



CRAFT-BILT MANUFACTURING COMPANY

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PANEL CRAFT BUILDING PRODUCTS: HONEYCOMB AND POLYSTYRENE SANDWICH PANELS

CSI Section:
07 40 00 Roofing and Siding Panels

1.0 RECOGNITION

Craft-Bilt Panel Craft Building Products Honeycomb and Polystyrene Sandwich Panels have been evaluated for use as exterior and interior, non-axial-load-bearing wall panels, and roof/ceiling panels. The wall and roof/ceiling panels are for use at locations where combustible, Type V, non-fire-resistance-rated building construction is permitted by the IBC and buildings constructed to the IRC.

The material, structural, and fire-resistance properties of the Sandwich Panels have been evaluated for compliance with the following codes:

- 2021, 2018, and 2015, International Building Code® (IBC)
- 2021, 2018, and 2015, International Residential Code® (IRC)

Panel Craft Building Products Honeycomb and Polystyrene Sandwich Panels may be used as a classified roof covering assembly and as an interior wall and ceiling finish without a thermal barrier, based on testing in accordance with IBC Section 2603.9 and IRC Section R316.6

2.0 LIMITATIONS

Use of the Craft-Bilt Panel Craft Building Products Honeycomb and Polystyrene Sandwich Panels recognized in this report is subject to the following limitations:

2.1 Panel loading shall be limited to loads normal to the panel surfaces as indicated in Table 1 of this report. The panels are not for use to resist axial or diaphragm loading.

2.2 Construction plans, details, and calculations for wall and roof framing and panel attachments shall be approved by the building official before panel installation. Calculations and details shall be prepared by a registered design professional

where required by the statutes of the jurisdiction in which the project is to be constructed.

2.3 Roof and wall openings in the panels are out of the scope of recognition for this evaluation report.

2.4 Panel Craft Building Panels shall be installed without joints between panel ends.

2.5 The sandwich panels used as roof panels shall be installed at a roof slope of at least 1 inch per foot (1:12, 8.33 percent slope), and the effects of creep are beyond the scope of this report.

2.6 Minimum design roof live load is 10 psf (479 Pa) for patio covers associated with a one- and two-family dwelling unit and 20 psf (958 Pa) for carports and commercial roof structures.

2.7 Approved sealant or caulking shall be used at any penetrations made in the existing weather-resistant exterior wall or roof envelope.

2.8 Craft-Bilt Panel Craft Building Products' Honeycomb and Polystyrene Sandwich Panels are manufactured in Souderton, Pennsylvania.

3.0 PRODUCT USE

3.1 General: Panel Craft Building Products Honeycomb and Polystyrene Sandwich Panels shall comply with the applicable codes, the manufacturer's installation instructions, and this report. Where conflicts occur, the most restrictive shall govern.

3.2 Design: Panel Craft Building Panels shall be sized in accordance with Section 3.1 and Table 1 of this report and the manufacturer's installation instructions. The project location, corresponding code, and applicable design criteria, including risk category (IBC only), wind speed, wind exposure category, roof live load, ground snow load, seismic design category, and frost line depth shall be placed on the plans as required by the governing jurisdiction and be observed in the selection of the components.

3.3 Installation: Structures utilizing Panel Craft Building Panels shall be constructed by a Craft-Bilt Manufacturing Company approved dealer, in accordance with the installation instructions and any accompanying plans.

3.3.1 Flashing shall be installed in accordance with IBC Chapter 14 or IRC Section R703 and approved by the building official.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.





3.3.2 The roof covering, flashing, and underlayment shall be installed in accordance with IBC Chapter 15 and approved by the building official.

3.4 Panel Connection: Panel Craft Building Panels shall be joined longitudinally with aluminum H-shaped roof extrusions, caulked, and fastened in accordance with the manufacturer's installation instructions and any accompanying plans. Horizontal joints between the ends of panels are not allowed.

4.0 PRODUCT DESCRIPTION

4.1 General: Craft-Bilt Panel Craft Building Products: Honeycomb and Polystyrene Sandwich Panels are factory-assembled sandwich panels with aluminum facings. The panels are available with either honeycomb or expanded polystyrene (EPS) foam plastic cores. The panels with the honeycomb cores are available in 3-inch and 4½-inch (76 and 114 mm) thicknesses; the panels with the EPS cores are available in 3-inch, 4½-inch, and 6-inch (76.5, 114, and 152 mm) thicknesses. The panels are nominally 36 inches (914 mm) wide and are formed with a smooth longitudinal edge return as shown in Figure 1 of this report.

4.2 Panel Facings: The panel facings are fabricated from minimum 0.024-inch-thick aluminum sheets with a stucco embossed finish. The aluminum conforms to ASTM B209 3004 H374 alloy with a minimum yield strength of 25 ksi (172 MPa) and a minimum tensile strength of 32 ksi (220 MPa).

4.3 Panel Core

4.3.1 Honeycomb Core: The honeycomb core is an 11 percent resin-saturated 33 lbs. kraft paper. The honeycomb is expanded to a nominally ¾-inch cell size in accordance with the manufacturer's quality control system. The kraft paper has a flame-spread index of not more than 75 and a smoke-developed index of not more than 450 when tested in accordance with ASTM E84.

