SECTION 07 40 00 _ INSULATED COMPOSITE WALL AND ROOF PANELS
TUFF SPAN INSULATED COMPOSITE PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Insulated Composite Wall Panels with glass fiber reinforced plastic (FRP/GRP) face sheets and foam insulating core.
B. Insulated Composite Roof Panels with glass fiber reinforced plastic (FRP/GRP) face sheets and foam insulating core.
C. FRP/GRP trim and flashing for Insulated Composite Panels.
D. Fasteners for panels and flashing.
E. Closures and sealants.

1.2 DESIGN REQUIREMENTS

A. The insulated composite panels with glass fiber reinforced plastic (FRP) face sheets and foam insulating core shall be factory laminated or foamed-in-place under a certified ISO 9001 Quality Control program.
B. Design Requirements for Insulated Wall and Roof Panels:
    a. 1. Thermal Properties: When tested in accordance with ASTM C 518 at 75°F mean temperature, the panel shall provide a nominal R-value of 6 per inch (minimum) of core insulation thickness.
        i. 2” = 13 3” = 20
    b. Flame Spread: Rating of 25 or less, when tested in accordance with ASTM E84.
    c. Smoke Development: Rating of 450 or less, when tested in accordance with ASTM E84.
C. Design Requirements for Insulated Wall Panels:
    I. The wall panels shall be designed and furnished by the manufacturer as a complete system.
    II. Design loads shall be in accordance with local building code.
    III. Wind loads shall be based on criteria in accordance with local building code or not less than 20 lbs. psf (.957 kPa).
    IV. Deflection requirements shall be in accordance with the applicable building code and deflection limit of L/30.
    V. Factor of safety of 1.88 shall apply for wind loads.
    VI. Accessories and fasteners shall be capable of resisting specified wind loads.
D. Design Requirements for Insulated Roof Panels:
    I. The roof panels shall be designed and furnished by the manufacturer as a complete system.
    II. Design loads shall be in accordance with local building code.
    III. Dead load shall be the weight of the roof panels.
    IV. Live load shall be a minimum of 20 lbs. PSF (.957 kPa).
    V. Snow load shall be defined in accordance with local building code.
    VI. Design positive load shall be the higher of the live+dead or snow+dead load or as defined by the local building code.
    VII. Wind loads shall be based on wind criteria in accordance with local building code.
    VIII. Collateral loads shall not be applied to the roof panels.
    IX. Deflection requirements shall be in accordance with the applicable building code and deflection limit of L/60.
    X. Factor of safety of 2.5 shall apply for positive loads. Factor of safety of 1.88 shall apply for wind loads.
    XI. Accessories and fasteners shall be capable of resisting specified wind uplift loads.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURER

A. Enduro Composites, Inc., located at 16602 Central Green Blvd., Houston, TX 77032; Tel: 800-231-7271, 713-358-4000; Email: sales@endurocomposites.com; Web: www.endurocomposites.com.

2.2 INSULATED COMPOSITE PANELS (ICP)

A. Exterior face panel shall be Tuff Span glass fiber reinforced plastic (FRP) as manufactured by Enduro Composites, Inc. with ribs 12 in. (304.8 mm) on center with 1.25 in. (31.75 mm) depth and coverage of 48 inches (1219.2 mm).
B . Exterior face panel shall be Series 450 and meet all specified Design Requirements.
C. Surface of face panel exposed to outside environment shall have an embossed finish.
D. Exterior face sheet shall have acrylic polymer exterior UV coating protection, factory-applied with minimum .4 mil dry film thickness.
F. Color of exterior panel shall be Enduro standard Gray or as selected by owner.

G. Interior liner panel shall be Tuff Span glass fiber reinforced plastic FRP Siding Panel as manufactured by Enduro Composites, Inc. with ribs 12 in. (304.8 mm) on center with maximum .375 in. (9.5 mm) depth and coverage of 48 in. (1219.2 mm).
H. Interior liner panel shall be Series 300 at minimum and meet all specified Design Requirements.
I. Color of interior panel shall be Enduro standard White or as selected by owner.
J. Lengths of panels shall be +/- ¼" with maximum length of 16'0".

2.4 GLASS FIBER REINFORCED PLASTIC PANEL MATERIAL

A. Material resin shall be premium grade, Halogen Free, Aliphatic Hybrid , UV stabilized with neopentyl glycol and acrylic monomer.
B. Glass fiber reinforcements shall be continuous, straight and bi-directional along the length and width.
C. Material shall be fire retardant with UL Class 1 Flame Spread Rating of 25 or less per ASTM E-84 test.
D. Material shall have smoke development of 200 or less per ASTM E-84 test

2.5 FOAM INSULATING CORE

A. Foam insulating core shall be 2"/3" *(select one)* thick, polyisocyanurate foam insulation. The foam insulating core shall
    a. be factory laminated or foamed-in-place to the face sheet and liner to develop the finished insulated composite panel unit.
B. Foam insulating core shall be tested to ASTM E84 and shall have these characteristics.
C. Flame spread index: 25 or less.
D. Smoke developed index: 450 or less.

2.6 ACCESSORIES

A. Accessories shall include flashing, trim, closures, sealant, fasteners, and other items as required for a complete installation.
B. FRP/GRP flashing and trim shall be in thickness, dimensions, and profile as required.
C. Fasteners
    a. Structural fasteners shall be ____ stainless steel with seal washers and installed per manufacturer's instructions.
    b. Side lap and flashing fasteners shall be ____ stainless steel SB2 grommets and installed per manufacturer's
    c. instructions.
D. Closures and Sealant
    a. Closures shall be EPDM material and match panel profile.
    b. Sealant shall be 3/32 x 1/2 inch, non-shrink/non-hardening butyl tape.