



2022 GROUP B PROPOSED CHANGES TO THE I-CODES ROCHESTER COMMITTEE ACTION HEARINGS

March 27 - April 6, 2022

Rochester Riverside Convention Center, Rochester, NY

2021-2022 Code Development Cycle, Group B (2022) Proposed Changes to the 2021 *International Codes*

First Printing

Publication Date: February 2022

Copyright © 2022

by

International Code Council, Inc.

ALL RIGHTS RESERVED. This 2021-2022 Code Development Cycle, Group B (2022) Proposed Changes to the 2021 *International Codes* is a copyrighted work owned by the International Code Council, Inc. (“ICC”). Without advance written permission from the ICC, no part of this book may be reproduced, distributed, or transmitted in any form or by any means, including, without limitations, electronic, optical or mechanical means (by way of example and not limitation, photocopying, or recording by or in an information storage retrieval system). For information on use rights and permissions, please contact: ICC Publications, 4051 Flossmoor Road, Country Club Hills IL, 60478. Phone 1-888-ICC-SAFE (422-7233).

Trademarks: “International Code Council,” the “International Code Council” logo, “ICC,” the “ICC” logo and other names and trademarks appearing in this book are registered trademarks of the International Code Council, Inc., and/or its licensors (as applicable), and may not be used without permission.

PRINTED IN THE U.S.A.

IBC Fire Safety Code Change Proposals

The following code change proposals are labeled as Fire Safety code change proposals because they are proposals for changes to sections in chapters of the International Building Code that are designated as the responsibility of the IBC-Fire Safety Code Development Committee (see page xii of the Introductory pages of this monograph). However the changes included in this Group B code development cycle are to sections of the code that have been prefaced with a [S], meaning that they are the responsibility of a different IBC Code Development Committee—IBC-Structural Committee [S].

The committee assigned for each code change proposal is indicated in a banner statement near the beginning of the proposal.

FS1-22

IBC: 1401.1, [BS] 1402.3, 1404.1.1 (New), SECTION 1410 (New), 1410.1 (New), 1410.2 (New), 1410.3 (New), FIGURE 1410.3(1) (New), FIGURE 1410.3.1(2) (New), 1410.4 (New), TABLE 1410.4.2.4 (New), 1410.5 (New), 1410.6 (New), 1410.7 (New), 1410.7.1 (New), 1410.7.2 (New)

Proponents: T. Eric Stafford, representing Insurance Institute for Business and Home Safety (testafford@charter.net); Glenn Overcash, representing Federal Emergency Management Agency (glenn.overcash@aecom.com); Matthew Dobson, representing Vinyl Siding Institute (mdobson@vinylsiding.org); Pataya Scott, representing Federal Emergency Management Agency (pataya.scott@fema.dhs.gov)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

1401.1 Scope. The provisions of this chapter shall establish the minimum requirements for *exterior walls; exterior wall coverings; exterior wall openings; exterior windows and doors; exterior soffits and fascias;* and architectural *trim*.

[BS] **1402.3 Structural Wind resistance.** *Exterior walls, exterior wall coverings, exterior soffits, fascias,* and the associated openings, shall be designed and constructed to resist safely the superimposed *loads* required by Chapter 16.

Add new text as follows:

1404.1.1 Soffits and fascias. Soffits and fascias installed as part of roof overhangs shall comply with Section 1410.

SECTION 1410 **SOFFITS AND FASCIAS AT ROOF OVERHANGS**

1410.1 General. Soffits and fascias at roof overhangs shall be designed and constructed in accordance with the applicable provisions of this section.

1410.2 General wind requirements. Soffits and fascias shall be capable of resisting the component and cladding loads for walls determined in accordance with Chapter 16 using an effective wind area of 10 square feet (0.93 m²).

1410.3 Vinyl and aluminum soffit panels. Vinyl and aluminum soffit panels shall comply with Section 1410.2 and shall be installed using fasteners specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or subfascia component in accordance with Figure 1410.3.1(1). Where the unsupported span of soffit panels is greater than 12 inches (406 mm) where the design wind pressure is greater than 30 psf or greater than 16 inches where the wind pressure is 30 psf or less, intermediate nailing strips shall be provided in accordance with Figure 1410.3.1(2). Vinyl and aluminum soffit panels shall be installed in accordance with the manufacturer's installation instructions. Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or staples or other approved corrosion-resistant fasteners. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples, where permitted, shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire.

