



Mega Festival Clear Span Party Tent Aluminum Double Truss NFPA 701 USA Outdoor Event Trade Show

Our Product Introduction

Basic Information

- Place of Origin: Guangdong, China
- Brand Name: EcoTentPro
- Certification: NFPA 701, CPAI-84, ASTM E84 Class A, ISO 9001:2015, IBC 2024, ASCE 7-22
- Model Number: ETP-MG4080-US
- Minimum Order Quantity: 1 Set
- Price: USD 15,500-24,000 / Set
- Packaging Details: Heavy-duty steel pallets with VCI wrap for truss sections, reinforced A-frame crates for main beams, industrial PVC bags for fabric, 40ft HQ container with professional loading plan
- Delivery Time: 25-35 working days after deposit
- Payment Terms: T/T, L/C at sight, Wire Transfer
- Supply Ability: 50 Sets per Month



Product Specification

- Tent Size (WxL): 40ft X 80ft (12.2m X 24.4m)
- Covered Area: 3,200 Sq Ft (297 M²)
- Side Height: 10ft (3.0m)
- Ridge Height: 20ft (6.1m)
- Frame: Double-Truss 3D Space Frame, 3ft Truss Depth
- Main Beam: 10" X 5" X 0.25" Aluminum 6061-T6 Box Beam
- Roof: 20oz/yd² PVC (950g/m²)
- Wind Rating: 110 Mph
- Snow Load: 30 Psf
- Bay Spacing: 10ft (8 Bays)
- Clear Span: 40ft (zero Interior Columns)
- Highlight: **aluminum double truss party tent, NFPA 701 outdoor event tent, clear span trade show tent**

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Product Description

Product Overview

The **ETP-MG4080-US Mega Festival Clear Span Tent** is our flagship large-scale structure for the American event market. Spanning an impressive 40ft * 80ft (3,200 sq ft) with a soaring 20ft ridge height, this tent employs a double-truss 3D space frame system — the same structural technology used in aircraft hangars and exhibition halls. The 40ft clear span provides a completely column-free interior capable of hosting 400+ theater-style guests, 300 banquet-style, or 40 standard 10*10' trade show booths. With a 110 mph wind rating, 30 psf snow load capacity, and full NFPA 701/CPAI-84 fire certification, this tent is engineered for the most demanding US applications: major music festivals (Coachella-style), state fair exhibition halls, FEMA disaster response shelters, touring concert venues, and large-scale corporate product launches.

Technical Specifications

Structural System	
Frame Type	Double-Truss 3D Space Frame, 3ft (0.9m) truss depth
Main Beam	10" * 5" * 0.25" (254mm * 127mm * 6.35mm) 6061-T6 Box Beam
Secondary Members	3" * 3" * 0.1875" (76mm * 76mm * 4.76mm) Web Tubes
Gusset Plates	3/8" (9.5mm) S355 Structural Steel, Hot-Dip Galvanized 100µm
Bolts	1" (M24) Grade 8 High-Tensile, Zinc-Nickel Plated
Base Plates	20" * 20" * 0.625" Steel, 100µm Hot-Dip Galvanized
Dimensions	
Width * Length	40ft * 80ft (12.2m * 24.4m)
Covered Area	3,200 sq ft (297 m²)
Side Height	10ft (3.0m)
Ridge Height	20ft (6.1m)
Bay Configuration	10ft * 8 bays on length
Fabric	
Roof	20oz/yd² PVC (950g/m²), White, Fire Retardant
Sidewalls	16oz/yd² PVC, Solid + Window Panel Options
Fire Rating	NFPA 701 Test 1 & 2, CPAI-84, ASTM E84 Class A
Performance	
Wind Rating	110 mph (ASCE 7-22, Exposure C)
Snow Load	30 psf (1.44 kN/m²)
Seismic	ASCE 7-22 Seismic Design Category D compliant
Service Life	20+ years (frame), 8-12 years (roof)

Key Advantages & Selling Points

Aircraft Hangar Technology

The double-truss 3D space frame with 3ft truss depth delivers extraordinary rigidity across the 40ft clear span. This is the same structural concept used in airport hangars — triangulated web members distribute loads so efficiently that interior columns become unnecessary, even at this scale.

110 MPH Hurricane Rated

Certified to 110 mph sustained winds per ASCE 7-22 Exposure C (open terrain). The massive 20*20" base plates with 1" grade 8 bolts create moment-resisting connections at every column. Suitable for Gulf Coast, Florida, and Atlantic seaboard deployment including named storm conditions.

3,200 sq ft Open Floor

The 40ft * 80ft clear span interior is a blank canvas. Configure as: 40 standard 10**10' trade show booths, 300+ banquet seats, 450+ theater seats, a full-size concert stage with audience area, or 8 pickleball courts. The 20ft ridge height clears production lighting rigs and video walls.

FEMA/Disaster Ready

Engineered for rapid deployment as emergency shelter. The clear span design allows flexible interior partitioning for triage, sleeping quarters, dining, and supply storage. 30 psf snow load and 110 mph wind rating mean it stays standing when communities need it most. Trusted by US disaster response organizations.

Festival Infrastructure Grade

Designed for the punishing conditions of multi-day outdoor festivals: 20oz heavy roof resists abrasion from stage rigging, 3ft truss depth handles hanging loads (lighting, sound, video walls), and the bolted steel gusset plate connections withstand repeated assembly/disassembly cycles.

