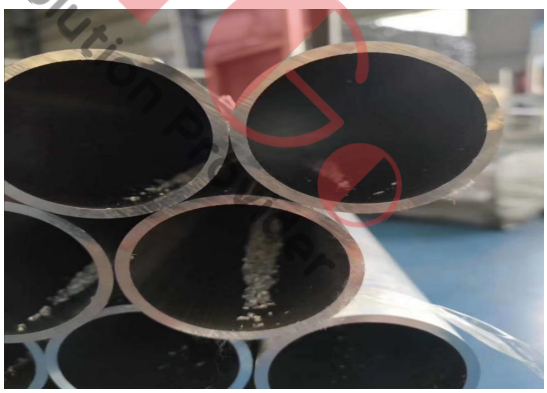
TOURGO ENGINEERING DATA SHEET

20.5” × 20.5” Plated Box Truss System

ENGINEER APPROVED ✔

EN / TÜV COMPLIANT | GLOBAL PROJECT USE



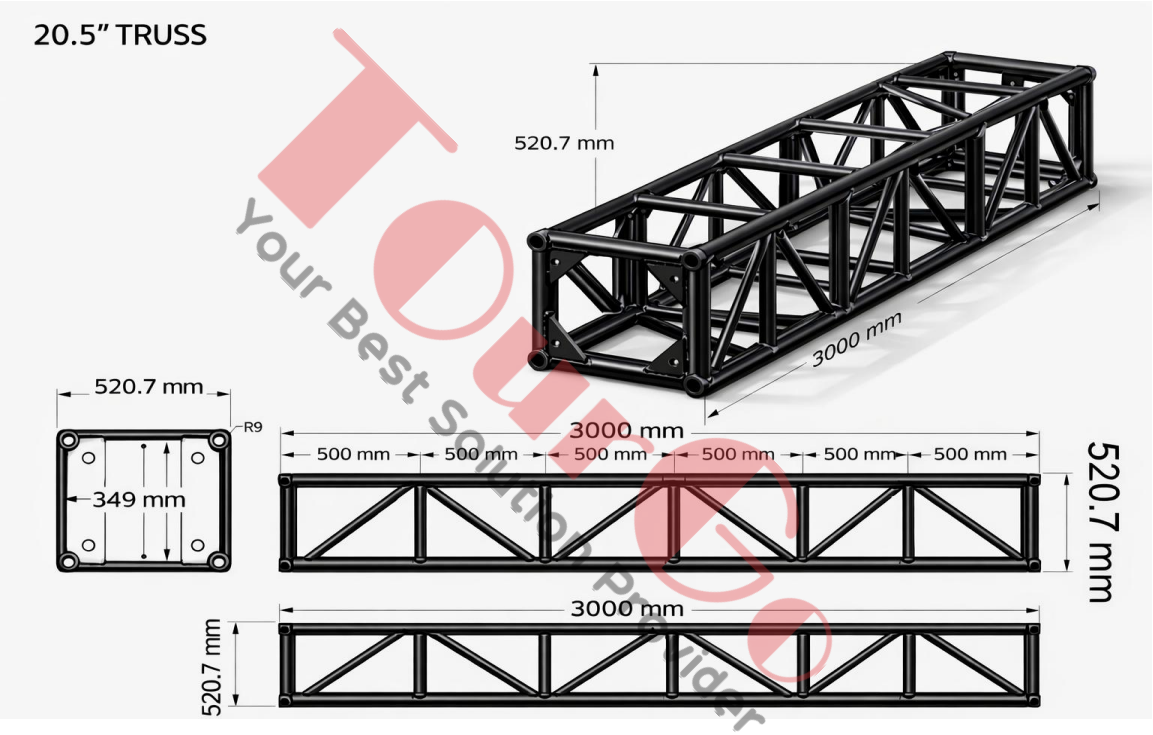
1. PRODUCT OVERVIEW

TOURGO 20.5" × 20.5" HD Plated Box Truss is engineered for heavy-duty applications including large-scale stage structures, LED walls, roof systems, and outdoor event rigging.