Fascia shall be installed in accordance with 1410.7

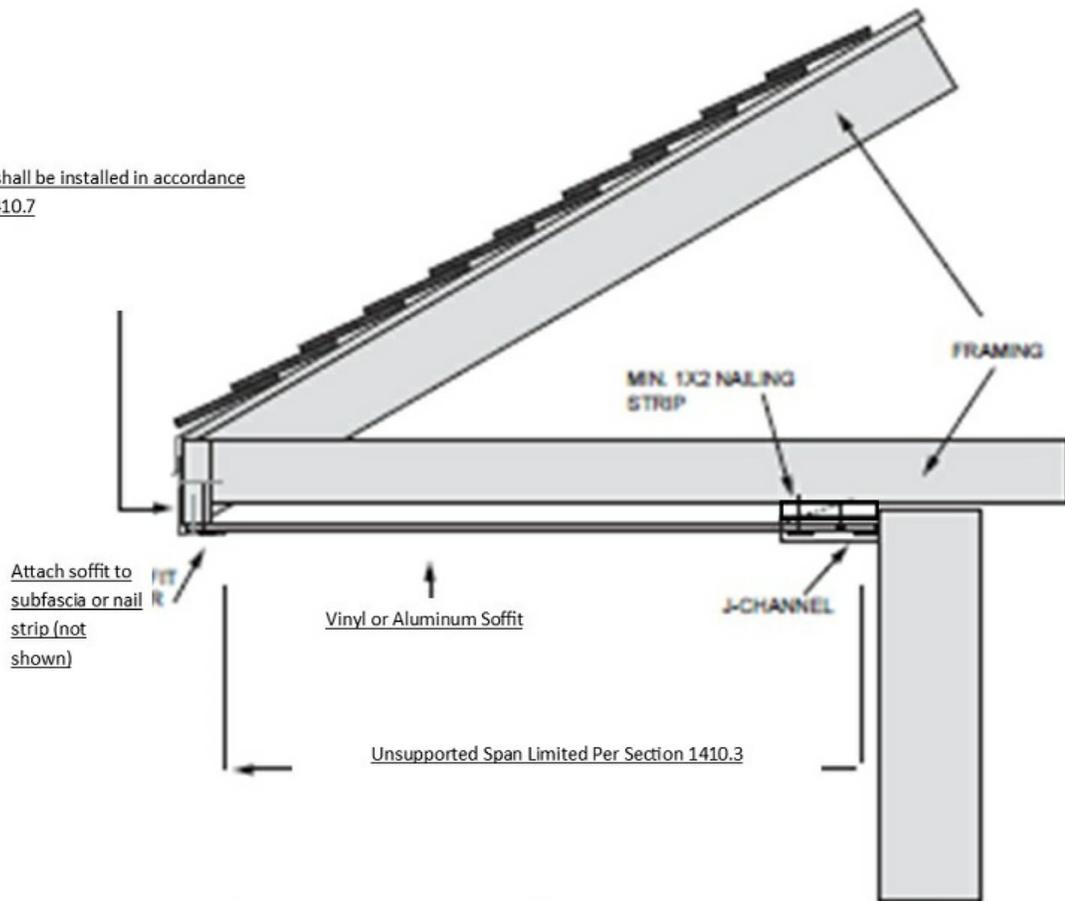


FIGURE 1410.3(1) SINGLE-SPAN VINYL OR ALUMINUM SOFFIT PANEL SUPPORT

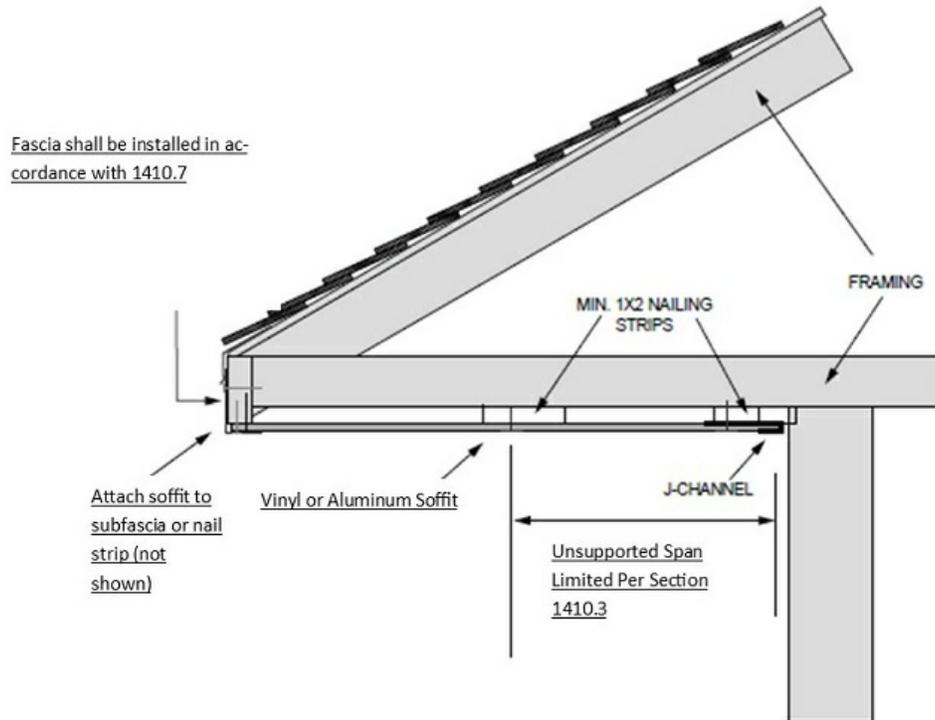


FIGURE 1410.3.1(2) DOUBLE-SPAN VINYL OR ALUMINU SOFFIT PANEL SUPPORT

1410.4 Fiber-cement soffit panels. Fiber-cement soffit panels shall comply with Section 1410.2 and shall be a minimum of 1/4 inch (6.4 mm) in thickness and comply with the requirements of ASTM C1186, Type A, minimum Grade II, or ISO 8336, Category A, minimum Class 2. Panel joints shall occur over framing or over wood structural panel sheathing. Soffit panels shall be installed with spans and fasteners in accordance with the manufacturer's installation instructions. Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or staples or other approved corrosion-resistant fasteners. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples, where permitted, shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire.

TABLE 1410.4.2.4 PRESCRIPTIVE ALTERNATE FOR WOOD STRUCTURAL PANEL SOFFIT^{b, c, d, e}

Maximum Design Pressure (+ or - psf)	Minimum Panel Span Rating	Minimum Panel Performance Category	Nail Type and Size	Fastener Spacing Along Edges and Intermediate Supports	
				Galvanized Steel	Stainless Steel
<u>30</u>	<u>24/0</u>	<u>3/8</u>	<u>6d box</u> (2 x 0.099 x 0.266 head diameter)	<u>6f</u>	<u>4</u>
<u>40</u>	<u>24/0</u>	<u>3/8</u>	<u>6d box</u> (2 x 0.099 x 0.266 head diameter)	<u>6</u>	<u>4</u>
<u>50</u>	<u>24/0</u>	<u>3/8</u>	<u>6d box</u> (2 x 0.099 x 0.266 head diameter)	<u>4</u>	<u>4</u>
			<u>8d common</u> (21/2 x 0.131 x 0.281 head diameter)	<u>6</u>	<u>6</u>
<u>60</u>	<u>24/0</u>	<u>3/8</u>	<u>6d box</u> (2 x 0.099 x 0.266 head diameter)	<u>4</u>	<u>3</u>
			<u>8d common</u> (21/2 x 0.131 x 0.281 head diameter)	<u>6</u>	<u>4</u>
<u>70</u>	<u>24/16</u>	<u>7/16</u>	<u>8d common</u> (21/2 x 0.131 x 0.281 head diameter)	<u>4</u>	<u>4</u>
			<u>10d box</u> (3 x 0.128 x 0.312 head diameter)	<u>6</u>	<u>4</u>
<u>80</u>	<u>24/16</u>	<u>7/16</u>	<u>8d common</u> (21/2 x 0.131 x 0.281 head diameter)	<u>4</u>	<u>4</u>
			<u>10d box</u> (3 x 0.128 x 0.312 head diameter)	<u>6</u>	<u>4</u>
<u>90</u>	<u>32/16</u>	<u>15/32</u>	<u>8d common</u> (21/2 x 0.131 x 0.281 head diameter)	<u>4</u>	<u>3</u>
			<u>10d box</u> (3 x 0.128 x 0.312 head diameter)	<u>6</u>	<u>4</u>

a. Fasteners shall comply with Section 1410.6.

b. Maximum spacing of soffit framing members shall not exceed 24 inches.

- c. Wood structural panels shall be of an exterior exposure grade.
- d. Wood structural panels shall be installed with strength axis perpendicular to supports with a minimum of two continuous spans.
- e. Wood structural panels shall be attached to soffit framing members with specific gravity of at least 0.42. Framing members shall be minimum 2x3 nominal with the larger dimension in the cross section aligning with the length of fasteners to provide sufficient embedment depths.
- f. Spacing at intermediate supports is permitted to be 12 inches on center.

1410.5 Hardboard soffit panels. Hardboard soffit panels shall comply with Section 1410.2 and shall be not less than 7/16 inch (11.11 mm) in thickness and fastened to framing or nailing strips to meet the required design wind pressures. Where the design wind pressure is 30 and less, hardboard soffit panels are permitted to be attached to wood framing with 2 1/2-inch by 0.113-inch (64 mm by 2.9 mm) siding nails spaced not more than 6 inches (152 mm) on center at panel edges and 12 inches (305 mm) on center at intermediate supports. Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or staples or other approved corrosion-resistant fasteners. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples, where permitted, shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire.

1410.6 Wood structural panel soffit. Wood structural panel soffits shall comply with Section 1410.2 and shall have minimum panel performance category of 3/8. Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or staples or other approved corrosion-resistant fasteners. Nails shall be T-head, modified round head, or round head with smooth or deformed shanks. Staples, where permitted, shall have a minimum crown width of 7/16 inch (11.1 mm) outside diameter and be manufactured of minimum 16-gage wire. Alternatively, wood structural panel soffits are permitted to attached to wood framing in accordance with Table 1410.6.

