RB252-19

IRC: TABLE R703.15.1, TABLE R703.15.2, TABLE R703.16.1, TABLE R703.16.2

Proponent: Charles Clark Jr, representing Brick Industry Association (cclark@bia.org)

2018 International Residential Code

R703.15.1 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 R703.15.1.

Revise as follows:

TABLE R703.15.1
CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT[a]

CLADDING FASTENER THROUGH FOAM SHEATHING	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	15 psf	18 psf	25 psf	3 psf	11 psf	15 psf	18 psf	25 psf
Wood framing (minimum $1^1/_4$-inch penetration)	0.113″ diameternail	6	2.00	1.45	1.00	0.75	DR	2.00	0.85	0.55	DR	DR
		8	2.00	1.00	0.65	DR	DR	2.00	0.55	DR	DR	DR
		12	2.00	0.55	DR	DR	DR	1.85	DR	DR	DR	DR
	0.120″ diameternail	6	3.00	1.70	1.15	0.90	0.55	3.00	1.05	0.65	0.50	DR
		8	3.00	1.20	0.80	0.60	DR	3.00	0.70	DR	DR	DR
		12	3.00	0.70	DR	DR	DR	2.15	DR	DR	DR	DR
	0.131″ diameternail	6	4.00	2.15	1.50	1.20	0.75	4.00	1.35	0.90	0.70	DR
		8	4.00	1.55	1.05	0.80	DR	4.00	0.90	0.55	DR	DR
		12	4.00	0.90	0.55	DR	DR	2.70	0.50	DR	DR	DR
	0.162″ diameternail	6	4.00	3.55	2.50	2.05	1.40	4.00	2.25	1.55	1.25	0.80
		8	4.00	2.55	1.80	1.45	0.95	4.00	1.60	1.10	0.85	0.50
		12	4.00	1.60	1.10	0.85	0.50	4.00	0.95	0.60	DR	DR

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa, 1 pound per square inch = 6.895 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 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 C578 or ASTM C1289.

R703.15.2 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 R703.15.2. Where placed horizontally, wood furring shall be preservative-treated wood in accordance with Section R317.1 or naturally durable wood and fasteners shall be corrosion resistant in accordance Section R317.3.

Revise as follows:

TABLE R703.15.2
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	15 psf	18 psf	25 psf	3 psf	11 psf	15 psf	18 psf	
Minimum 1× wood furring[c]	Minimum 2× woodstud	0.131″ diameternail	$1^1/_4$	8	4.00	2.45	1.75	1.45	0.95	4.00	1.60	1.10	0.85	
				12	4.00	1.60	1.10	0.85	DR	4.00	0.95	0.55	DR	
				16	4.00	1.10	0.70	DR	DR	3.05	0.60	DR	DR	
		0.162″ diameternail	$1^1/_4$	8	4.00	4.00	3.05	2.45	1.60	4.00	2.75	1.85	1.45	0
				12	4.00	2.75	1.85	1.45	0.85	4.00	1.65	1.05	0.75	
				16	4.00	1.90	1.25	0.95	DR	4.00	1.05	0.60	DR	
		No.10 woodscrew	1	12	4.00	2.30	1.60	1.20	0.70	4.00	1.40	0.85	0.60	
				16	4.00	1.65	1.05	0.75	DR	4.00	0.90	DR	DR	
				24	4.00	0.90	DR	DR	DR	2.85	DR	DF	DR	
		$^1/_4$″ lag screw	$1^1/_2$	12	4.00	2.65	1.90	1.50	0.90	4.00	1.65	1.05	0.80	
				16	4.00	1.95	1.25	0.95	0.50	4.00	1.10	0.65	DR	
				24	4.00	1.10	0.65	DR	DR	3.25	0.50	DR	DR	

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa, 1 pound per square inch = 6.895 kPa.

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 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× 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

C578 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.

R703.16.1 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 R703.16.1.

