

5083 Ultra-Wide Aluminum Plate for Tank Trucks

1 . 5083 Ultra-Wide Aluminum Plate for Tank Trucks Description

The 5083 ultra-wide aluminum plate is the industry standard for tank trucks.

At GNEE, we supply 5083 aluminum plates with widths up to 2600mm. Using ultra-wide plates means fewer weld seams, better structural integrity, and lower fabrication costs. Compared to traditional steel, 5083 aluminum is 30% lighter, allowing your customers to increase their payload capacity and improve fuel efficiency on every trip.

If you are a tank truck manufacturer, this material is designed to make your production faster and your final product more profitable.

(1) Why Choose 5083 Aluminum for Tank Trucks?

Transporting fuel, chemicals, and liquid cargo requires materials that can handle constant road vibration, pressure changes, and harsh liquids.

Historically, steel was the main material for tanker trucks. Today, 5083 aluminum alloy is the preferred alternative. It offers an excellent balance of durability, weldability, and a long service life. By switching to 5083 aluminum, trailer manufacturers can cut the dead weight of the vehicle significantly.

This directly translates to more cargo space and compliance with strict highway weight limit regulations.

Not sure which exact temper or thickness your tanker project needs?

Tell us your tank capacity and what liquid you are transporting. Our material engineers will recommend the optimal 5083 aluminum specifications to help you save costs.

(2) Core Advantages of 5083 Aluminum

When you buy 5083 aluminum plates from GNEE, you get a material built for heavy-duty transport. Here are the core benefits:

Excellent Corrosion Resistance: It easily resists diesel, gasoline, ethanol, and common industrial chemical liquids. This prevents internal rusting, avoids liquid contamination, and reduces the risk of dangerous leaks.

Lightweight Performance: With a density of only 2.7 g/cm³, it is about one-third the weight of steel. This improves the truck's fuel efficiency and maximizes payload capacity.

High Structural Strength: It easily handles constant road stress, liquid sloshing impacts, and pressure changes inside the tank.

Superior Weldability: 5083 is famous for its welding performance. It creates strong, stable weld joints with a very low risk of cracking, which is critical for tanker shell fabrication.

Low Maintenance Cost: Because it does not rust like steel, the tank body has a much longer service life and requires less surface maintenance.

Enhanced Safety: Fewer weld seams and high crack resistance mean a lower risk of hazardous material leakage, protecting the environment and the driver.

(3) Chemical composition of 5083 aluminum sheet plate

Element	Composition %
Si	0.40
Fe	0.40
Cu	0.10
Mn	0.40–1.0
Mg	4.0–4.9
Cr	0.05–0.25
Ni	–
Zn	0.25
Ti	0.15
Al	Remainder

(4) Mechanical properties of 5083 aluminum sheet plate for Tank Trucks

Temper	Thickness/mm	Tensile Strength /MPa	Specified non-proportional Tensile Strength/MPa	Elongation After Break/%	A50 mm	Bending Radius
O, H111	3.00-6.00	290-370	≥145	≥17	≥4930	1.5t
	>6.00-12.00	290-370	≥145	≥17	≥4930	4.0t
H116	3.00-6.00	305-370	≥220	≥12	-	3.0t
	>6.00-12.00	305-370	220	≥12	-	6.0t
H321	3.00-6.00	305-370	≥220	≥12	-	3.0t
	>6.00-12.00	305-370	≥220	≥12	-	6.0t

(5) Specifications of 5083 aluminum sheet plate for oil tanker

Alloy	5083
Temper	O, H111, H116, H321
Thickness	0.2-100mm
Width	200-2650mm
Length	500-16000mm
Standard	EN14286, ASTM B209, ASTM B117

(6) Available 5083 Aluminum Tempers and Their Uses

Different parts of a tank truck require different material behaviors. Choosing the right temper is important for your manufacturing process.

1. 5083-H111 (Most Recommended for Tank Body)

This is the most common temper for the main cylindrical shell of the tanker. It offers good basic strength combined with excellent formability. When your factory rolls the flat plate into a round or oval cylinder, H111 prevents cracking during the bending process.

