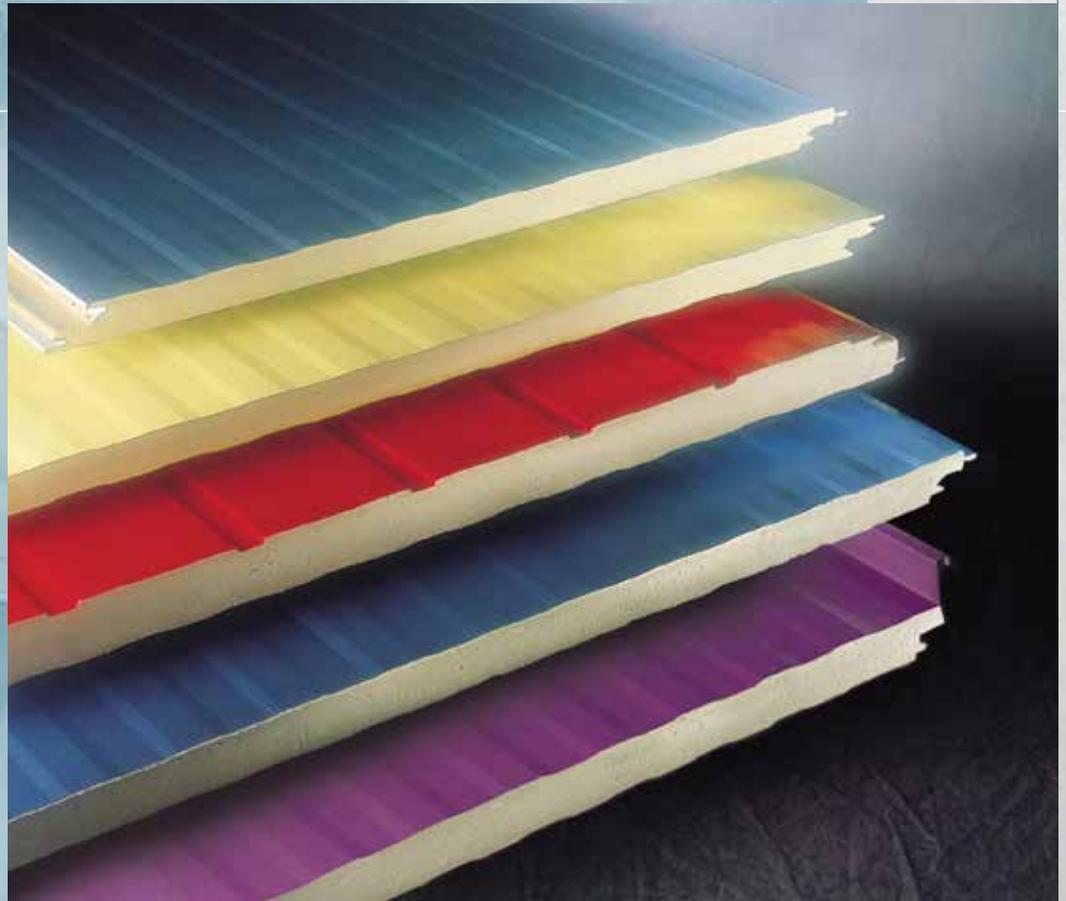


METL-SPAN COLD STORAGE



**METL-SPAN CF AND CFR INSULATED METAL PANELS
AND THERMALSAFE® FIRE RESISTANT INSULATED PANELS**

PIONEERING INSULATED METAL PANEL TECHNOLOGY



THE METL-SPAN COMMITMENT

MANUFACTURER

Metl-Span® is dedicated to manufacturing and marketing the finest insulated building panel products for the cold storage and food processing industries. As a pioneer in insulated metal panel development for over forty-five years, we continue to make many of the product design innovations and technology improvements that shape industry standards. We are constantly expanding our research and process capabilities to provide the highest quality product possible.



Metl-Span serves the cold storage and food processing industries with the most energy efficient, cost-effective, factory insulated metal wall, partition, ceiling and roof panels available today. With over three hundred million square feet installed in North America and in many other parts of the world, Metl-Span is a recognized leader in the advancement of insulated metal panel technology.



