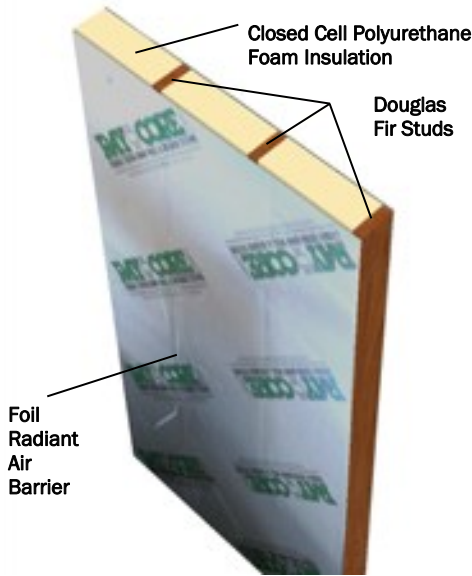


# RAYCORE Structural Insulated Roof and Wall Panels

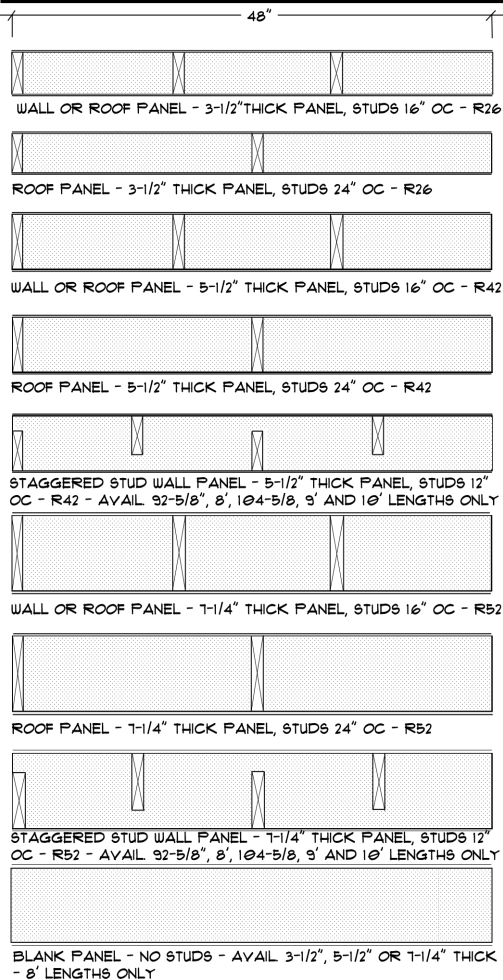


## STANDARD FEATURES

- Insulation, Framing and Wrap in a 4' wide panel
- Available in 3-1/2" (R26), 5-1/2" (R-42) and 7-1/4" (R52) thick panels
- Available in precut 92-5/8", 8', precut 104-5/8", 9', precut 116-4/810' and 12' lengths
- Class 1 fire rated 2.2 lb. density closed cell polyurethane foam insulation
- #2 or better Douglas fir, larch (if other, will be specified)
- Foil radiant barrier on either side of panel
- No Special SIP Code Required—falls under Section R602 Wood Wall Framing in the IRC

## IMPORTANT NOTES

Installation shall be in strict accordance with the manufacturer's published instructions and conventional stick-framing construction methods and practices, engineers or architect's specifications, and compliance with international, national and local code requirements. Deviations from conventional building methods and practices should be calculated, specified, signed and sealed by a licensed professional engineer or architect.



## RAYCORE SIP PANEL

### TYPE OF PANEL

- Wall                       Roof                       Other \_\_\_\_\_

### STYLE OF PANEL

- Studs 16" oc               Studs 24" oc               Staggered Stud 12" oc
- No Studs

### SIZE - PANEL THICKNESS

- 3-1/2"                       5-1/2"                       7-1/4"

### PANEL LENGTH

- 92-5/8"                       104-5/8"                       116-5/8"
- 96" (8')                       108" (9')                       120" (10')
- 144" (12')

Date:	Job Name:
Customer:	Phone:                      Email:
General Contractor Approval:	Date:
Architect Approval:	Date:

## SUBMITTAL REVIEW

- Approved                       Approve with Changes Noted
- Revise and Resubmit               Rejected \_\_\_\_\_

Acceptance is for general compliance with the contract documents only. The contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques for construction; coordinating its work with that of all other trades; and performing its work in a safe and satisfactory manner.