1410.7 Aluminum Fascia. Aluminum fascia shall comply with Section 1410.2 and shall be a minimum of 0.019 inches and installed in accordance with manufacturer's installation instructions. Fasteners shall be aluminum, galvanized, stainless steel or rust preventative coated nails or other approved corrosion-resistant fasteners. Aluminum fascia shall be attached to wood frame construction in accordance with Section 1410.7.1 or 1410.7.2.

1410.7.1 Fascia installation where the design wind pressure is 30 psf or less. Where the design wind pressure is 30 pounds per square foot (1.44kPA) or less, aluminum fascia shall be attached with one finish nail (1 ¼ x 0.057 x 0.177 head diameter) in the return leg spaced a maximum of 24 inches (610 mm) on center, and the fascia shall be inserted under the drip edge with at least 1 inch (305 mm) of fascia material covered by the drip edge. Where the fascia can not be inserted under the drip edge, the top edge of the fascia shall be secured using one finish nail (1 ¼ x 0.057 x 0.177 head diameter) located not more than 1 inch below the drip edge and spaced a maximum of 24 inches on center.

1410.7.2 Fascia installation where the design wind pressure exceeds 30 psf. Where the design wind pressure is greater than 30 pounds per square foot (1.44kPA), aluminum fascia shall be attached with one finish nail (1 ¼ x 0.057 x 0.177 head diameter) in the return leg spaced a maximum of 16 inches on center and one finish nail located no more than 1 inch below the drip edge spaced a maximum of 16 inches on center. As an alternative, the top edge of the fascia is permitted to be secured using utility trim installed beneath the drip edge with snap locks punched into the fascia spaced no more than 6 inches on center.

Reason Statement: The purpose of this code change proposal is to improve the wind performance of soffits and fascia by adding structural design requirements and compliant installation options to the International Building Code (IBC). As part of the response to Hurricane Michael in Florida, the Federal Emergency Management Agency (FEMA) deployed a Mitigation Assessment Teams (MAT) composed of national and regional building science experts who assess building performance after a disaster. These experts then incorporate lessons learned to make recommendations on improving the resilience of new construction and repairs and retrofits of existing buildings.

The following MAT-related conclusion, recommendation and supporting observations are included in FEMA P-2077, Hurricane Michael in Florida MAT Report (https://www.fema.gov/sites/default/files/2020-07/mat-report_hurricane-michael_florida.pdf). **The Hurricane Michael in Florida MAT concluded (see FL-23) that “buildings throughout the impacted area were found to be vulnerable to wind-driven rain and water infiltration.”** The MAT observed wind-driven rain and water infiltration at many buildings. These vulnerabilities can lead to extensive damage and disruption of normal building operations. The MAT Report also recommended (see FL-23d) that **“designers, contractors, and inspectors should place more emphasis on proper soffit installation”** and **“should adapt the guidance in Hurricane Irma in Florida Recovery Advisory 2, Soffit Installation in Florida** (in FEMA P-2023, 2018g), **Hurricane Michael in Florida Recovery Advisory 2, Best Practices for Minimizing Wind and Water Infiltration Damage** (in FEMA P-2077, 2019a), **and Technical Fact Sheet 7.5, “Minimizing Water Intrusion through Roof Vents in High-Wind Regions”** (in FEMA P-499, 2010f) **to non-residential applications to help prevent soffit blow-off.”**

Observations of non-residential soffit failure that led to water infiltration include the University of Florida Institute of Food and Agricultural Sciences Bay County Extension Building (Panama City, FL) shown below (MAT Report Figure 5-16). Several vinyl soffit panels were also blown away from the wood frame roof overhang, thereby exposing the attic space to entrance of wind-driven rain. Interior water intrusion was exacerbated by loss of roof top equipment and leakage at hip closures which led to collapse of the gypsum ceiling.



Another non-residential soffit failure at roof overhang is documented at the Bay County Courthouse addition (MAT Report Figure 5-110, shown below) where repairs to interior damages caused by the soffit breach, roof membrane damage, and flashing deficiencies at the ridge and hips were estimated to cost \$477,000.



In addition the Vinyl Siding Institute has noted in several analysis reports from Hurricanes over the past several years, including Irma and Isaias that this an issue that needs to be addressed due to failures in the field.



Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal provides some clarity on the required wind loads and material specifications for soffits. The code change proposal may decrease costs for wood structural panel soffits because it provides some prescriptive solutions as an alternative to design.

FS1-22

FS2-22

IBC: [BS] 1402.3.1 (New)

Proponents: Theresa Weston, representing Rainscreen Association in North America (RAiNA) (holtweston88@gmail.com)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Add new text as follows:

[BS] 1402.3.1 Veneer attachment. Veneers shall be attached as specified in Section 1404. For veneers not specified in Section 1404, attachments and associated support systems shall be designed as specified in Chapter 16 and installed in accordance with manufacturer's instructions.

Reason Statement: New claddings that do not directly fit into the wall covering materials currently specified in the code are being introduced to the market. Some of these new claddings are rainscreen systems which provide drainage and ventilation functionality in addition to other cladding functions. The attachment of such claddings need to be designed to resist loads and maintain their performance safely. This proposal provides the "roadmap" to the code requirements for the design of the attachment of these claddings.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This proposal does not add new requirements to the code. Rather, it highlights the the appropriate compliance requirements already in the code for materials that are not directly specified in the code. Therefore, it does not increase or decrease the cost of construction.

FS2-22

FS3-22

IBC: [BS] 1404.6, [BS] 1404.6.1, [BS] 1404.6.2, [BS] 1404.10

Proponents: Phillip Samblanet, representing The Masonry Society (psamblanet@masonrysociety.org); Jason Thompson, representing Masonry Alliance for Codes and Standards (jthompson@ncma.org)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BS] 1404.6 Anchored masonry veneer. *Anchored masonry veneer* shall comply with the provisions of Sections 1404.6 through 1404.9 and Sections ~~12-1~~ 13.1 and ~~12-2~~ 13.2 of TMS 402.

[BS] 1404.6.1 Tolerances. *Anchored masonry veneers* in accordance with Chapter 14 are not required to meet the tolerances in Article 3.3 ~~F4G~~ of TMS 602.

Delete without substitution:

[BS] 1404.6.2 Seismic requirements. *Anchored masonry veneer* located in *Seismic Design Category C, D, E or F* shall conform to the requirements of Section ~~12.2.2.11~~ of TMS 402.

Revise as follows:

[BS] 1404.10 Adhered masonry veneer. *Adhered masonry veneer* shall comply with the applicable requirements in this section and Sections ~~12-1~~ 13.1 and ~~12-3~~ 13.2 of TMS 402.

Reason Statement: Chapter 12 (Veneer) in TMS 402-16 was moved to Chapter 13 in TMS 402-22. Similarly, the tolerances in TMS 602 were relocated. The changes proposed here reflect those revisions.

In addition, the basis for the Veneer provisions in TMS 402 were modified to be more rationally based. Seismic design requirements are now integrally incorporated into the veneer provisions of TMS 402. As such, IBC Section 1404.6.2 is not needed any longer as these seismic requirements are adopted by the general reference in IBC Section 1404.6.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This change simply updates section references. As such, there is no impact on construction costs.

