MaxFab Tank Panel System

Pre-fabricated, double-lock standing-seam tank insulation panels. Designed and built in Edmonton, Alberta.

Legacy product name: Enerpro Tank Panel System. Same product, same fabrication team, manufactured by Max Thermal Fabricators.

System Description

The MaxFab Tank Panel System is a pre-fabricated tank insulation system consisting of insulation core laminated to pre-formed metal jacketing, joined panel-to-panel by a mechanically folded double-lock standing seam. No fasteners through the weather face. The insulation core is specified to the application's operating temperature.

Panels are CNC-cut and formed to match the host tank's exact geometry — diameter, height, roof pitch, and penetrations for nozzles, manways, stairs, ladders, and instrument tappings. Installs from a boom lift without scaffolding. The tank stays in service. No welding to the tank shell.

Materials of Construction

Insulation Core

Mineral wool (standard)	Rigid mineral wool board, 8 lb/cu·ft, ASTM C612 Type IVB, ASTM E136 non-combustible. Standard insulation core for ambient through high-temperature service to approximately +650 °C.
Closed-cell PIR	Closed-cell polyisocyanurate, rigid. Cryogenic through cold-service applications to approximately –196 °C. Specified where moisture-tolerance and low-K-value are required.
Fibreglass	Where specified by the client. Cold and ambient service. Used when matching existing facility specifications.

Aluminum Jacketing

Standard	0.024″ ASTM B209 wrought aluminum. Alloy 1100, 3003, or 3105-H14. Stucco embossed finish standard.
Heavier option	0.032″ available on request for added impact resistance or specifier preference.
Thinner gauges	Not recommended. Compromises both double-lock seam-fold integrity and long-term weather-tightness.
Moisture barrier	DuPont Surlyn 3-mil three-layer polyethylene moisture barrier, heat-laminated to the interior face of the aluminum jacket.

Steel Jacketing (alternative)

Standard	26-gauge steel per client specification. Choice of substrate: galvanized (ASTM A653), galvalume (ASTM A792), aluminized (ASTM A463), or pre-painted.
Heavier option	24-gauge available on request.
Thinner gauges	Not recommended. Same seam-fold integrity and weather-tightness reasons as aluminum.

Standing Seam Profile

Mechanically folded double-lock standing seam. Seam height approximately 1.5″ above the jacket face. No exposed fasteners on the weather side of the panel. Field seam closure tool engages both lock folds for a single mechanical operation.

Attachment Hardware

Galvanized steel cable (3/16″ or 1/4″, project-specified) tensioned around tank shell at 10-15 ft vertical spacing. Stainless steel cable clamps. Panel-to-cable attachment via stainless steel wire-tie loop. No bolts, no welds, no penetrations through the tank shell.

Tank Geometries Supported

Cylindrical shell	Diameters from approx. 10 ft to 132 ft, no maximum height other than craneable panel length.
Cone roof	Low-pitch and high-pitch supported. Pie-segment panels with optional external rafter pockets.
Dome roof	Spherical-cap geometry. Compound-curved panels CNC-cut to match radius.
Bottom cone	Inverted cone shells (catenary or conical) supported on the same standing-seam principle.

Performance

Service life	25+ years maintenance-free. Original installations from the 1990s remain in service today.
Operating temperature	Specified to the application via insulation core selection. System range: approximately –196 °C (cryogenic, PIR core) to +650 °C (high-temperature process, mineral wool core).
CUI prevention	Sealed double-lock standing-seam envelope eliminates the weather-face penetrations that drive corrosion under insulation under traditional jacketing systems.
Largest installation	132 ft diameter × 145 ft high oilsands tank with dome roof and bottom cone.

Installation Summary

Pre-fabricated in Edmonton. Shipped to site palletized and labelled by tank elevation. Installed from a boom lift — no scaffolding setup or teardown. Cable hardware installed first, panels hung and seamed bottom-to-top. The tank remains in service throughout. No hot-work permits required. A 132 ft tank installation typically completes in 3-6 weeks depending on geometry and access.

Standards Referenced

ASTM B209	Aluminum and aluminum-alloy sheet and plate — jacketing material.
ASTM C612	Mineral fibre block and board thermal insulation — Type IVB rigid mineral wool board.
ASTM E136	Standard test method for assessing combustibility of materials using a vertical tube furnace — non-combustibility of mineral wool core.
ASTM A653 / A792 / A463	Steel substrate options for steel jacketing — galvanized, galvalume, aluminized.
NACE SP0198 / AMPP	Control of corrosion under thermal insulation and fireproofing materials.

API 510 / API 653	Pressure vessel inspection / aboveground storage tank inspection.
NFPA 22	Standard for water tanks for private fire protection.
ASHRAE 90.1	Energy standard for buildings except low-rise residential buildings — equipment insulation.

Information Required to Quote

Tank diameter and height. Roof type and pitch (or dome radius). Bottom geometry. Service medium and operating temperature range. Location for delivery. Project schedule.

Supply and Lead Time

Custom-designed and quoted per project. No list price. Project-dependent lead time. Quote response within 1 business day, direct from the project team. Contact at office@maxfab.ca or 1-780-717-2956.

Manufacturer

Max Thermal Fabricators (MaxFab). Edmonton, Alberta. The MaxFab Tank Panel System (formerly the Enerpro Tank Panel System) is manufactured in-house by the same team that developed and refined the standing-seam tank panel system over four decades of field installations.