By: \_\_\_\_\_ Date: \_\_\_\_\_





305 E. Elva Street  
Idaho Falls, ID 83401  
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## **SECTION 06 12 00**

### **STRUCTURAL PANELS**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

- A. Section Includes: Structural Insulated Panels
- B. Related Sections: Section(s) related to this section include:
1. Section 06 10 00 Rough Carpentry
  2. Section 07 21 00 Building Insulation

##### **1.02 SYSTEM DESCRIPTION**

RAYCORE Structural Insulated Panels are component product stick framing module consisting of conventional 2x4, 2x6, or 2x8's spf lumber studs prepositioned 16" or 24" on center with polyurethane foam insulation molded in place between studs and foil radiant air barrier applied to the exterior sides of the panels.

RAYCORE Structural Insulated Panels are installed using conventional stick frame construction methods and practices per UCC, IBC, IRC and ICC standards. RAY-CORE Panels are to be combined with standard dimensional lumber studs, plates, nailers, headers and sills, as required, supplied onsite by contractor as detailed in manufacturer's installation details meeting all 2019 building codes.

##### **1.03 REFERENCES**

- A. UCC – Universal Construction Code – Framing
- B. IBC – International Building Code - Framing
- C. IRC – International Residential Code - Framing
- D. UL-723 – Foam Surface Burning Characteristics
- E. ASTM E-72-05 - Compressive Load and Transverse Load
- F. ASTM D 1622 - Foam Density
- G. ASTM C 518 – Foam Initial K-Factor
- H. ASTM D-2856 –Foam Closed Cell Content
- I. ASTM D-2842 – Foam Water Absorption
- J. ASTM D-2126 – Foam Dimensional Stability

#### 1.04 DESIGN REQUIREMENTS

- A. Provide panels which have been manufactured to standard taking care to maintain performance criteria stated by manufacturer without defects, damage or failure. Provide labeling of all insulation used in the manufacture of panels. Manufacturer's listing programs shall cover both flame and physical properties.
- B. Panel manufacturer will provide R-value documents for building owner acceptance and execution upon request. Manufacturer's standard forms will be submitted.

#### 1.05 SUBMITTALS

- A. Product Data: Submit product data for specified products
- B. Installation Guide: Submit installation guide for specified products
- C. Warranty: Warranty documents specified herein

#### 1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Installer should be experienced in performing work with a degree of experience equal to conventional wood framing construction and other conventional construction methods and practices similar to that required for this project.
- B. Source Limitations: Obtain all panels through one source.

#### 1.07 REGULATORY REQUIREMENTS

- A. RAY-CORE Structural Insulated Panels shall be sized and installed in conformance and compliance with local codes.

#### 1.08 DELIVERY, STORAGE & HANDLING

- A. Prior to installation, RAY-CORE Structural Insulated Panels shall be stored in a protected area and elevated to prevent ground contact and covered to prevent exposure to sunlight, moisture and the elements.
- B. Prior to installation, RAY-CORE Structural Insulated Panels shall be covered and protected from exposure to sunlight and moisture.
- C. After installation, RAY-CORE Structural Insulated Panels shall be protected from prolonged exposure to sunlight and covered to prevent contact with water and /or moisture on all exposed panel edges and faces.

### **PART 2 - PRODUCTS**

#### 2.01 MANUFACTURERS/SUPPLIERS

- A. RAY-CORE, INC., 305 E. Elva Street, Idaho Falls, ID 83401

#### 2.02 MATERIALS

- A. RAY-CORE Structural Insulated Panels are component building panel product using proprietary manufacturing method consisting of the following:
  - 1. Integrated SPF #2 or better kiln dried or treated or engineered lumber
  - 2. UL certified polyurethane foam – meeting manufacturer quality standards
  - 3. Aluminum foil faced radiant vapor barrier with kraft substrate and direction reinforcing

2.03 FABRICATION

- A. Sizes: RAY-CORE Structural Insulated Panels come in 4 foot widths and are available in standard spf lumber 2x4, 2x6 or 2x8 thicknesses and standard lengths of 92.625", 96", 104.625", 108, 120" and 144" based on stud configuration. Custom stud configurations may be available as required.