Designed with high-strength aluminum alloy and reinforced plate connection system, it delivers superior load capacity, structural stability, and safety performance for demanding global events.

2. TECHNICAL SPECIFICATIONS

- **Dimensions:** 20.5" × 20.5" (520 × 520 mm)
- **Main Tube:** Ø50 × 3 mm
- **Bracing Tube:** Ø30× 2 mm
- **Material:** EN AW-6082 T6 Aluminum Alloy
- **Connection:** High-strength Bolt Plate System
- **Finish:** Polished / Powder Coated (Optional)



3. STRUCTURAL PERFORMANCE BASIS

- **Standard:** EN 1999 (Eurocode 9 – Aluminum Structures)
- **Safety Factor:** 1.5
- **Deflection Limit:** L / 200

Load Type Definitions:

- **UDL – Uniformly Distributed Load**
- **CPL – Center Point Load**
- **TPL – Third Point Load**
- **QPL – Quarter Point Load**

4, ALLOWABLE LOAD TABLE (WITH DEFLECTION)

20.5" x 20.5" HD Plated Box

UNIFORMLY DISTRIBUTED LOAD				MAXIMUM ALLOWABLE POINT LOADS					
				center point LOAD		THIRD POINT LOAD		quarter point LOAD	
TRUSS SPAN	Load lbs/ft	Load lbs (kgs)	Max Defl in.	Load lbs (kgs)	Max Defl. in.	Load lbs (kgs)	Max Defl. in.	Load lbs (kgs)	Max Defl. in.
10 ft (3.05 m)	**839**	**8390** (3806)	**0.08**	**4744** (2152)	**0.07**	**3558** (1614)	**0.08**	**2372** (1076)	**0.08**
20 ft (6.09 m)	**230**	**4600** (2087)	**0.34**	**2306** (1046)	**0.27**	**1729** (784)	**0.35**	**1153** (523)	**0.32**
40 ft (12.21 m)	**97**	**2910** (1320)	**0.76**	**1464** (664)	**0.62**	**1098** (498)	**0.78**	**732** (332)	**0.73**
50 ft (15.24 m)	**51**	**1440** (658)	**1.36**	**1021** (463)	**1.13**	**765** (347)	**1.39**	**569** (161)	**2.05**

VERTICAL TOWER LOAD PERFORMANCE

Tower Height	Effective Length	Safe Axial Load	Safe Flexural Load (Mid-Span Point Load)	Application
3 m	3 m	≈ **8,000 kg**	≈ **7,800 kg**	Single section tower / short span beam
6 m	6 m	≈ **6,000 kg**	≈ **6,000 kg**	Medium tower / multi-level platform
9 m	9 m	≈ **4,200 kg**	≈ **4,200 kg**	Large backdrop tower / lighting tower
12 m	12 m	≈ **3,000 kg**	≈ **3,000 kg**	High tower structure / side lighting rig
13.72 m (45')	13.72 m	≈ **2,200 kg**	≈ **2,100 kg**	Manufacturer rated maximum height

Note: Values shown are recommended engineering estimates for static axial tower applications only.

Final allowable height and load shall be verified by a qualified engineer based on actual connection details, bracing conditions, side loads, and site requirements.

ENGINEERING CHARACTERISTICS

- **High Load Capacity:** Designed for heavy-duty stage and roof systems.
- **Rigid Plate Connection:** Provides superior structural stiffness vs spigot truss
- **Precision Welding:** TIG welded with controlled heat input
- **Load Distribution:** Optimized diagonal bracing for torsional resistance
- **Compatibility:** Can integrate with standardtyler/Tomcat truss systems (adapter required)

TESTING & QUALITY CONTROL

- Weld_inspection (visual +penetration test optional)
- Dimensional tolerance control+0.5 mm
- Load testing available upon request
- Material traceability (EN certification available