

5083 Aluminum Alloy Plate

5083 aluminum alloy plate maintains outstanding strength even after welding. It is the strongest among non-heat-treatable aluminum alloys and is renowned for its exceptional performance in extreme conditions. This alloy demonstrates excellent resistance to seawater and industrial chemical corrosion. However, it is not recommended for use in high-temperature environments.

5083 aluminum sheet is well-known in many industries for its exceptional performance under harsh conditions. This alloy is highly resistant to seawater and severe chemicals, making it perfect for automotive, shipbuilding, and railway applications. 5083 sheet aluminum has strong overall mechanical qualities, including outstanding formability and weldability.

Compared to 5052 aluminum alloy, 5083 offers higher strength and superior thermal conductivity. It retains good formability under tempering conditions thanks to its excellent ductility. 5083 aluminum is highly suitable for welding and can be further strengthened through cold working. Its excellent general corrosion resistance makes it ideal for marine applications. Additionally, it performs reliably at extremely low temperatures without becoming brittle, making it well-suited for cold environments. Due to its high strength, 5083 aluminum is also used in vehicle armor plates.

GNEE is a professional aluminum sheet supplier, offering a variety of high-quality aluminum products. Each product undergoes strict production control to ensure top performance. GNEE aluminum plates are competitively priced while delivering superior corrosion resistance.

Typical Applications of 5083 Aluminum Plate

Shipbuilding

TV towers

Drilling rigs

Transportation equipment, including metro and vehicle bodies

Mine skips and cages

Unfired welded pressure vessels

Aluminum armor and aircraft welding parts

Common Aluminium 5083 Sheet Metal Standards

Temper is the condition of an aluminum alloy after it has been treated to attain the desired mechanical properties. We have several of the most popular tempers of

5083 sheet aluminum, including:

Dimensions vary depending on the chosen temper (O, H111, or H32). Contact our staff to find the optimal size and thickness for your application's needs.

Performance Characteristics of 5083 Aluminum Plate

1. Corrosion Resistance

5083 aluminum alloy is highly resistant to corrosion, including stress corrosion cracking. Its application temperature is limited to below 65°C, and cold work should not exceed ¼ Hard to maintain performance.

2. Heat Treatment

This alloy cannot be strengthened by heat treatment. It gains significant hardness through cold working (cold rolling). Various "H" tempers are produced, with H32 (¼ Hard) and marine-grade H116 and H321 being the most common. The alloy is also available in the soft annealed Temper O condition.

3. Welding

5083 aluminum has excellent weldability and is compatible with most standard electric welding methods. Gas Metal Arc Welding (GMAW) and Gas Tungsten Arc Welding (GTAW) are widely used to produce strong structural welds.

GNEE 5083 aluminum alloy plate combines high strength, superior corrosion resistance, excellent weldability, and reliable performance in extreme environments, making it a preferred choice for marine, industrial, and defense applications.