This is evident by the development of our advanced zero ozone depleting (zero ODP) polyurethane foam core in response to today's aesthetic and ecological concerns. In addition, no volatile organic compounds are released to the atmosphere during production or during the lifetime use of our panels. The EPA approved foam core demonstrates our commitment to minimizing the impact on the environment as well as our commitment to our customers, while also providing a foam core that has increasingly better insulation values the lower the mean core temperature of the panel.





PRODUCT PRESENTATION

Metl-Span® CF and CFR insulated metal panels are manufactured according to exacting specifications to assure uniform quality and product consistency. The advanced zero ozone depleting, (zero ODP) polyurethane foam core is injected in-line between two steel face sheets. For added strength, the faces are textured with stucco embossing, and are finished with baked-on coatings in standard and special colors.

Metl-Span CF and CFR insulated metal panels are the ultimate in single step, factory insulated, energy saving panel systems. The single element insulated metal panels for wall, partition, ceiling, and roof applications are durable, economical, and quick to install.

With Metl-Span CF and CFR, you have more profile selections, surface finishes, colors and custom lengths-all to match your project specifications.

COMPARE THE FEATURES AND BENEFITS

SUPERIOR INSULATING VALUE across the entire wall and roof area is assured with Metl-Span panels. The panels actually increase in R-value as the mean core temperature decreases. This unique feature is attributed to the blowing agent used in the production of the panels to give them their high insulating qualities.

ONE-STEP INSTALLATION process assures rapid completion of the wall and roof system. Factory fabricated insulated metal panels are attached directly to the supporting structure and multiple steps to construct the insulated wall or roof are eliminated. Faster building completion means significantly reduced construction and interim financing costs.

IMPERMEABLE EXTERIOR AND INTERIOR FACES ensure the highest insulating values are maintained for the life of the building. Panels are manufactured with impermeable facers, and when installed, the insulation is completely encapsulated by metal trim that creates an impermeable membrane on all sides of the panel. The aged "R" values are comparable to the initial "R" values many years after the building's original completion.

CLASS 1 POLYURETHANE FOAM meets the requirements of the major model building codes for cold storage construction unlike panels with expanded polystyrene cores. Local building codes may require automatic fire suppression systems for most installations.

METL-SPAN PANELS ARE LIGHTWEIGHT, yet very strong and durable attributing to reduced costs for erection and structural support.



MATERIALS AND FINISHES

Metl-Span® CF wall, partition, ceiling, liner and CFR roof panel faces are standard stucco embossed, G-90 galvanized and/or AZ-50 aluminum-zinc coated steel, grade 33 and 50 yield conforming to ASTM A653. Type 304L stainless steel is also available.

The exposed interior faces of the wall, partition, ceiling and liner panels are available with unembossed or non-profiled faces for processing areas, where concern for microbial growth is primary. *Note: Slight imperfections and oil canning may be present and are not a product defect or cause for rejection of the panels.*

Each order is factory fabricated to exact lengths to minimize field cutting. Minimum standard length is 8'-0" (2.44 m) and the maximum is 53'-0" (16.15 m). The minimum standard length for the CFR roof panel is 9'-6" (2.90 m) and the maximum 53'-0" (16.15 m). *Note: The maximum standard length may be limited based on panel thickness and profile.*

CORE INSULATION

The foamed-in-place polyurethane core offers insulation values that actually improve as the mean core temperature of the panel decreases. Metl-Span's advanced polyurethane core is zero ozone depleting (zero ODP) foams and contains no volatile organic compounds like those found in pentane (HC) blown foams.

Panel Thickness	Thermal Conductivity		Heat Transfer Coefficient		Thermal Resistance		
	IN.	CM.	K - Factor	U - Value	R - Value	$\frac{k \cdot m^2}{w}$	
2	5.08	0.118	0.017	0.059	0.335	16.9	2.976
2.5	6.35	0.118	0.017	0.0472	0.268	21.13	3.721
2.75	6.99	0.118	0.017	0.0429	0.244	23.24	4.093
3	7.62	0.118	0.017	0.0393	0.223	25.35	4.464
4	10.16	0.118	0.017	0.0295	0.168	33.8	5.953
5	12.7	0.118	0.017	0.0236	0.134	42.25	7.441
6	15.24	0.118	0.017	0.0197	0.112	50.7	8.929

Thermal values are based on testing at a 40°F mean temperature.