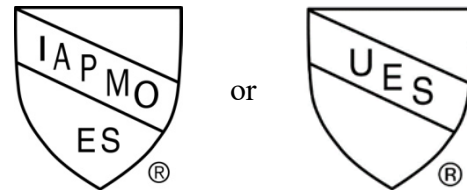
4.3.2 EPS Core: The expanded polystyrene core complies with ASTM C578 as Type II foam plastic and has a nominal density of 1.5 pcf (24 kg/m³). The foam plastic has a flame-spread index of not more than 75 and a smoke-developed index of not more than 450 when tested in accordance with ASTM E84.

4.4 Adhesive: Morad 640 or 642, Type II urethane adhesive meeting ASTM D2559 is used to bond the facings to the aluminum cores in accordance with the manufacturer's quality control system.

4.5 H-Stiffener: The H-Stiffeners installed between adjacent panels are fabricated from aluminum that conforms to ASTM B221 6063 T6 alloy with a minimum yield strength of 25 ksi (172 MPa) and a minimum tensile strength of 30 ksi (207 MPa).

5.0 IDENTIFICATION

Each Honeycomb and Polystyrene Sandwich Panel is identified by a label indicating the name of the manufacturer (Craft-Bilt Manufacturing Company) and address, the panel type, and the UES evaluation report number (ER-453). A die-stamp label may also substitute for the label. Either IAPMO UES Mark of Conformity may also be used as shown below:



IAPMO UES ER-453

Sealants shall be identified with the name of the sealant manufacturer; the product name and type; and the sealant expiration date.

6.0 SUBSTANTIATING DATA

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Sandwich Panels (AC04), approved June 2019, editorially revised December 2020.

6.2 Data in accordance with ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), approved June 2015 editorially revised December 2020

6.3 Quality control documentation.

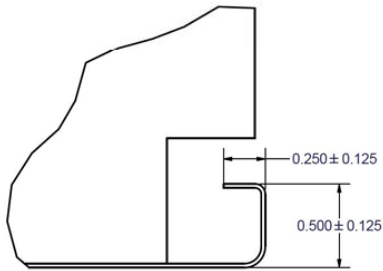
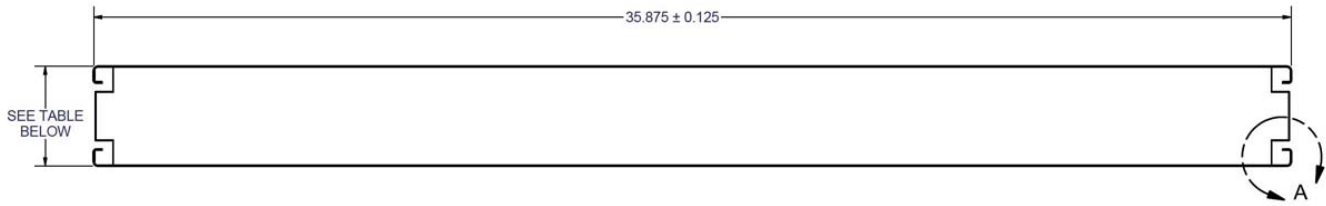
6.4 Reports of large-scale fire testing of interior finish material in accordance with UL 1715.

6.5 Test reports are from laboratories in compliance with ISO/IEC 17025.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on Craft-Bilt Panel Craft Building Products' Honeycomb and Polystyrene Sandwich Panels to assess their conformance to the codes shown in Section 1.0 of this report and documents the product's certification. The Sandwich Panels are produced at locations noted in Section 2.8 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org



DETAIL A
SCALE 2 : 1

PANEL THICKNESS:

1. 3.000 ± 0.125
2. 4.500 ± 0.125
3. 6.000 ± 0.125

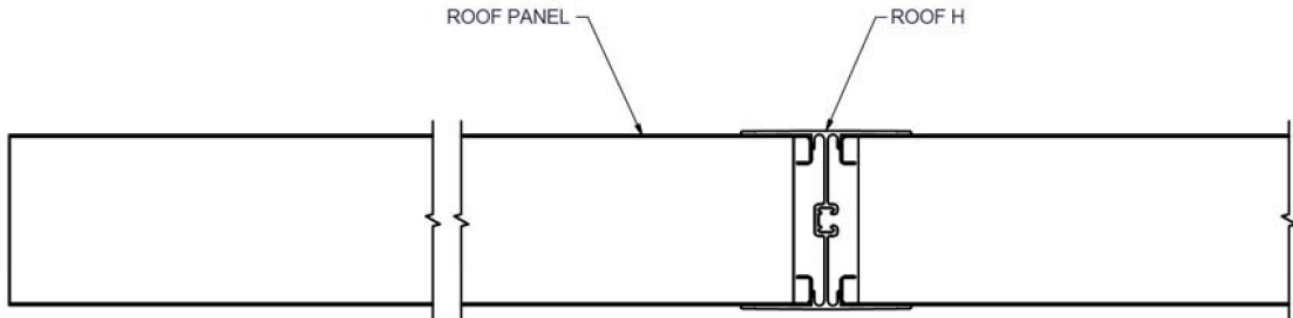


FIGURE 1
CRAFT BUILDING PRODUCTS SANDWICH PANELS



**TABLE 1
SPAN CHARTS FOR CRAFT BUILDING PRODUCTS SANDWICH PANELS**

ROOF SPAN CHARTS ^(3,4,5)

Maximum Spans for 3"-Thick Expanded Polystyrene Panels w/ Aluminum H-Stiffeners @ 36" o.c.