FS3-22

FS4-22

IBC: [BS] 1404.14

Proponents: Matthew Dobson, representing Vinyl Siding Institute (mdobson@vinylsiding.org)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BS] 1404.14 Vinyl siding and Insulated Vinyl Siding. *Vinyl siding and insulated vinyl siding* conforming to the requirements of this section and complying with ASTM D3679 and ASTM D7793, respectively, shall be permitted on *exterior walls* where the design wind pressure determined in accordance with Section 1609 does not exceed 30 pounds per square foot (1.44 kN/m²). Where the design wind pressure exceeds 30 pounds per square foot (1.44 kN/m²), tests or calculations indicating compliance with Chapter 16 shall be submitted. Vinyl siding and insulated vinyl siding shall be secured to the building so as to provide weather protection for the *exterior walls* of the building.

Reason Statement: This change compliments FS134 which was been fully approved last year by the IBC fire safety committee, the introduction of ASTM D7793 and insulated vinyl siding into the IBC. The installation of vinyl siding and insulated vinyl siding are identical relative to code requirements. This proposal brings in a simple change to require insulated vinyl siding to be installed in the same manner as vinyl siding.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This change adds in installation requirements for when the product is specified without any technical changes.

FS4-22

FS5-22

IBC: [BS] 1404.14

Proponents: Matthew Dobson, representing Vinyl Siding Institute

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BS] 1404.14 Vinyl siding. Vinyl siding conforming to the requirements of this section and complying with ASTM D3679 shall be permitted on *exterior walls* where the design wind pressure determined in accordance with Section 1609 does not exceed 30 pounds per square foot (1.44 kN/m²). Where the design wind pressure exceeds 30 pounds per square foot (1.44 kN/m²), tests or calculations indicating compliance with Chapter 16 shall be submitted. ~~Vinyl siding shall be secured to the building so as to provide weather protection for the exterior walls of the building.~~

Reason Statement: This sentence is not necessary as it is redundant to specific provisions already provided including in this sections as well as the broader code and definition for exterior wall covering.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a cleanup change.

FS5-22

FS6-22

IBC: [BS] 1404.14.1, 1404.14.1.1 (New), 1404.14.1.1.1 (New), 1404.14.1.1.2 (New)

Proponents: Matthew Dobson, representing Vinyl Siding Institute (mdobson@vinylsiding.org)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BS] 1404.14.1 Application. The siding shall be applied over sheathing or materials listed in Section 2304.6. Siding shall be applied over a te
~~conform to the water-resistive barrier~~ in accordance with requirements in Section 1402.5. Siding and accessories shall be installed in accordance with the *approved* manufacturer's instructions.

Add new text as follows:

1404.14.1.1 Accessories. Accessories must be installed in accordance with the *approved* manufacturer's instructions.

1404.14.1.1.1 Starter Strip. Horizontal siding shall be installed with a starter strip at the initial course at any location.

1404.14.1.1.2 Utility Trim. Under windows, and at top of walls, utility trim shall be used with snap locks.

Reason Statement: This addition brings in critical installation elements for vinyl siding, insulated vinyl siding, and polypropylene siding that sometime ignored by installers. Including these provisions will help to ensure proper installation. The two critical applications are important to highlight as they are part of the wind performance system. In some instances, systems have been installed in high wind events incorrectly resulting in product performance failure. These are standard installation procedures for horizontal polymeric cladding.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
These are standard installation practices that are not being followed in some cases but need to be followed for proper product performance.

FS6-22

FS7-22

IBC: 1404.14.2 (New), TABLE 1404.14.2 (New)

Proponents: Jay Crandell, P.E., ABTG/ARES Consulting, representing Foam Sheathing Committee of the American Chemistry Council
(jcrandell@aresconsulting.biz)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Add new text as follows:

1404.14.2 Installation over foam plastic insulating sheathing. Where vinyl siding or insulated vinyl siding is installed over foam plastic insulating sheathing, the vinyl siding shall comply with Section 1404.14 and shall have a wind load design pressure rating in accordance with Table 1404.14.2.

Exceptions:

1. Where the foam plastic insulating sheathing is applied directly over wood structural panels, fiberboard, gypsum sheathing or other approved backing capable of independently resisting the design wind pressure, the vinyl siding shall be installed in accordance with Section 1404.14.1.
2. Where the vinyl siding manufacturer's product specifications provide an approved wind load design pressure rating for installation over foam plastic insulating sheathing, use of this wind load design pressure rating shall be permitted and the siding shall be installed in accordance with the manufacturer's installation instructions.
3. Where the foam plastic insulating sheathing and its attachment has a design wind pressure resistance complying with Sections 2603.10 and 1609, the vinyl siding shall be installed in accordance with Section 1404.14.1.

TABLE 1404.14.2 REQUIRED MINIMUM WIND LOAD DESIGN PRESSURE RATING FOR VINYL SIDING INSTALLED OVER FOAM PLASTIC SHEATHING ALONE

ULTIMATE DESIGN WIND SPEED (MPH)	ADJUSTED MINIMUM DESIGN WIND PRESSURE (ASD) (PSF) ^{a, b}					
	Case 1: With interior gypsum wallboard ^c			Case 2: Without interior gypsum wallboard ^c		
	Exposure			Exposure		
	B	C	D	B	C	D
≤ 95	-30.0	-33.2	-39.4	-33.9	-47.4	-56.2
100	-30.0	-36.8	-43.6	-37.2	-52.5	-62.2
105	-30.0	-40.5	-48.1	-41.4	-57.9	-68.6
110	-31.8	-44.5	-52.8	-45.4	-63.5	-75.3
115	-35.5	-49.7	-59.0	-50.7	-71.0	-84.2
120	-37.4	-52.4	-62.1	-53.4	-74.8	-88.6
130	-44.9	-62.8	-74.5	-64.1	-89.7	-106
> 130	See Note d					

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m², 1 mile per hour = 0.447 m/s, 1 pound per square foot = 0.0479 kPa.

- a. Linear interpolation is permitted.
- b. The table values are based on a maximum 30-foot mean roof height, and effective wind area of 10 square feet Wall Zone 5 (corner), and the ASD design component and cladding wind pressure determined in accordance with Section 1609 multiplied by the following adjustment factors: 1.87 (Case 1) and 2.67 (Case 2).
- c. Gypsum wallboard, gypsum panel product or equivalent.
- d. For the indicated wind speed condition and where foam sheathing is the only sheathing on the exterior of a frame wall with vinyl siding, the wall assembly shall be capable of resisting an impact without puncture at least equivalent to that of a wood frame wall with minimum 7/16 - inch OSB sheathing as tested in accordance with ASTM E1886. The vinyl siding shall comply with an adjusted design wind pressure requirement in accordance with Note b, using an adjustment factor of 2.67.

Reason Statement: This proposal coordinates the IBC with provisions already in the IRC (Section R703.11.2) and in ASTM D3679 for specification of vinyl siding. These provisions are supported by collaborative research including wind pressure testing of assemblies and full-scale wind tunnel tests of whole buildings with various combinations of vinyl siding and foam sheathing (see Bibliography). For buildings meeting criteria for Type V construction (where vinyl siding is permissible in the IBC), this proposal provides needed wind load pressure rating requirements for vinyl siding installed on walls that also use foam sheathing as continuous insulation for energy code compliance.