TRIM

Flashing and trim are available in brake-formed sheet metal in the same thickness and finish to match the panels.

COATINGS AND SURFACINGS

To ensure a lasting quality appearance, the exterior face sheet is coated with a siliconized polyester paint finish in three standard colors. The interior face sheet is treated with USDA compliant Igloo White. A premium PVDF fluoropolymer finish is available for projects where aesthetic considerations for the exterior of the building are crucial. For more aggressive environments, a USDA compliant PVC Plastisol is offered for interior applications. All exterior finishes come with a superior minimum 20-year warranty for coating adhesion, chalk and fade resistance.

No warranty is offered for the interior painted surface of the panel.

USDA compliant Type 304L stainless steel in 26 Ga. is available for food processing areas.

▲ In process areas requiring heavy wash-down of the inside panel face, Metl-Span suggests using stainless steel instead of the standard USDA compliant Igloo White coating. Metl-Span does not recommend using unpainted galvanized steel or paint finishes of any type on Metl-Span panel faces that are exposed to wash-down with high pressure equipment and chemical cleaners.

USES AND APPLICATIONS

Metl-Span panels serve as walls, ceilings and roofing for cooler, freezer and food processing buildings, in new and retro-fit construction. In addition, Metl-Span panels are ideal for dry goods warehouses and other controlled environment buildings where temperature control and insulation values are critical.

PANEL SPECIFICATIONS

COLOR & COATING OPTIONS

A full range of exterior Colors & Coatings are available for the Cold Storage market. For specific information about our available colors and coatings, visit us online for a comprehensive selection - metlspan.com.

CF FLUTED WALL PANELS



CF Fluted Wall Panels provide bold vertical lines, complementary to almost any cold storage distribution or food processing building. The Fluted wall panel is the recommended profile for the exterior of freezer buildings.

Module Width:	42"
Panel Thickness:*	2", 2 1/2", 3", 4", 5", 6"
Lengths:	8'-0" to 53'-0"
Profile:	Flutes 1" wide and nominal 3/8" deep
Exterior Face:	Stucco embossed, G-90 galvanized and/or AZ-50 aluminum-zinc coated steel in 26 Ga., 24 Ga. and 22 Ga.
Interior Face:	Mesa profile with stucco embossed, G-90 and/or AZ-50 aluminum-zinc coated steel in 26 Ga., 24 Ga., 22 Ga. and Type 304L stainless steel panels
Panel Joint:	Offset double tongue and groove with extended metal shelf for positive face fastening
Panel Core:	Foamed-in-place, zero ozone depleting (zero ODP) polyurethane, FM Class 1 approval

CF MESA & LIGHT MESA PANELS



CF Mesa & Light Mesa Wall Panels are attractive and economical panels used for walls, partitions, liner walls and ceilings.

Module Width:	36", 42"
Panel Thickness:*	Mesa panel: 2", 2 1/2", 3", 4", 5", 6" Light Mesa panel: 2", 2 1/2", 3", 4"
Lengths:	8'-0" to 53'-0"
Profile:	Mesa is nominal 1/8" deep Light Mesa is nominal 1/16" deep
Exterior Face:	Stucco embossed, G-90 galvanized and/or AZ-50 aluminum-zinc coated steel in 26 Ga., 24 Ga. and 22 Ga.
Interior Face:	Stucco embossed, G-90 and/or AZ-50 aluminum-zinc coated steel in 26 Ga., 24 Ga., 22 Ga. and Type 304L stainless steel panels
Panel Joint:	Offset double tongue and groove with extended metal shelf for positive face fastening
Panel Core:	Foamed-in-place, zero ozone depleting (zero ODP) polyurethane, FM Class 1 approval

CF PARTITION WALL PANELS



CF Partition Wall Panels are well suited for partition wall applications. The lightly corrugated profile on both faces of the panel ensures symmetry from room to room.