	Applied Pressure ^(1,2)												
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	60 psf	65 psf	70 psf
Uplift	14' - 0"	14' - 0"	13' - 10"	13' - 0"	12' - 1"	11' - 2"	10' - 3"	9' - 4"	8' - 5"	7' - 6"	6' - 7"	5' - 8"	4' - 9"
Down	14' - 0"	14' - 0"	13' - 9"	12' - 8"	11' - 8"	10' - 8"	9' - 8"	8' - 7"	7' - 7"	6' - 7"	5' - 6"	4' - 6"	3' - 6"

Maximum Spans for 4.5"-Thick Expanded Polystyrene Panels w/ Aluminum H-Stiffeners @ 36" o.c.

	Applied Pressure ^(1,2)												
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	60 psf	65 psf	70 psf
Uplift	18' - 0"	18' - 0"	17' - 9"	17' - 1"	16' - 5"	15' - 9"	15' - 1"	14' - 5"	13' - 8"	12' - 9"	11' - 10"	10' - 11"	10' - 0"
Down	18' - 0"	18' - 0"	17' - 9"	17' - 1"	16' - 0"	14' - 10"	13' - 8"	12' - 7"	11' - 5"	10' - 3"	9' - 1"	7' - 11"	6' - 9"

Maximum Spans for 6"-Thick Expanded Polystyrene Panels w/ Aluminum H-Stiffeners @ 36" o.c.

	Applied Pressure ^(1,2)												
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	60 psf	65 psf	70 psf
Uplift	19' - 0"	19' - 0"	19' - 0"	18' - 10"	18' - 2"	17' - 6"	16' - 9"	16' - 1"	15' - 5"	14' - 8"	14' - 0"	13' - 4"	12' - 8"
Down	19' - 0"	19' - 0"	18' - 10"	18' - 0"	17' - 2"	16' - 3"	15' - 5"	14' - 6"	13' - 8"	12' - 10"	11' - 11"	11' - 1"	10' - 2"

Maximum Spans for 6"-Thick Expanded Polystyrene Panels w/ Aluminum H-Stiffeners @ 18" o.c.

	Applied Pressure ^(1,2)												
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	60 psf	65 psf	70 psf
Uplift	19' - 0"	19' - 0"	19' - 0"	19' - 0"	19' - 0"	19' - 0"	18' - 9"	18' - 3"	17' - 9"	17' - 3"	16' - 9"	16' - 3"	15' - 9"
Down	19' - 0"	19' - 0"	19' - 0"	19' - 0"	19' - 0"	18' - 5"	17' - 9"	17' - 1"	16' - 6"	15' - 10"	15' - 2"	14' - 7"	13' - 10"

Maximum Spans for 3"-Thick Honeycomb Panels w/ Aluminum H-Stiffeners @ 36" o.c.

	Applied Pressure ^(1,2)												
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	60 psf	65 psf	70 psf
Uplift	14' - 0"	14' - 0"	13' - 9"	13' - 1"	12' - 5"	11' - 9"	11' - 1"	10' - 5"	9' - 9"	9' - 1"	8' - 5"	7' - 9"	7' - 1"
Down	14' - 0"	14' - 0"	13' - 9"	13' - 1"	12' - 5"	11' - 9"	11' - 1"	10' - 5"	9' - 7"	8' - 1"	6' - 7"	5' - 1"	3' - 7"

Maximum Spans for 4.5"-Thick Honeycomb Panels w/ Aluminum H-Stiffeners @ 36" o.c.

	Applied Pressure ^(1,2)												
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	60 psf	65 psf	70 psf
Uplift	16' - 0"	16' - 0"	16' - 0"	16' - 0"	15' - 9"	15' - 3"	14' - 10"	14' - 4"	13' - 10"	12' - 11"	12' - 0"	11' - 1"	10' - 2"
Down	16' - 0"	16' - 0"	16' - 0"	16' - 0"	15' - 9"	14' - 11"	13' - 10"	12' - 8"	11' - 6"	10' - 5"	9' - 3"	8' - 1"	7' - 0"

Notes:

1. Uplift = Maximum panel span for factored wind loads (psf upward) not exceeding the applied pressure.
2. Down = Maximum panel span for factored snow+live+dead+wind loads (psf downward) not exceeding the applied pressure.
3. Minimum panel projection slope is 1 inch/ft (1:12)
4. For shingle overlays, follow all manufacturers installation instructions and account for increase in dead load
5. Provided panel end bearing of 2 inches (for 3" panels) and 1.5 inches (for 4 1/2" & 6" panels).