Bibliography: Please refer to the following reports and presentation for technical substantiation of the proposal (and the current identical provisions in the 2015-2021 editions of the IRC):

1. https://ibhs.org/wp-content/uploads/wpmembers/files/Wind-Loads-Multi-Layer-Wall-Systems-Air-Permeable-Exterior-Cladding_IBHS.pdf (full-scale wind tunnel study; ACI/SEI paper by IBHS, ACC, VSI, and NAHB Research Center)
2. <https://www.nrel.gov/docs/fy13osti/55204.pdf> (DOE Building America report on tests by NAHB Research Center)
3. https://www.energy.gov/sites/prod/files/2013/12/f6/wind_pressure_perf.pdf (presentation of DOE research and testing project results)

Cost Impact: The code change proposal will increase the cost of construction. This proposal will increase cost for use of vinyl siding on Type V buildings by requiring use of a higher wind pressure rated vinyl siding when applied over foam sheathing. However, there is no cost increase for the common condition where foam sheathing is installed over a separate sheathing material (e.g., wood structural panel, gypsum sheathing, etc.) separately capable of resting the full design wind load (see Exception 1).

FS8-22

IBC: [BS] 1404.17, [BS] 2603.11, [BS] 2603.12, [BS] 2603.12.1, TABLE 2603.12.1, [BS] 2603.12.2, TABLE 2603.12.2, [BS] 2603.13, [BS] 2603.13.1, TABLE 2603.13.1, [BS] 2603.13.2, TABLE 2603.13.2

Proponents: Rob Brooks, representing DuPont (rob@rtbrooks.com)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BS] 1404.17 Fastening. Weather boarding and wall coverings shall be securely fastened with aluminum, copper, zinc, zinc-coated or other *approved* corrosion-resistant fasteners in accordance with the nailing schedule in Table 2304.10.2 or the *approved* manufacturer's instructions. Shingles and other weather coverings shall be attached with appropriate standard-shingle nails to furring strips securely nailed to studs, or with *approved* mechanically bonding nails, except where sheathing is of wood not less than 1-inch (25 mm) nominal thickness or of *wood structural panels* as specified in Table 2308.6.3(3). Fastening of claddings or furring through foam plastic insulating sheathing shall comply with Section 1404.17.1, 1404.17.2, or 1404.17.3 as applicable.

[BS] ~~2603.12~~ 1404.17.1 Cladding attachment over foam sheathing to masonry or concrete wall construction. Cladding shall be specified and installed in accordance with this Chapter ~~14~~ and the cladding manufacturer's installation instructions or an approved design. Foam sheathing shall be attached to masonry or concrete construction in accordance with the insulation manufacturer's installation instructions or an approved design. Furring and furring attachments through foam sheathing shall be designed to resist design *loads* determined in accordance with Chapter 16, including support of cladding weight as applicable. Fasteners used to attach cladding or furring through foam sheathing to masonry or concrete substrates shall be approved for application into masonry or concrete material and shall be installed in accordance with the fastener manufacturer's installation instructions.

Exceptions:

1. Where the cladding manufacturer has provided approved installation instructions for application over foam sheathing and connection to a masonry or concrete substrate, those requirements shall apply.
2. For *exterior insulation and finish systems*, refer to Section 1407.
3. For anchored masonry or stone *veneer* installed over foam sheathing, refer to Section 1404.

[BS] ~~2603.12~~ 1404.17.2 Cladding attachment over foam sheathing to cold-formed steel framing. Cladding shall be specified and installed in accordance with this Chapter ~~14~~ and the cladding manufacturer's approved installation instructions, including any limitations for use over foam plastic sheathing, or an approved design. Where used, furring and furring attachments shall be designed to resist design *loads* determined in accordance with Chapter 16. In addition, the cladding or furring attachments through foam sheathing to cold-formed steel framing shall meet or exceed the minimum fastening requirements of Sections 1404.17.2.1 ~~2603.12.1~~ and 1404.17.2.2 ~~2603.12.2~~, or an approved design for support of cladding weight.

Exceptions:

1. Where the cladding manufacturer has provided approved installation instructions for application over foam sheathing, those requirements shall apply.
2. For *exterior insulation and finish systems*, refer to Section 1407.
3. For anchored masonry or stone *veneer* installed over foam sheathing, refer to Section 1404.

[BS] ~~2603.12.1~~ 1404.17.2.1 Direct attachment. Where cladding is installed directly over foam sheathing without the use of furring, cladding minimum fastening requirements to support the cladding weight shall be as specified in Table ~~2603.12.1~~ 1404.17.2.1.

TABLE ~~2603.12.1~~ 1404.17.2.1 CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a

CLADDING FASTENER THROUGH FOAM SHEATHING INTO:	CLADDING FASTENER TYPE AND MINIMUM SIZE ^b	CLADDING FASTENER VERTICAL SPACING (inches)	MAXIMUM THICKNESS OF FOAM SHEATHING ^c (inches)							
			16" o.c. fastener horizontal spacing				24" o.c. fastener horizontal spacing			
			Cladding weight				Cladding weight			
			3 psf	11 psf	18 psf	25 psf	3 psf	11 psf	18 psf	25 psf
Cold-formed steel framing (minimum penetration of steel thickness plus 3 threads)	#8 screw into 33 mil steel or thicker	6	3.00	2.95	2.20	1.45	3.00	2.35	1.25	DR
		8	3.00	2.55	1.60	0.60	3.00	1.80	DR	DR
		12	3.00	1.80	DR	DR	3.00	0.65	DR	DR
	#10 screw into 33 mil steel	6	4.00	3.50	2.70	1.95	4.00	2.90	1.70	0.55
		8	4.00	3.10	2.05	1.00	4.00	2.25	0.70	DR
		12	4.00	2.25	0.70	DR	3.70	1.05	DR	DR
	#10 screw into 43 mil steel or thicker	6	4.00	4.00	4.00	3.60	4.00	4.00	3.45	2.70
		8	4.00	4.00	3.70	3.00	4.00	3.85	2.80	1.80
		12	4.00	3.85	2.80	1.80	4.00	3.05	1.50	DR

For SI: 1 inch = 25.4 mm, 1 pound per square foot (psf) = 0.0479 kPa, 1 pound per square inch = 0.00689 MPa.

DR = design required, o.c. = on center.

- a. Cold-formed steel framing shall be minimum 33 ksi steel for 33 mil and 43 mil steel and 50 ksi steel for 54 mil steel or thicker.
- b. Screws shall comply with the requirements of AISI S240.
- c. Foam sheathing shall have a minimum compressive strength of 15 pounds per square inch in accordance with ASTM C587 or ASTM C1289.

[BS] ~~2603.12.2~~ 1404.17.2.2 Furred cladding attachment. Where steel or wood furring is used to attach cladding over foam sheathing, furring minimum fastening requirements to support the cladding weight shall be as specified in Table ~~2603.12.2~~ 1404.17.2.2. Where placed horizontally, wood furring shall be *preservative-treated wood* in accordance with Section 2303.1.9 or *naturally durable wood* and fasteners shall be corrosion resistant in accordance Section 2304.10.6. Steel furring shall have a minimum G60 galvanized coating.