Module Width:	44 1/2"
Panel Thickness:*	Mesa panel: 2", 2 1/2", 3", 4", 5", 6" Light Mesa panel: 2", 2 1/2", 3", 4"
Lengths:	8'-0" to 53'-0"
Profiles:	Mesa is nominal 1/8" deep Light Mesa is nominal 1/16" deep
Faces:	Stucco embossed, G-90 and/or AZ-50 aluminum-zinc coated steel in 26 Ga., 24 Ga., 22 Ga. and Type 304L stainless steel panels
Panel Joint:	Offset double tongue and groove <i>Note: The extended metal shelf is not available with the 44 1/2" module width.</i>
Panel Core:	Foamed-in-place, zero ozone depleting (zero ODP) polyurethane, FM Class 1 approval

* 2 3/4" thick CF Panel is available from the Nevada plant.

PANEL SPECIFICATIONS

COLOR & COATING OPTIONS

A full range of exterior Colors & Coatings are available for the Cold Storage market. For specific information about our available colors and coatings, visit us online for a comprehensive selection - metlspan.com.

CF STAINLESS STEEL WALL PANEL



CF Stainless Steel Wall Panel is recommended for the interior face of exterior walls and on both faces of partition walls in food processing areas, where panel faces are exposed to high pressure wash-down and chemical cleaners.

Module Width:	42", 44 ½"
Panel Thickness:*	2", 2 ½", 3", 4", 5", 6" (Light Mesa not available for 5" or 6" panels)
Lengths:	8'-0" to 53'-0"
Profile:	Mesa is nominal 1/8" deep Light Mesa is nominal 1/16" deep
Faces:	Stucco embossed, Type 304L stainless steel panels
Panel Joint:	Offset double tongue and groove with extended metal shelf for positive face fastening <i>Note: The extended metal shelf is not available with the 44 ½" module width.</i>
Panel Core:	Foamed-in-place, zero ozone depleting (zero ODP) polyurethane, FM Class 1 approval

CFR ROOF PANEL



CFR Roof Panel is an insulated metal panel with an innovative standing seam design. The single element roof panel combines durable exterior and interior steel faces with Metl-Span's unmatched zero ozone depleting (zero ODP) polyurethane core.

Module Width:	30", 36", 42"
Panel Thickness:*	2", 2 ½", 3", 4", 5", 6"
Lengths:	8'-0" to 53'-0"
Exterior Profile:	2" high standing seam; Mesa profile between the seams
Interior Profile:	Mesa is nominal 1/8" deep
Exterior Face:	Stucco embossed, G-90 galvanized and/or AZ-50 aluminum-zinc coated steel in 24 Ga. and 22 Ga.
Interior Face:	Stucco embossed, G-90 and/or AZ-50 aluminum-zinc coated steel in 26 Ga., 24 Ga., 22 Ga
Panel Joint:	Mechanically closed single lock standing seam at the exterior side joint. The interior side joint is a single tongue and groove interlock
Panel Core:	Foamed-in-place, zero ozone depleting (zero ODP) polyurethane, FM Class 1 approval

* 2 ¾" thickness is available from the Nevada plant.

THERMALSAFE® MINERAL WOOL PANELS

PRODUCT PRESENTATION

Metl-Span®'s ThermalSafe® product is a fire resistant insulated metal panel consisting of metal faces bonded to a structural mineral wool core. ThermalSafe combines the latest technology in panel design with Metl-Span's advanced manufacturing expertise to create an insulated metal panel that achieves one-, two- and three-hour fire resistance ratings under the most demanding conditions.

ThermalSafe panels with the exclusive LockGuard® side joint have one-, two- and three-hour fire resistance ratings without installation of field-applied silicate splines in the panel joint. This unique design speeds the installation process and enhances the fire resistant characteristics of the panel.

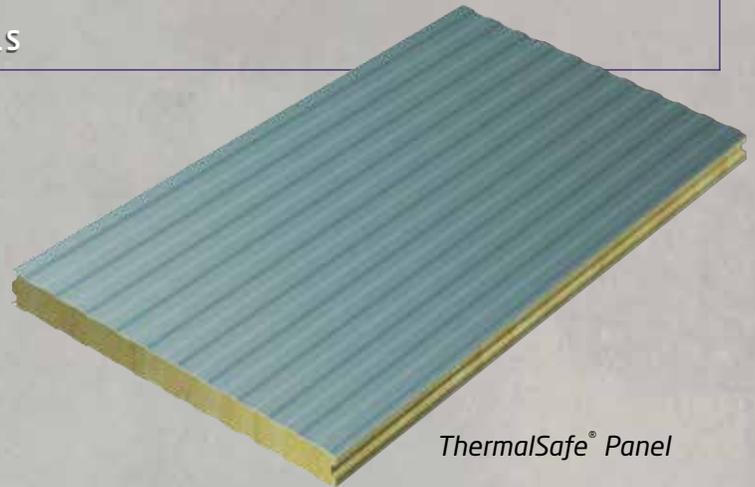
▲ *Note: Panel with three-hour fire resistance rating has specific installation requirements found in the UL Online Certification Directory under Metl-Span, Design Number U050.*

