

ICS-Performance Wall OSB/FRP

TECHNICAL SPECIFICATIONS

ICS Performance Wall is a structural-grade stress skin panel for use in residential and commercial construction.

The Oriented Strand Board (OSB) - Fiber Re-enforced Plastic (FRP) Panel produces the most versatile panel on the market today. In addition to its structural capabilities FRP displays excellent resistance to corrosive effects. It resists the destructive expansion of the freeze-thaw cycle of water, does not rust and provides resistance to nearly every chemical and temperature environment. Of particular benefit, is its ability to successfully withstand the normally destructive effects of saltwater spray from the ocean.



Panels are manufactured by injecting a two part urethane foam into a frame press. The injected foam chemically reacts, creating heat and pressure, filling the core of the panel. The expanding foam bonds directly to the skins, cures and forms a solid, durable, efficient, high strength building component.

The injected urethane panels are stronger than a standard 2 x 4 wall system. This remarkable strength is achieved through permanent bonding of structural panel components (OSB/FRP) on each side of a high-density urethane core. ICS's unique manufacturing technique provides additional strength by foaming into each panel structural components called splines adding stability and strength. Special steel "Cam-Locks" join the panels tightly together creating an airtight wall. Unique profile edges and foamed-in-place headers assure components fit together tightly. ICS urethane foam mixture provides a class 1 panel that does not contribute to flame spread making the structures safer. Electrical and cable chases can be imbedded inside the panels for ease of wiring. Doors and windows can be installed in the plant before shipping reducing construction costs and time. Or door and window openings can be placed in a panel for onsite installation.



BENEFITS

- Energy savings
- Faster construction
- Stronger structures
- Quieter

Width: Maximum is 4'-0" (120 cm)

Height: Standard is 8'-0" (240 cm), 10'-0" (300 cm),
12'-0" (360 cm) max 16'-0" (480 cm)

Thickness: 3-0" R21+ (7.5 cm)

4 1/2" (construction standard) R30 (11.3 cm)

6 1/2" (construction standard) R42 (16.3 cm)

Structural Panels Uses

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| <ul style="list-style-type: none"> • Remote Offices • In Plant Offices • Environmental Rooms • Garages • Reduced Noise Offices • Refrigeration Buildings • Agricultural Buildings | <ul style="list-style-type: none"> • Storage Buildings • Quick Lube Buildings • Oil Change Buildings • Electronic Equipment Protection • Power Generation Site Shelters | <ul style="list-style-type: none"> • Recreational/Leisure Homes • Residential Homes • Roofs for Log Homes • Curtain Wall |
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DIMENSIONS AND PHYSICAL PROPERTIES

OUTER SURFACE: 7/16 " (1.09 cm) Oriented Strand Board (OSB).

INNER SURFACE: 7/16 " (1.09 cm) Structural Fiber Reinforced Plastic (FRP).

INSULATION CORE: 3-7/8" (9.67 cm) polyurethane, 2.50-lb/ft² density, Class 1, closed cell foam.
Note: This foam insulation contains no formaldehyde or formaldehyde-related chemicals.

ADHESION: A strong and durable bond exists between foam and skins. Heat and pressure created by the chemical reaction of the expanding foam forces complete adhesion of the foam core to the skins.

DIMENSIONS AND WEIGHT:

Overall Thickness: 4-1/2" (11.3 cm)

Thickness Tolerance: ± 1/16" (.156 cm)

Standard Width: 4'-0" ±1/16" (120 cm)

Standard Lengths (ft): 8'-0" (240 cm), 10'-0" (300 cm), 12'-0" (360 cm), 16'-0 (480 cm)

Length Tolerance: ±0/ -1/16" (.156 cm)

Weight (lb) : Varies-skin (Avg. 3.9#/ft)

STRUCTURAL PROPERTIES OF FOAM:

Compressive Strength: 35 psi

Compressive Modulus: 790 psi

Tensile Strength: 16 psi

Tensile Modulus: 325 psi

Shear Strength: 26 psi

Shear Modulus: 325 psi

THERMAL PERFORMANCE:

Conductivity of Foam .13-.15 (Btu-in/ft²hr°F) (aged 6 months)

Minimum R-Value 28 (Ft²hr°F/Btu) (aged 6 months)

MOISTURE

Vapor Permeability: 2 perm/in

Moisture Absorption: 2.4%

Resistance to Solvents: Excellent

Resistance to Mold/Mildew: Excellent

FIRE SAFETY:

Finish Rating: Standard 15-minute finish rating w/Fiber Cement.
1/2 " (1.25 cm) Sheetrock facing required for OSB

Foam Fire Rating: Class 1

Smoke Developed: <400 (ASTM E-84)

Flame Spread: <25 (ASTM E-84)

STRUCTURAL INTEGRITY IN FIRE CONDITIONS:

Polyurethane foam is a "thermo-set" plastic. It retains its structural integrity until completely consumed by fire. Melting does not occur.

TOXICITY OF COMBUSTION:

Combustion products are similar to those produced by burning wood.