TABLE 2603-12-2 1404.17.2.2 FURRING MINIMUM FASTENING REQUIREMENTS FOR APPLICATION OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a

FURRING MATERIAL	FRAMING MEMBER	FASTENER TYPE AND MINIMUM SIZE ^b	MINIMUM PENETRATION INTO WALL FRAMING (inches)	FASTENER SPACING IN FURRING (inches)	MAXIMUM THICKNESS OF FOAM SHEATHING ^d (inches)							
					16" o.c. furring ^e				24" o.c. furring ^e			
					Cladding weight				Cladding weight			
					3 psf	11 psf	18 psf	25 psf	3 psf	11 psf	18 psf	25 psf
Minimum 33 mil steel furring or minimum 1x wood furring ^c	33 mil cold-formed steel stud	#8 screw	Steel thickness plus 3 threads	12	3.00	1.80	DR	DR	3.00	0.65	DR	DR
				16	3.00	1.00	DR	DR	2.85	DR	DR	DR
				24	2.85	DR	DR	DR	2.20	DR	DR	DR
		#10 screw	Steel thickness plus 3 threads	12	4.00	2.25	0.70	DR	3.70	1.05	DR	DR
				16	3.85	1.45	DR	DR	3.40	DR	DR	DR
				24	3.40	DR	DR	DR	2.70	DR	DR	DR
	43 mil or thicker cold-formed steel stud	#8 Screw	Steel thickness plus 3 threads	12	3.00	1.80	DR	DR	3.00	0.65	DR	DR
				16	3.00	1.00	DR	DR	2.85	DR	DR	DR
				24	2.85	DR	DR	DR	2.20	DR	DR	DR
		#10 screw	Steel thickness plus 3 threads	12	4.00	3.85	2.80	1.80	4.00	3.05	1.50	DR
				16	4.00	3.30	1.95	0.60	4.00	2.25	DR	DR
				24	4.00	2.25	DR	DR	4.00	0.65	DR	DR

For SI: 1 inch = 25.4 mm, 1 pound per square foot (psf) = 0.0479 kPa, 1 pound per square inch = 0.00689 MPa.

DR = Design Required, o.c. = on center.

- a. Wood furring shall be spruce-pine-fir or any softwood species with a specific gravity of 0.42 or greater. Steel furring shall be minimum 33 ksi steel. Coldformed steel studs shall be minimum 33 ksi steel for 33 mil and 43 mil thickness and 50 ksi steel for 54 mil steel or thicker.
- b. Screws shall comply with the requirements of AISI S240.
- c. Where the required cladding fastener penetration into wood material exceeds 3/4 inch and is not more than 1 1/2 inches, a minimum 2-inch nominal wood furring or an approved design shall be used.
- d. Foam sheathing shall have a minimum compressive strength of 15 pounds per square inch in accordance with ASTM C587 or ASTM C1289.
- e. Furring shall be spaced not more than 24 inches on center, in a vertical or horizontal orientation. In a vertical orientation, furring shall be located over wall studs and attached with the required fastener spacing. In a horizontal orientation, the indicated 8-inch and 12-inch fastener spacing in furring shall be achieved by use of two fasteners into studs at 16 inches and 24 inches on center, respectively.

[BS] 2603-13 1404.17.3 Cladding attachment over foam sheathing to wood framing. Cladding shall be specified and installed in accordance with this Chapter 14 and the cladding manufacturer's installation instructions. Where used, furring and furring attachments shall be designed to resist design loads determined in accordance with Chapter 16. In addition, the cladding or furring attachments through foam sheathing to framing shall meet or exceed the minimum fastening requirements of Section 2603-13-1 1404.17.3.1 or 2603-13-2 1404.17.3.2, or an approved design for support of cladding weight.

Exceptions:

- 1. Where the cladding manufacturer has provided approved installation instructions for application over foam sheathing, those requirements shall apply.
- 2. For exterior insulation and finish systems, refer to Section 1407.
- 3. For anchored masonry or stone veneer installed over foam sheathing, refer to Section 1404.

[BS] 2603-13-1 1404.17.3.1 Direct attachment. Where cladding is installed directly over foam sheathing without the use of furring, minimum fastening requirements to support the cladding weight shall be as specified in Table 2603-13-1 1404.17.3.1.

TABLE ~~2603.13.1~~ 1404.17.3.1 CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a

CLADDING FASTENER THROUGH FOAM SHEATHING INTO:	CLADDING FASTENER TYPE AND MINIMUM SIZE ^b	CLADDING FASTENER VERTICAL SPACING (INCHES)	MAXIMUM THICKNESS OF FOAM SHEATHING ^c (INCHES)							
			16" o.c. fastener horizontal spacing				24" o.c. fastener horizontal spacing			
			Cladding weight:				Cladding weight:			
			3 psf	11 psf	18 psf	25 psf	3 psf	11 psf	18 psf	25 psf
Wood Framing (minimum 1 ¹ / ₄ - inch penetration)	0.113" diameter nail	6	2.00	1.45	0.75	DR	2.00	0.85	DR	DR
		8	2.00	1.00	DR	DR	2.00	0.55	DR	DR
		12	2.00	0.55	DR	DR	1.85	DR	DR	DR
	0.120" diameter nail	6	3.00	1.70	0.90	0.55	3.00	1.05	0.50	DR
		8	3.00	1.20	0.60	DR	3.00	0.70	DR	DR
		12	3.00	0.70	DR	DR	2.15	DR	DR	DR
	0.131" diameter nail	6	4.00	2.15	1.20	0.75	4.00	1.35	0.70	DR
		8	4.00	1.55	0.80	DR	4.00	0.90	DR	DR
		12	4.00	0.90	DR	DR	2.70	0.50	DR	DR
	0.162" diameter nail	6	4.00	3.55	2.05	1.40	4.00	2.25	1.25	0.80
		8	4.00	2.55	1.45	0.95	4.00	1.60	0.85	0.50
		12	4.00	1.60	0.85	0.50	4.00	0.95	DR	DR

For SI: 1 inch = 25.4 mm, 1 pound per square foot (psf) = 0.0479 kPa.

DR = Design Required, o.c. = on center.

- a. Wood framing shall be spruce-pine-fir or any wood species with a specific gravity of 0.42 or greater in accordance with ANSI/AWC NDS.
- b. Nail fasteners shall comply with ASTM F1667, except nail length shall be permitted to exceed ASTM F1667 standard lengths.
- c. Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C587 or ASTM C1289.

[BS] ~~2603.13.2~~ 1404.17.3.2 Furred cladding attachment. Where wood furring is used to attach cladding over foam sheathing, furring minimum fastening requirements to support the cladding weight shall be as specified in Table ~~2603.13.2~~ 1404.17.3.2. Where placed horizontally, wood furring shall be *preservative-treated wood* in accordance with Section 2303.1.9 or *naturally durable wood* and fasteners shall be corrosion resistant in accordance with Section 2304.10.6 .

TABLE 2603-13-2 1404.17.3.2 FURRING MINIMUM FASTENING REQUIREMENTS FOR APPLICATION OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^{a, b}

FURRING MATERIAL	FRAMING MEMBER	FASTENER TYPE AND MINIMUM SIZE	MINIMUM PENETRATION INTO WALL FRAMING (INCHES)	FASTENER SPACING IN FURRING (INCHES)	MAXIMUM THICKNESS OF FOAM SHEATHING ^d (INCHES)							
					16" o.c. furring ^e				24" o.c. furring ^e			
					Siding weight:				Siding weight:			
					3 psf	11 psf	18 psf	25 psf	3 psf	11 psf	18 psf	25 psf
Minimum 1x Wood Furring ^c	Minimum 2x Wood Stud	0.131" diameter nail	1 ¹ / ₄	8	4.00	2.45	1.45	0.95	4.00	1.60	0.85	DR
				12	4.00	1.60	0.85	DR	4.00	0.95	DR	DR
				16	4.00	1.10	DR	DR	3.05	0.60	DR	DR
		0.162" diameter nail	1 ¹ / ₄	8	4.00	4.00	2.45	1.60	4.00	2.75	1.45	0.85
				12	4.00	2.75	1.45	0.85	4.00	1.65	0.75	DR
				16	4.00	1.90	0.95	DR	4.00	1.05	DR	DR
	No. 10 wood screw	1	12	4.00	2.30	1.20	0.70	4.00	1.40	0.60	DR	
			16	4.00	1.65	0.75	DR	4.00	0.90	DR	DR	
			24	4.00	0.90	DR	DR	2.85	DR	DR	DR	
	1/4" lag screw	1 ¹ / ₂	12	4.00	2.65	1.50	0.90	4.00	1.65	0.80	DR	
			16	4.00	1.95	0.95	0.50	4.00	1.10	DR	DR	
			24	4.00	1.10	DR	DR	3.25	0.50	DR	DR	

For SI: 1 inch = 25.4 mm, 1 pound per square foot (psf) = 0.0479 kPa, 1 pound per square inch = 0.00689 MPa.

