Bisalloy

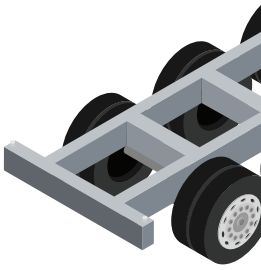
LESS WEIGHT. MORE FREIGHT.

High-strength structural steel designed to help you build lighter, load heavier and run for longer.

BISALLOY® Q700D

Engineered to deliver unbeatable strength, toughness and fabrication predictability in trailers, tippers, transport structures and more.

BUILD LIGHTER, LOAD HEAVIER, RUN LONGER.



Designed for increased payload, durability and consistent, ease of fabrication.

When you specify structural grade in a chassis, you're not just choosing steel, you're ensuring repeatable quality in your critical components. **BISALLOY® Q700D** is a Thermo-mechanical Controlled Process (TMCP) Plate steel product, offering consistent performance in transport applications, backed by comprehensive test certification and full manufacturing traceability.

Performance highlights

- High strength for weight-optimised structures
- Impact toughness at -20°C for harsh routes and cold starts
- Forming capability for folded sections and stiffeners
- Fabrication support from local Bisalloy technical resources, guides and experts
- Mill test certificates supplied to support quality assurance and specification requirements

Stronger and lighter

≥700 MPa yield strength: reduce thickness, cut tare, retain performance.

Tough in the cold

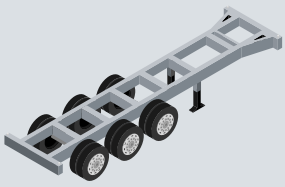
Charpy impact toughness ≥47 J at −20°C: performs year-round.

Exceptional formability

TMCP steel bends cleanly at tight radii, folded rails and stiffeners.

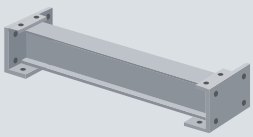
Certified performance

Mill test certificates: full traceability to manufacturing route for QA team.



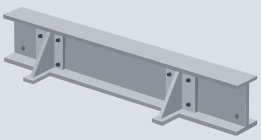
Chassis

Primary load path: rails must resist bending and torsion under payload and road shocks. High-strength structural steel lets you down-gauge weight while keeping stiffness, fatigue performance and stability across spans.



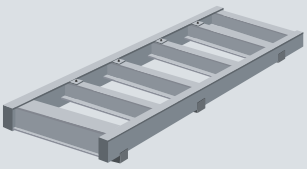
Crossmembers

Tie the rails together, control twist and buckling, and keep suspension geometry true. High-strength structural steel crossmembers deliver rigidity with less section weight, improving payload without sacrificing service durability performance



Web stiffeners

Reinforce high-stress zones around mounts and welds, preventing local web buckling without thickening the whole beam. Structural steel stiffeners add targeted strength, extending fatigue life with minimal weight penalty overall.



Subframe

Spreads cargo loads into the chassis and protects it from point loads at mounts. Structural steel delivers high strength with ductility for brackets, welds and bolted interfaces that stay aligned.

SPECIFICATIONS THAT BACK A SMARTER BUILD.

Where Q700D earns its keep

Load-carrying structure where strength-to-weight drives payload and efficiency.

- **Main beams & chassis rails:** strength-to-weight where it counts
- **Side-rails & cross members:** stiffness and durability under service loads
- **Web plates, stiffeners & folded sections:** forming performance you can use
- **Reinforcement plates:** strength without unnecessary mass
- **Any structure chasing high strength-to-weight**

Example weight calculation

Q700D gives you the strength capacity to pursue optimisation and deliver greater load-bearing capacity, lower emissions and longer service life.

For a trailer chassis using ~15–25 m² of structural plate across key load-carrying components, moving from 12 mm Grade 350 to 8–10 mm Q700D (where design checks allow) reduces thickness by 17–33%. Weight saved ≈ Area × Δt × 7850 kg/m³.

- **At 15 m² and Δt = 4 mm ≈ 471 kg**
- **At 20 m² and Δt = 4 mm ≈ 628 kg**
- **At 25 m² and Δt = 4 mm ≈ 785 kg**

Achievable reduction depends on stiffness/buckling, fatigue, joint details, welding procedure and compliance requirements.

Property	BISALLOY® Q700D
Yield strength (ReL)	≥ 700 MPa
Impact toughness	≥47 J at –20°C
Tensile strength (Rm)	770–940 MPa
Thickness range	5–25 mm
Elongation (A)	≥ 14%
Bend performance	180° at R = 1t (no visible surface cracks)
Consistency	TMCP controlled rolling and cooling

Values shown apply within the published thickness range - see Bisalloy documentation for thickness-specific test details and fabrication guidance.

"Every kg of steel you don't carry is a kg of freight you can earn."

471kg

WEIGHT SAVING

17%

REDUCED THICKNESS

FIERCE IN THE FIELD.
FRIENDLY IN THE SHOP.

TMCP processing and microalloying deliver a practical balance of strength, toughness and fabrication predictability in transport structures, while staying tough and fabrication-friendly.

Forming

Consistent folded sections

Suitable for folded rails, stiffeners and formed sections with the right inside radius, tooling and bend orientation. For repeatable results, standardise: bend direction, radius/ tool condition, edge quality (tight radii), and press-brake setup/ backgauge.

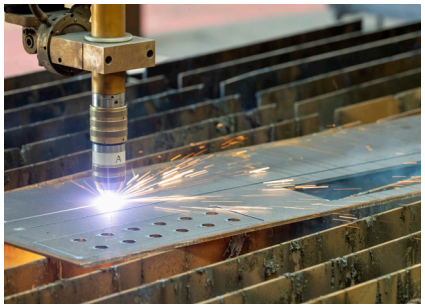
Tip: *Run a short forming trial on your thickness/tooling to confirm radius and springback before production*

Welding

Predictability and control

Designed for predictable welding, but preheat is joint- and condition-dependent. In many trailer builds it can be minimised and, in some cases, eliminated by controlling the key drivers: thickness/ restraint, hydrogen (low-hydrogen consumables + handling), heat input/interpass temperature, and fit-up/ambient conditions.

Tip: *Qualify your WPS/PQR for the joint and thickness*



Cutting

Edge quality matters

Thermal cutting can often be done without preheat on thinner sections, but outcomes depend on method/ speed, thickness, Heat Affected Zone (HAZ) control, and post-cut inspection/handling.

Tip: *Do a quick cut trial on your thickness and check the edge/ HAZ before committing parts to production.*

* Refer to Bisalloy welding and cutting guidance. Bisalloy can assist with consumable selection and parameter guidance.

GLOBAL DEPENDABILITY LOCALLY SUPPLIED.

For specifications, samples, or testing support, contact our technical team today.

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WELCOME TO BISALLOY.

Bisalloy operates on a global scale, supplying high-performance steel and innovative solutions to industries worldwide. Our headquarters and production centre in Unanderra, Australia, serve as the heart of our operations, while our international footprint extends across key markets through strategic partnerships and joint ventures.

We have established strong distribution networks in China, Thailand, and Indonesia, ensuring that our customers have access to Bisalloy's premium-grade steel wherever they operate. Our partnerships with industry-leading raw material suppliers, including BlueScope (Australia), Shandong Steel (China), Posco (South Korea), and Salzgitter (Germany), allow us to maintain the highest standards of quality and reliability.

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