2.04 PERFORMANCE CHARACTERISTICS

- A. Thermal Resistance, R-value—:

RAYCORE SIP PANELS TYPICAL R-VALUES		
PANEL THICKNESS (IN)	ASTM C518 Standard	Tested At 55° F
	75° F	
3-1/2"	24	26
5-1/2"	39	42
7-1/4"	50	52

- B. Panel Dimensional Tolerances: RAY-CORE Structural Insulated Panels shall comply with values listed in the manufacturer's Quality Control Manual.
- C. Structural Testing: Each RAY-CORE Structural Insulated Panel type shall meet or exceed performance standards, values, testing and applicable technical data reports when tested in accordance with:
  - 1. ASTM E84 Surface burning characteristics for the rigid insulation core.
  - 2. ASTM E84 Surface burning characteristics conducted for the interior and exterior surfaces of the finished panel.

**PART 3 – EXECUTION**

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Installation shall be in strict accordance with manufacturer's published instructions and conventional construction methods and practices, and compliance per local code requirements. Deviations from conventional building methods and practices should be calculated, signed and sealed by a registered professional engineer.
- B. Certification: Builders plans and panel manufacturer's installation manual

3.02 EXAMINATION

- A. Site Verification of Conditions: The contractor shall inspect conditions of substrate, grade and other conditions, which may affect the proper installation of panels. Verify substrate conditions are acceptable for product installation in accordance with manufacturer's instructions. Any adverse conditions are to be reported in writing to the construction manager. Do not proceed with the installation until adverse conditions are corrected.

### 3.03 INSTALLATION

Installation shall be in strict accordance with manufacturer's published instructions and conventional construction methods and practices and compliance per local code requirements. Deviations from conventional construction methods and practices should be calculated, signed and sealed by a registered professional engineer.

- A. Panel Supports: Provide level and square foundation/structural system/substrate to support wall and/or roof panels. Provide adequate bracing of panels during erection. Remove debris from panel edge prior to attachment of plates.
- B. Panel Fastening: Connect panels to plates by construction adhesive, nails, staples or screws as required. Where screw fasteners are used, provide a minimum of 2" penetration into support. Join panels using plates. Apply adhesive and foam sealant to all joints, penetrations, cracks and voids to fill and seal, following manufacturer recommendations.
- C. Tape: Provide tape at joints between panels and at intersection of roof and wall.
- D. Thermal Barriers: Internal surfaces of panels shall be finished with a minimum 15-minute thermal barrier, such as ½" gypsum wallboard other approved materials as required by local code requirements.
- E. External Finishes: External surfaces of panels shall be finished with materials that provide protection from sunlight, weather, moisture and all elements.
- F. Restrictions: Panels shall be protected from exposure to sunlight, moisture, the elements, solvents and their vapors, and any other substance that will damage the aluminum vapor barrier or polyurethane foam.

### 3.04 PROTECTION

- A. When storing RAY-CORE Panels, panels shall be stored in a protected area and elevated to prevent ground contact and covered to prevent exposure to sunlight, moisture and the elements. Do not allow panels to be stored in an unsupported manner. Improper storage may cause materials damage or decomposition and tolerance problems in the field.
- B. RAY-CORE Panels used on walls must be covered by an external finish to fully protect from sunlight, moisture and the elements.
- C. RAY-CORE Panels used on roof must be fully protected from sunlight, moisture and the elements utilizing tarps, roofing materials or other means to provide temporary protection at the end of the day, or when rain or snow is imminent, and permanently upon completion of construction.
- D. Remove and replace RAY-CORE panels, which have become excessively wet or damaged before proceeding with installation of additional panels or other work.
- E. The construction manager, or his designee, shall remove all refuse created by the installation of work in this section.
- F. Ordinary care and safety precautions should be followed when handling panels, as with other construction materials. Proper lifting techniques should be followed. Extra caution should be taken in wet, icy or windy conditions. Panel surface can be slippery. Exercise caution walking on panels and always use appropriate and approved fall protection. Do not walk on panels in wet, icy or windy conditions. Wear appropriate eye and dust protection when cutting panels.



305 E. Elva Street  
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## LIMITED LIFETIME WARRANTY

**Materials and Workmanship:** RAY-CORE offers a Limited Lifetime Warranty on their Structural Insulated Roof, Wall and Header products to the original purchaser or structure owner, as long as they own the covered structure, against defects in workmanship and/or material from the date of manufacture, provided the products were handled, specified, utilized and installed in a correct and proper manner, in conformance with the standards and specifications established by RAY-CORE, INC.'s Installation Manual, purchaser's architect or engineer's design specifications, standard building practices and international, national and local code requirements.

