; formed and welded with procedures matched to the heat-resistant grade. Avoid prolonged holds in restricted embrittlement ranges unless grade data allow it. Cut-to-length, leveling, plasma / waterjet cutting and surface grinding available. |
| Edge Processing | Mill, slit or trimmed edge; final edge condition confirmed by thickness, width tolerance and downstream welding / forming needs. |
| Thickness | 0.3mm-200mm |
| Length | 2000mm, 2438mm, 3000mm, 5800mm, 6000mm, 12000mm, etc. |
| Width | 40mm-600mm , 1000mm , 1219mm , 1500mm , 1800mm , 2000mm , 2500mm , 3000mm , 3500mm , etc. |

## Chemical Composition

| C | Si | Mn | Cr | Mo | S | P |
|---|---|---|---|---|---|---|
| ≤ 0.025 | ≤ 0.6 | ≤1.0 | 17.5～19.5 | 1.75～2.50 | ≤ 0.03 | ≤ 0.04 |

## Mechanical Properties

| Tensile Strength Kb (MPa) | Yield Strength σ0.2 (MPa) | Elongation D5 (%) | Hardness |
|---|---|---|---|
| ≥414 | ≥276 | ≥22 | ≤90HRB |

## Physical Performance

| Density( g/cm³ ) | Modulus of Elasticity( Gpa ) | Coefficient of Thermal Expansion( 10 -6 /°C ) | Coefficient of Thermal Conductivity( W/m * K ) | Resistivity(Ω. mm 2 /m ) |
|---|---|---|---|---|
| 7 .80 | 200 | 10.0 | 26.8 | 0.6 |

*Selection note: separate continuous-use limits from short peak temperatures per the grade standard.*

## Related Properties

| | |
|---|---|
| **Oxidation Resistance** | Intended for furnace parts, radiant tubes, exhaust hardware and similar hot-air service where resistance to scaling is the primary requirement. Protective behavior depends on chromium level, peak temperature and whether the atmosphere is oxidizing or reducing. |
| **Temperature Capability** | Supports elevated continuous and intermittent service temperatures beyond common structural stainless. Always separate continuous-use limits from short peak excursions, and follow the grade standard for both. |
| **Weldability** | Weldable with common processes when filler chemistry and any required post-weld heat treatment match the base metal. High-alloy heat-resistant welds can be crack-sensitive if restraint and preheat / interpass control are ignored. |
| **Formability** | Can be formed by rolling, pressing and bending with conventional equipment, though higher-alloy grades need more force and careful radius control. Hot forming followed by suitable heat treatment may be preferred for heavy sections. |
| **Service Stability** | Long holds in certain intermediate temperature bands can cause embrittlement or sigma-phase formation in some grades. Review the grade’s restricted temperature ranges when planning continuous furnace duty. |

**Material guidance for your next project**

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

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