

ICS-Performance Wall OSB/OSB

TECHNICAL SPECIFICATIONS

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

Using Oriented Strand Board (OSB) as the External and Internal Surfaces the OSB/OSB Panel provides you with a complete structural panel. OSB has been used in construction since the 1980s as an external surface on stud walls.



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/OSB) 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: 4 1/2" (construction standard) R30 (11.3 cm)
6 1/2" (construction standard) R42 (16.3 cm)

*Special pricing is available for non-standard sizes.

Structural Panels Uses

- Remote Offices
- In Plant Offices
- Environmental Rooms
- Garages
- Reduced Noise Offices
- Refrigeration Buildings
- Agricultural Buildings
- Storage Buildings
- Quick Lube Buildings
- Oil Change Buildings
- Electronic Equipment Protection
- Power Generation Site Shelters
- 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) Oriented Strand Board (OSB).

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 (aged 6 months) | .13-.15 (Btu-in/ft ² hr°F) |
| Minimum R-Value (aged 6 months) | 28 (Ft ² hr°F/Btu) |

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.

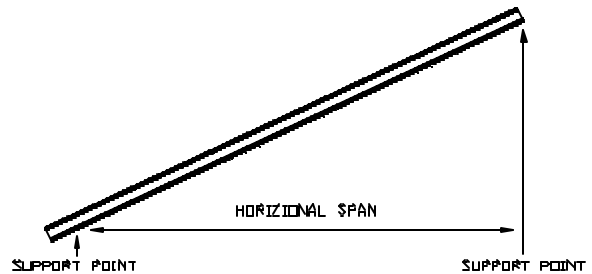
TOXICITY OF COMBUSTION:

Combustion products are similar to those produced by burning wood.

OSB/OSB Panel ASTM E 72-98 Testing

WALL LOAD TABLE
(ALLOWABLE AXIAL LOADS (psf))

| WALL HEIGHT | 13 PSF | 16 PSF | 20 PSF | 23 PSF | 25 PSF |
|-------------|--------|--------|--------|--------|--------|
| 4' | 7800 | 7700 | 7600 | 7525 | 7475 |
| 5' | 7525 | 7400 | 7225 | 7100 | 7025 |
| 6' | 7150 | 6975 | 6725 | 6575 | 6475 |
| 7' | 6675 | 6450 | 6150 | 5575* | 5150* |
| 8' | 6150 | 5500* | 4525* | 3800* | 3325* |
| 9' | 4875* | 4050* | 2950* | 2125* | 1575* |
| 10' | 3600* | 2675* | 1450* | 550* | |
| 11' | 2425* | 1400* | 75* | | |
| 12' | 1325* | 225* | | | |



ROOF SPAN TABLE (FT/IN) HORIZ LOAD
UNIFORM LOAD (LIVE PLUS DEAD LOAD)

| DEFLECT LIMITS | 20 PSI | 30 PSI | 40 PSI | 50 PSI | 60 PSI | 70 PSI | 80 PSI |
|----------------|--------|--------|--------|--------|--------|--------|--------|
| L/180 | 12'4" | 10'3" | 9'0" | 8'0" | 7'3" | 6'7" | 6'1" |
| L/240 | 11'0" | 9'2" | 7'10" | 6'10" | 6'2" | 5'7" | 5'2" |
| L/360 | 9'0" | 7'4" | 6'3" | 5'4" | 4'9" | 4'3" | |
| L/480 | 7'9" | 6'2" | 5'2" | 4'5" | | | |