**Exceptions:** This warranty is a Manufacturing Defect Warranty and does not apply to damage resulting from violent, unusual weather conditions or acts of God including seismic and volcanic activity; fire, water or flood; animal, rodent or insect damage; mold or mold-related damage or fungal growth of any kind; settlement or failure of the building foundation; damage caused by structural changes, alterations, additions, distortion, or failure or settlement of foundation or other structural elements; engineering, design or builder's failure to appropriately interpret or follow specifications; alteration, misuse or abuse of materials prior to, during or after installation; damage resulting from improper installation or use of incompatible installation processes or materials; or any other cause or failure other than that resulting from a manufacturing defect of the product. RAY-CORE assumes no responsibility that the product will be fit for any particular purpose for which the purchaser is buying except as provided under "Materials and Workmanship". This warranty replaces all or other warranties, express or implied, including the warranties of merchantability and fitness. RAY-CORE, INC. shall not be liable for incidental, special, indirect or consequential damages resulting from a defect in the product and including, but not limited to, loss of time or use of a structure constructed with RAY-CORE products, inconvenience, commercial loss, excessive energy costs, injury, illness or other consequential damages. This warranty is extended only to the original purchaser or structure owner, as long as they own the covered structure and is otherwise non-transferable. This warranty is not applicable outside the United States and Canada.

**Activation of Warranty:** To activate this warranty, you must complete the warranty form and return it to RAY-CORE, INC. within ninety (90) days of receipt of your RAY-CORE products. By completing the warranty form, you are verifying that the RAY-CORE products were specified, utilized and installed in a correct and proper manner, in conformance with the standards and specifications established by RAY-CORE, INC.'s Installation Manual, purchaser's architect or engineer's design specifications, standard building practices and international, national, and local code requirements.

**Notification of Claims:** Notification of claims to RAY-CORE, INC. must be made in writing at RAY-CORE, INC. Customer Service, 305 E. Elva Street, Idaho Falls, ID 83401 immediately upon detection or perception of defective product. RAY-CORE, INC. reserves the right to inspect and owner must allow a RAY-CORE agent to enter the property and inspect the said defective product by an authorized representative prior to the settlement of any claim.

**RAY-CORE's Commitment:** If any of the RAY-CORE products listed above are found have a Manufacturing Defect in workmanship and/or materials during the warranty period as listed above, causing a loss to the original purchaser or structure owner only, as long as they own the covered structure during the warranty period as listed above, RAY-CORE, INC. will provide that owner with materials required to repair the problem or replacement product as RAY-CORE deems necessary, at the discretion of RAY-CORE, comparable to that originally purchased. If RAY-CORE elects to provide materials to repair or to replace the product, RAY-CORE will not be responsible for permits, design, engineering, labor, additional material or any other costs incurred in replacing the panels.

**Questions:** For questions concerning this warranty, contact RAY-CORE, INC. Customer Service at 1.877.552.2440; 305 E. Elva Street, Idaho Falls, ID 83401.



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### WARRANTY FORM

**PURCHASER:** INVOICE NO \_\_\_\_\_  
NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
PHONE NUMBER \_\_\_\_\_ FAX NUMBER \_\_\_\_\_  
EMAIL \_\_\_\_\_  
DATE OF PURCHASE \_\_\_\_\_ DATE OF RECEIPT \_\_\_\_\_

**ORIGINAL STRUCTURE OWNER:**  
NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
PHONE NUMBER \_\_\_\_\_ FAX NUMBER \_\_\_\_\_  
EMAIL \_\_\_\_\_

I certify that I have read and understand RAY-CORE, INC. Limited Lifetime Warranty and that all RAY-CORE SIP Panels referenced above were specified, utilized and installed in a correct and proper manner, in conformance with the standards and specifications established by RAY-CORE, INC.'s Installation Manual, purchaser's architect or engineer's design specifications, standard building practices and international, national and local code requirements.

Signature \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

**Activation of Warranty:** To activate this warranty, you must complete the warranty form and return it to RAY-CORE, INC. Customer Service, 305 E. Elva Street, Idaho Falls, ID 83401 within ninety (90) days of receipt of your RAY-CORE products.