Multi-Code Fire Compliant

NFPA 701, CPAI-84, AND ASTM E84 Class A — triple certification exceeds requirements for public assembly structures. Fire documentation package includes lot-specific test reports, flame spread classification letter, and template for local fire marshal submission. Accepted by fire departments in all 50 states.

Production Process



Heavy Beam Extrusion

10**5**0.25" 6061-T6 box beams extruded on 5,500-ton press with controlled cooling for uniform grain structure. Solution heat-treated at 530°C/4hr + artificial aging at 175°C/8hr. Every beam tensile tested (ASTM B557) and ultrasonically inspected for internal defects.



Precision CNC Fabrication

Beam ends faced to $\pm 0.1^\circ$ on 7-axis CNC gantry mill. All bolt holes drilled, reamed, and tapped with thread gauging. Steel gusset plates laser-cut from S355 plate and CNC-drilled. Every beam laser-etched with unique serial number for full lifecycle traceability.



Steel Protection

All steel components hot-dip galvanized at 450°C to 100 μ m minimum. Grade 8 bolts sourced from ISO 898-1 certified US-standard supplier with material certs per lot. Salt spray testing to 1,000+ hours (ASTM B117) for coastal deployment certification.



20oz Fabric Production

950g/m² PVC produced on 5m-wide calendering line with double coating for uniform thickness. Computer-nested cutting, HF welded at 27.12 MHz with 2.5" overlap. Every linear meter of seam pull-tested to 800+ lbf. NFPA 701 fire tested per production lot.



Truss Sub-Assembly & Load Testing

Truss modules pre-assembled in 10ft sections. Laser tracker survey for dimensional accuracy (± 1 mm over 40ft). Hydraulic load test on completed truss module: 150% of design load held for 4 hours with deflection monitoring. Test report included in QC dossier.



Export Packaging

Truss sections in custom steel A-frame crates. Beams palletized with VCI wrap and edge protectors. Fabric in industrial PVC bags with silica gel desiccant. Complete 40ft HQ container loading plan provided. Full US Customs documentation: NFPA 701 certs, ISPM 15, COO, commercial invoice.

Factory & Company Strength

Large-Scale Structure Manufacturing Leader

Certifications



Pre-Sales & After-Sales Service

Pre-Sales	After-Sales
SE-stamped structural calculations per project location	5-year structural warranty on frame system
3D BIM model (Revit/IFC format)	3-year fabric warranty
Site-specific wind/snow/seismic analysis	US-based critical spare parts inventory
Complete building permit documentation	Annual structural inspection service
Factory acceptance test with client witness	On-site installation supervision (US travel)
Turnkey DDP shipping with US customs clearance	24/7 emergency engineering support

Application Cases

Major Music Festivals (Coachella, Lollapalooza scale)
Trade Shows & Industry Expos
State Fair & County Fair Exhibition Halls
FEMA Disaster Relief Shelters
Auto Shows & Product Launch Events
Indoor Sports Tournaments & Events

FAQ

Q1: What's the maximum occupancy for this tent per US fire code?

Per IBC 2024 Chapter 31 and NFPA 101 Life Safety Code, the 3,200 sq ft tent can accommodate: 450+ persons standing (assembly occupancy, 7 sq ft/person), 300+ banquet-style (15 sq ft/person with tables/chairs), 200+ with a stage area. Exact occupancy depends on your exit configuration and local fire marshal determination. We provide exit path diagram templates for permit applications.

Q2: How is something this large transported and set up?

The complete tent fits in one 40ft High Cube container. Setup requires a crew of 10-12 with a telehandler or rough-terrain forklift. Timeline: Day 1-2 — frame and truss erection, Day 3 — roof tensioning, Day 4 — sidewalls and finishing. Total: 4-5 working days. We provide a dedicated factory installation supervisor for every first deployment.

Q3: Can this tent be used as a semi-permanent structure?

Yes, many clients operate these as permanent event venues. The 20+ year frame life and 8-12 year roof life make multi-year installations economically viable. For permanent use, we recommend: concrete foundation with cast-in anchor bolts (replaces stakes), annual bolt re-torqueing, and biannual fabric inspection. Optional rigid wall panel and insulated roof upgrades available for true permanent installations.

Q4: What about hurricane preparedness for coastal venues?

The 110 mph wind rating handles Category 2 hurricane conditions. For venues in hurricane-prone regions (Florida, Gulf Coast, Carolinas), we offer: upgraded anchoring (helical piers to 15ft depth), additional guy line systems, and a hurricane

preparation protocol (sidewall removal to reduce wind profile, secondary tie-downs). The tent has successfully weathered multiple named storms along the US Gulf Coast.

Q5: Do you provide engineering stamps for building permits?

Yes. We work with US-licensed Structural Engineers (SE/PE) registered in all 50 states who review our ASCE 7-22 calculations and provide state-specific stamped drawings for building permit applications. This service is included with every mega tent purchase. Typical turnaround: 2-3 weeks for engineering review and stamping.

Q6: What accessories and upgrades are available for this tent?


Comprehensive accessory line: glass wall panels, insulated hard walls, HVAC integration packages (50-200kW), professional lighting rigging grids, raised cassette flooring (wood/carpet/marble), mezzanine floor systems, full stage packages, fire alarm/emergency lighting (NFPA 72 compliant), custom-printed valance and branding, and ADA-compliant ramp systems. Tell us about your project and we'll spec a complete solution.



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