USES AND APPLICATIONS

ThermalSafe mineral wool panels are ideal for cold storage warehouses, bakeries and other food processing facilities where there is a need to separate and protect at risk for fire, building installations and contents. The panels can be installed as exterior fire resistant separation walls or as partition walls inside warehouses that contain multiple tenant leased space.

PANEL SPECIFICATIONS

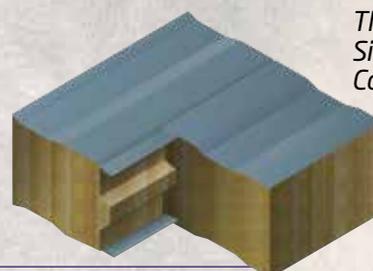
Face Profile:	Light Mesa is nominal 1/32" deep
Module Width:	42"
Panel Thickness:	Nominal 4", 5", 6", 7", 8"
Lengths:	8'-0" to 40'-0". Maximum available length may be reduced due to panel thickness, end use and orientation
Exterior Face:	Stucco embossed, G-90 galvanized and/or AZ-50 aluminum-zinc coated steel in 26 Ga. and 24 Ga.
Interior Face:	Stucco embossed, G-90 and/or AZ-50 aluminum-zinc coated steel in 26 Ga., 24 Ga. and Type 304L stainless steel in 26 Ga. unpainted
Panel Joint:	Exclusive LockGuard® side joint has a flush, double tongue and groove connection of the metal faces with an advanced integral spline to join the mineral wool core
Panel Core:	Non-combustible structural mineral wool
R-Value:	The core insulating properties are 3.61 "R" per inch



ThermalSafe® Panel

FEATURES AND BENEFITS

- ▶ ThermalSafe's structural mineral wool core resists high temperatures and will not burn.
- ▶ Fire resistant exterior and interior walls can be installed in one step. Multiple steps required with concrete block or numerous layers of gypsum wallboard are eliminated.
- ▶ ThermalSafe panels provide good thermal performance and protection from the elements. No additional steps to insulate the wall are necessary.
- ▶ The panels can be combined with Metl-Span foam insulated panels for an aesthetically consistent profile facing, texture and color.
- ▶ ThermalSafe walls can be disassembled, moved and reinstalled rather than having to be demolished, waste materials disposed of and the walls completely rebuilt.
- ▶ Installation of separate cement board splines at the side joint of the panel to maintain fire resistance is eliminated with the exclusive LockGuard integral spline design.
- ▶ Mineral wool panels have good sound reduction acoustical properties.
- ▶ The mineral wool core is dimensionally stable, water repellent and will not expand.



ThermalSafe® Side Joint Connection

WARRANTY

Metl-Span insulated metal wall, CFR, and ThermalSafe mineral wool panels are warranted to be free from defects in material and workmanship for a period of two years from the date of substantial completion. Ensuring watertightness and/or vaportightness is a function of the installer and is not covered by the warranty from Metl-Span. Complete standard limited warranty information is available upon request.



Metl-Span is not responsible for selection and application of colors, coatings, or other products, and reserves the right to substitute, delete, or change gauges, widths, thicknesses, finishes, profiles, and colors on its products at its discretion - at any time and without notice.



AVAILABILITY AND COST

Metl-Span panels are available through a network of independent representatives, independent contractors, and design-build companies. Since cost is a factor that varies with each installation based on panel profile, insulation thickness, coatings, and quantity, contact Metl-Span for the name of your nearest representative for pricing.



PERFORMANCE TESTS

For more complete information on panel specifications, technical data, detail library, and the location of your nearest sales representative, please visit us online at metlspan.com.

PIONEERING INSULATED METAL PANEL TECHNOLOGY



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