DR = Design Required, o.c. = on center.

- a. Wood framing and furring shall be spruce-pine-fir or any wood species with a specific gravity of 0.42 or greater in accordance with ANSI/AWC NDS.
- b. Nail fasteners shall comply with ASTM F1667, except nail length shall be permitted to exceed ASTM F1667 standard lengths.
- c. Where the required cladding fastener penetration into wood material exceeds 3/4 inch and is not more than 1 1/2 inches, a minimum 2-inch nominal wood furring or an approved design shall be used.
- d. Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C587 or ASTM C1289.
- e. Furring shall be spaced not greater than 24 inches on center in a vertical or horizontal orientation. In a vertical orientation, furring shall be located over wall studs and attached with the required fastener spacing. In a horizontal orientation, the indicated 8-inch and 12-inch fastener spacing in furring shall be achieved by use of two fasteners into studs at 16 inches and 24 inches on center, respectively.

Reason Statement: Fastening of cladding through foam sheathing is currently specified in Chapter 26, but it is optimally located in the cladding attachment provisions of Chapter 14. This proposal relocates the foam sheathing cladding attachment tables from Chapter 26 to Chapter 14. The following list provides the section number revisions:

2603.11 becomes 1404.17.1

2603.12 becomes 1404.17.2

2603.12.1 becomes 1404.17.2.1

2603.12.2 becomes 1404.17.2.2

2603.13 becomes 1404.17.3

2603.13.1 becomes 1404.17.3.1

2603.13.2 becomes 1404.17.3.2

No technical revisions are provided other than section number revisions and editorial reference to "this Chapter" instead of "Chapter 14".

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This is simply relocating text from Chapter 26 to Chapter 14 and will not increase nor decrease cost.

FS9-22

IBC: [BS] 1404.17

Proponents: Jay Crandell, P.E., ABTG/ARES Consulting, representing Foam Sheathing Committee of the American Chemistry Council (jcrandell@aresconsulting.biz)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BS] 1404.5 ~~1404.17~~ Fastening. Weather boarding and wall coverings shall be securely fastened with aluminum, copper, zinc, zinc-coated or other *approved* corrosion-resistant fasteners in accordance with the nailing schedule in Table 2304.10.2 or the *approved* manufacturer's instructions. Shingles and other weather coverings shall be attached with appropriate standard-shingle nails to furring strips securely nailed to studs, or with *approved* mechanically bonding nails, except where sheathing is of wood not less than 1-inch (25 mm) nominal thickness or of *wood structural panels* as specified in Table 2308.6.3(3).

Reason Statement: This proposal moves Section 1404.17 to Section 1404.5 without making technical changes. The fastening requirements for exterior wall coverings apply across multiple cladding types and should be located earlier in Section 1404, prior to addressing the specific claddings. This approach is consistent with the approach taken in the IRC and for other similar requirements in the IBC such as water-resistive barriers and flashing that apply to multiple exterior wall covering conditions.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a formatting change with no change to requirements or cost.

FS9-22

FS10-22

IBC: [BS] 1404.17

Proponents: Jay Crandell, P.E., ABTG/ARES Consulting, representing Foam Sheathing Committee of the American Chemistry Council (jcrandell@aresconsulting.biz)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BS] 1404.17 Fastening. Weather boarding and wall coverings shall be securely fastened with aluminum, copper, zinc, zinc-coated or other *approved* corrosion-resistant fasteners in accordance with the nailing schedule in Table 2304.10.2 or the *approved* manufacturer's instructions. Shingles and other weather coverings shall be attached with appropriate standard-shingle nails to furring strips securely nailed to studs, or with *approved* mechanically bonding nails, except where sheathing is of wood not less than 1-inch (25 mm) nominal thickness or of *wood structural panels* as specified in Table 2308.6.3(3). Fastening of claddings or furring through foam plastic insulating sheathing shall comply with Section 2603.11, 2603.12, or 2603.13 as applicable.

Reason Statement: Fastening of cladding through foam sheathing is addressed in Chapter 26, far removed from the cladding attachment provisions in Chapter 14. This proposal adds a reference to fastening requirements in Chapter 26 for attachment of furring or cladding through a layer of foam sheathing so that it is not overlooked. In fact, those provisions must be coordinated with attachment requirements in Chapter 14.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal does not change requirements and simply ensures that existing requirements will be properly applied and not overlooked.

FS10-22

FS11-22

IBC: [BS] 1404.18, [BS] 1404.18.1 (New), [BS] 1404.18.1.1 (New), [BS] 1404.18.1.1.1 (New), [BS] 1404.18.1.1.2 (New), [BS] 1404.18.2 (New)

Proponents: Matthew Dobson, representing Vinyl Siding Institute (mdobson@vinylsiding.org)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BS] 1404.18 Polypropylene siding. *Polypropylene siding* conforming to the requirements of this section and complying with Section 1403.12 shall be limited to *exterior walls* located in areas where the wind speed specified in Chapter 16 does not exceed 100 miles per hour (45 m/s) and the building height is less than or equal to 40 feet (12 192 mm) in Exposure C. Where construction is located in areas where the basic wind speed exceeds 100 miles per hour (45 m/s), or building heights are in excess of 40 feet (12 192 mm), tests or calculations indicating compliance with Chapter 16 shall be submitted. ~~*Polypropylene siding shall be installed in accordance with the manufacturer's instructions. Polypropylene siding shall be secured to the building so as to provide weather protection for the exterior walls of the building.*~~

Add new text as follows:

[BS] 1404.18.1 Installation. Unless otherwise specified in the approved manufacturer's instructions, *Polypropylene siding* and accessories shall be installed over and attached to wood structural panel sheathing with minimum thickness of 7/16 inch (11.1 mm), or other nailable substrate.

[BS] 1404.18.1.1 Accessories. Accessories shall be installed in accordance with the approved manufacturer's instructions.

[BS] 1404.18.1.1.1 Starter Strip. Horizontal siding shall be installed with a starter strip at the initial course at any location.

[BS] 1404.18.1.1.2 Under Windows and Top of Walls. Where nail hem is removed such as under windows and at top of walls, nail slot punch or predrilled holes shall be constructed.