Revise as follows:

TABLE R703.16.1
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	15 psf	18 psf	25 psf	3 psf	11 psf	15 psf	18 psf	25 psf
Steel framing (minimum penetrationof steel thickness + 3threads)	No. 8 screw into 33-mil steelor thicker	6	3.00	2.95	2.50	2.20	1.45	3.00	2.35	1.75	1.25	DR
		8	3.00	2.55	2.00	1.60	0.60	3.00	1.80	0.90	DR	DR
		12	3.00	1.80	0.95	DR	DR	3.00	0.65	DR	DR	DR
	No. 10 screw into-33 mil steel	6	4.00	3.50	3.05	2.70	1.95	4.00	2.90	2.20	1.70	0.55
		8	4.00	3.10	2.50	2.05	1.00	4.00	2.25	1.35	0.70	DR
		12	4.00	2.25	1.35	0.70	DR	3.70	1.05	DR	DR	DR
	No. 10 screw into 43-mil steelor thicker	6	4.00	4.00	4.00	4.00	3.60	4.00	4.00	3.80	3.45	2.70
		8	4.00	4.00	4.00	3.70	3.00	4.00	3.85	3.25	2.80	1.80
		12	4.00	3.85	3.25	2.80	1.80	4.00	3.05	2.15	1.50	DR

For SI: 1 inch = 25.4 mm, 1 mil = 0.0254 mm, 1 pound per square foot = 0.0479 kPa, 1 pound per square inch = 6.895 kPa.

DR = Design Required.

o.c. = On Center.

a. 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 ASTM C1513.
c. Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C578 or ASTM C1289.

R703.16.2 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 R703.16.2. Where placed horizontally, wood furring shall be preservative-treated wood in accordance with Section R317.1 or naturally durable wood and fasteners shall be corrosion resistant in accordance with Section R317.3. Steel furring shall have a minimum G60 galvanized coating.

Revise as follows:

TABLE R703.16.2
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	15 psf	18 psf	25 psf	3 psf	11 psf	15 psf	18 psf	
Minimum 33-mil steel furring or minimum 1× wood furring[c]	33-milsteel stud	No. 8 screw	Steel thickness + 3threads	12	3.00	1.80	0.95	DR	DR	3.00	0.65	DR	DR	
				16	3.00	1.00	DR	DR	DR	2.85	DR	DR	DR	
				24	2.85	DR	DR	DR	DR	2.20	DR	DR	DR	
		No. 10 screw	Steel thickness + 3threads	12	4.00	2.25	1.35	0.70	DR	3.70	1.05	DR	DR	
				16	3.85	1.45	DR	DR	DR	3.40	DR	DR	DR	
				24	3.40	DR	DR	DR	DR	2.70	DR	DR	DR	
	43-milor thickersteel stud	No. 8 Screw	Steel thickness + 3threads	12	3.00	1.80	0.95	DR	DR	3.00	0.65	DR	DR	
				16	3.00	1.00	DR	DR	DR	2.85	DR	DR	DR	
				24	2.85	DR	DR	DR	DR	2.20	DR	DR	DR	
		No. 10 screw	Steel thickness + 3threads	12	4.00	3.85	3.25	2.80	1.80	4.00	3.05	2.15	1.50	
				16	4.00	3.30	2.55	1.95	0.60	4.00	2.25	1.05	DR	
				24	4.00	2.25	1.05	DR	DR	4.00	0.65	DR	DR	

For SI: 1 inch = 25.4 mm, 1 mil = 0.0254 mm, 1 pound per square foot = 0.0479 kPa, 1 pound per square inch = 6.895 kPa.

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. 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 ASTM C1513.
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 C578 or ASTM C1289.

e. Furring shall be spaced not more than 24 inches (610 mm) 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: This code change proposal adds a 15 psf column option to the cladding over foam plastic sheathing tables. This is the weight usually associated with adhered masonry veneer applied using a traditional lath and scratch coat. The thicknesses in the proposed 15 psf columns were developed using the same analysis that was used for developing the original tables.

Cost Impact: The code change proposal will decrease the cost of construction
This code change proposal decreases the cost of hiring an engineer to determine the size and spacing of fasteners for a 15 psf cladding directly attached over foam sheathing.

Proposal # 5609

RB252-19