2. 5083-H321 (For High-Stress Components)

H321 has improved resistance to stress corrosion cracking. It is slightly harder and is used for parts that bear structural loads. We recommend this for structural reinforcements, undercarriage mounts, and air inlets.

3. 5083-O (For Forming Parts)

The "O" temper means the aluminum is fully annealed. It offers maximum ductility and softness. You should use this for deep drawing parts, such as the curved tank heads (front and rear caps) and the internal wash baffles.

2 . Common Applications of 5083 aluminum plates

Our 5083 aluminum plates are highly versatile. Truck body builders use our materials to manufacture the following:

- Fuel Tanker Trucks: Safely transporting diesel and gasoline without spark risks.
- Chemical Liquid Transport Tanks: Moving industrial solvents and mildly corrosive liquids.
- Food-Grade Liquid Tanks: Transporting drinking water, fresh milk, and edible oils safely without metallic contamination.
- Internal Tank Components: Manufacturing the internal baffles that stop liquid from sloshing heavily during braking.

3 . The Manufacturing Advantage of Ultra-Wide Plates

Why do buyers specifically look for ultra-wide aluminum plates?

In standard manufacturing, if you use narrow plates, you must weld them together to create a large enough sheet to roll into a tank shell. Every weld seam takes labor time, uses welding materials, and creates a potential weak point where leaks can happen.

By using GNEE's 2650mm ultra-wide plates, you can form large sections of the tank with zero vertical seams. This gives you:

- Reduced welding labor and material costs.
- Improved sealing performance and lower leakage risk.
- Faster production efficiency in your factory.
- A cleaner, smoother appearance for the final truck.

4 . Why Choose GNEE as Your Supplier

Finding a stable tank truck aluminum supplier is critical for your production line. As an experienced Chinese supplier, GNEE offers:

- **Stable Supply:** Consistent quality for 5083-H1111, H321, and O tempers.
- **Ultra-Wide Capability:** We are one of the few suppliers that can produce plates up to 2650mm wide.
- **Certified Quality:** ISO certified production. All plates undergo strict quality inspection before shipment, and we provide official mill test certificates.
- **Custom Services:** We offer custom cutting to exact lengths and widths, reducing your scrap waste.
- **Global Experience:** We have rich export experience and currently supply truck builders in over 70 countries.

5 . Packaging & Delivery Standard

We understand that aluminum plates must arrive at your factory without scratches or moisture damage.

- **Standard Export Packaging:** Seaworthy wooden pallets designed for forklift handling.
- **Protection:** Moisture-proof paper and plastic film are wrapped around the plates to prevent water damage during ocean freight.
- **Surface Film:** Blue PVC surface protection film is available upon request to prevent scratches during your factory handling.
- ISPM15 fumigation, COO, REACH/RoHS documents available

6 . FAQ

Q1: Why is 5083 aluminum better than steel for tank trucks?

A: 5083 aluminum is about 30% lighter than steel, naturally corrosion-resistant, and requires no anti-rust paint. This improves the truck's fuel efficiency, increases the maximum cargo payload, and extends the overall lifespan of the tanker.

Q2: Which temper of 5083 is best for tanker bodies?

A: 5083-H111 is the most commonly used temper for tank shells because it provides the best balance of structural strength and bending formability for making cylinders.

Q3: What thickness is typically used for aluminum tankers?

A: The most common thickness used for the main body is between 5 mm and 8 mm, with 6 mm being the industry standard for standard fuel tankers. Tank heads and baffles may use different thicknesses.

7 . Get a Fast Quote Today

Ready to reduce your tanker weight, speed up your production, and save on fuel costs? Stop wasting money on excess material scrap and unnecessary welding.

Contact GNEE today. We supply high-quality, cut-to-size 5083 aluminum plates directly to your factory.

Send us your exact requirements:

- Thickness / Width / Length
- Temper needed (H111 / H321 / O)
- Your end application