[BS] 1404.18.2 Fastener requirements. Unless otherwise specified in the approved manufacturer's instructions, nails shall be corrosion resistant, with a minimum 0.120-inch (3 mm) shank and minimum 0.313-inch (8 mm) head diameter. Nails shall be a minimum of 1 1/4 inches (32 mm) long or as necessary to penetrate sheathing or nailable substrate not less than 3/4 inch (19.1 mm). Where the nail fully penetrates the sheathing or nailable substrate, the end of the fastener shall extend not less than 1/4 inch (6.4 mm) beyond the opposite face of the sheathing or nailable substrate. Spacing of fasteners shall be installed in accordance with the approved manufacturer's instructions.

Reason Statement: This addition brings in critical installation elements for and polypropylene siding.

Two critical applications are starter strip and utility trim, are important to highlight as they are part of the wind performance system. In some instances, systems have been installed in high wind events incorrectly resulting in product performance failure. These are standard installation procedures for horizontal polymeric cladding.

In addition this proposal highlights the need for proper nail size, spacing uniqueness, and the need to for the installation over a proper nailable substrate.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This change brings in critical required installation practices for the product category.

FS11-22

FS12-22

IBC: TABLE 2603.13.1, TABLE 2603.13.2

Proponents: Jay Crandell, P.E., ABTG/ARES Consulting, representing Foam Sheathing Committee of the American Chemistry Council
(jcrandell@aresconsulting.biz)

THIS PROPOSAL WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE-STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BS] TABLE 2603.13.1 CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a

CLADDING FASTENER THROUGH FOAM SHEATHING INTO:	CLADDING FASTENER TYPE AND MINIMUM SIZE ^{b,c}	CLADDING FASTENER VERTICAL SPACING (INCHES)	MAXIMUM THICKNESS OF FOAM SHEATHING ^{e,d} (INCHES)							
			16" o.c. fastener horizontal spacing				24" o.c. fastener horizontal spacing			
			Cladding weight:				Cladding weight:			
			3 psf	11 psf	18 psf	25 psf	3 psf	11 psf	18 psf	25 psf
Wood Framing (minimum 1 1/4 inch penetration) ^b	0.113" diameter nail	6	2.00	1.45	0.75	DR	2.00	0.85	DR	DR
		8	2.00	1.00	DR	DR	2.00	0.55	DR	DR
		12	2.00	0.55	DR	DR	1.85	DR	DR	DR
	0.120" diameter nail	6	3.00	1.70	0.90	0.55	3.00	1.05	0.50	DR
		8	3.00	1.20	0.60	DR	3.00	0.70	DR	DR
		12	3.00	0.70	DR	DR	2.15	DR	DR	DR
	0.131" diameter nail	6	4.00	2.15	1.20	0.75	4.00	1.35	0.70	DR
		8	4.00	1.55	0.80	DR	4.00	0.90	DR	DR
		12	4.00	0.90	DR	DR	2.70	0.50	DR	DR
	0.162" diameter nail	6	4.00	3.55	2.05	1.40	4.00	2.25	1.25	0.80
		8	4.00	2.55	1.45	0.95	4.00	1.60	0.85	0.50
		12	4.00	1.60	0.85	0.50	4.00	0.95	DR	DR

For SI: 1 inch = 25.4 mm, 1 pound per square foot (psf) = 0.0479 kPa.

DR = Design Required, o.c. = on center.

- a. Wood framing shall be spruce-pine-fir or any wood species with a specific gravity of 0.42 or greater in accordance with ANSI/AWC NDS.
- b. The thickness of wood structural panels complying with the specific gravity requirement of Note a shall be permitted to be included in satisfying the minimum penetration into framing.
- ~~b. c.~~ Nail fasteners shall comply with ASTM F1667, except nail length shall be permitted to exceed ASTM F1667 standard lengths.
- ~~e. d.~~ Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C587 or ASTM C1289.

[BS] TABLE 2603.13.2 FURRING MINIMUM FASTENING REQUIREMENTS FOR APPLICATION OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^{a, b}

FURRING MATERIAL	FRAMING MEMBER	FASTENER TYPE AND MINIMUM SIZE	MINIMUM PENETRATION INTO WALL FRAMING (INCHES) ^c	FASTENER SPACING IN FURRING (INCHES)	MAXIMUM THICKNESS OF FOAM SHEATHING ^{d, e} (INCHES)							
					16" o.c. furring ^{e, f}				24" o.c. furring ^{e, f}			
					Siding weight:				Siding weight:			
					3 psf	11 psf	18 psf	25 psf	3 psf	11 psf	18 psf	25 psf
Minimum 1x Wood Furring ^{e, d}	Minimum 2x Wood Stud	0.131" diameter nail	1 1/4	8	4.00	2.45	1.45	0.95	4.00	1.60	0.85	DR
				12	4.00	1.60	0.85	DR	4.00	0.95	DR	DR
				16	4.00	1.10	DR	DR	3.05	0.60	DR	DR
		0.162" diameter nail	1 1/4	8	4.00	4.00	2.45	1.60	4.00	2.75	1.45	0.85
				12	4.00	2.75	1.45	0.85	4.00	1.65	0.75	DR
				16	4.00	1.90	0.95	DR	4.00	1.05	DR	DR
	No. 10 wood screw	1	12	4.00	2.30	1.20	0.70	4.00	1.40	0.60	DR	
			16	4.00	1.65	0.75	DR	4.00	0.90	DR	DR	
			24	4.00	0.90	DR	DR	2.85	DR	DR	DR	
	1/4" lag screw	1 1/2	12	4.00	2.65	1.50	0.90	4.00	1.65	0.80	DR	
			16	4.00	1.95	0.95	0.50	4.00	1.10	DR	DR	
			24	4.00	1.10	DR	DR	3.25	0.50	DR	DR	

For SI: 1 inch = 25.4 mm, 1 pound per square foot (psf) = 0.0479 kPa, 1 pound per square inch = 0.00689 MPa.

DR = Design Required, o.c. = on center.

- a. Wood framing and furring shall be spruce-pine-fir or any wood species with a specific gravity of 0.42 or greater in accordance with ANSI/AWC NDS.
- b. Nail fasteners shall comply with ASTM F1667, except nail length shall be permitted to exceed ASTM F1667 standard lengths.
- c. The thickness of wood structural panels complying with the specific gravity requirements of Note a shall be permitted to be included in satisfying the minimum required penetration into framing.
- e. d. Where the required cladding fastener penetration into wood material exceeds 3/4 inch and is not more than 1 1/2 inches, a minimum 2-inch nominal wood furring or an approved design shall be used.
- d. e. Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C587 or ASTM C1289.
- e. f. Furring shall be spaced not greater than 24 inches on center in a vertical or horizontal orientation. In a vertical orientation, furring shall be located over wall studs and attached with the required fastener spacing. In a horizontal orientation, the indicated 8-inch and 12-inch fastener spacing in furring shall be achieved by use of two fasteners into studs at 16 inches and 24 inches on center, respectively.

Reason Statement: This proposal adds a new footnote to Tables 2603.13.1 and 2603.13.2 to coordinate with changes made to identical tables in the 2021 IRC. Wood structural panels have fastener dowel bearing and shear capacities similar to that for wood framing and can be safely included in determining the embedment depth required for fasteners in accordance with Tables 2603.13.1 and 2603.13.2.

Cost Impact: The code change proposal will decrease the cost of construction. The impact will be a small decrease in cost due to slightly less cladding fastener length required for embedment in wood framing where wood structural panels are used and contribute to the fastener embedment. This will also improve constructability in marginal cases based on availability of fasteners of a suitable length to meet the required embedment.

