

RESIDENTIAL SIDING REPLACEMENT

- This handout is intended only as a guide. It shall not be considered a complete set of requirements.
- Materials and installation must comply with the current Minnesota State Building Code and the manufacturers' installation specifications for each product.
- This handout is **VALID** for single-family homes, duplexes, and townhomes. (Does NOT include condominiums, apartment complexes, and commercial properties.)
- **NOT VALID** for repairs, replacement, removal, or installation of any sheathing and/or structural members.
- Each address requires a separate permit.
- If the home was constructed prior to 1978 and 20ft² or more of painted exterior materials will be disturbed, the contractor must be EPA "Lead Safe Certified" or qualify for an exemption.
- Brick, stucco, stone, or EIFS siding installation or removal requires a building permit. EIFS also requires special inspections by a third-party testing agency

PERMIT CARD (throughout the project) shall be:

POSTED prior to start of work - **VISIBLE** from street or driveway - **ACCESSIBLE** to the inspector

INSPECTION REQUIREMENTS:

Inspections **MUST** be scheduled during office hours **AT LEAST** one business day prior to inspection. If a specific date and time is required, additional notice may be needed. Failure to cancel a scheduled inspection may result in a reinspection fee.

- **Office Hours:** Monday - Friday • 8:00 a.m. - 4:30 p.m.
- **Phone:** (952) 442-7520 or (888) 446-1801

In-Progress Inspection: An inspection must be performed prior to the completion of the project unless otherwise approved. Ideally, the inspection should take place after the existing siding is removed, all windows are taped, the house wrap or felt paper installed and new siding started but not fully covering the house wrap. (Taking photographs documenting sheathing, water resistive barrier, sealing of penetrations and openings, and flashing is always a good idea, but is NOT a substitute for the required inspection.)

- ✓ Your representative must be on site and able to communicate with the inspector.
- ✓ You must have all installation instructions on site.
- ✓ **Failure to comply with inspection and installation requirements may result in: 1) the requirement to remove materials, 2) penalty fees, and/or 3) a license investigation under Minnesota Statute 326B.84.**

NOTICE: Construction or work for which a permit is required shall be subject to inspection by the Building Official, and such **construction or work shall remain accessible and exposed for inspection purposes until approved.** It is the responsibility of the permit applicant to be in attendance on site and provide access to the Building Official for all required inspections. If work is concealed and/or work is not complete at time of inspection, an additional inspection is required and a **reinspection fee may apply.**

Note: The State of Minnesota requires all residential building contractors, remodelers, roofers, plumbers, and electricians to obtain a state license, unless they qualify for a specific exemption. Any person claiming an exemption must provide a copy of a Certificate of Exemption from the Department of Labor & Industry to the Municipality before a permit will be issued.

Note: To determine contractor requirements, or to check the licensing status of a contractor, please call the Minnesota Department of Labor & Industry at 651-284-5065 or toll free 1-800-342-5354.

Note: For specific code requirements, contact the Building Inspection Department at 952-442-7520 or 888-446-1801 or e-mail: info@mnspect.com.

PROJECT CHECKLIST:

The following is a guideline to assist in compliance with the requirements of the MN State Building Code.

- The home address must be visible from the street.
- Make sure the sheathing is in good condition. Any water-saturated or damaged sheathing will need to be replaced.
- Obtain a building permit for framing if any sheathing and/or structural members need to be repaired, replaced, and/or added.
- Make sure all sheathing materials are approved for such use.
- Seal all sheathing penetrations at the sheathing and at the exterior wall covering (i.e. gas lines, wires, vents, etc.). All exterior penetrations in the sheathing and water resistive barrier made by pipes, vents, etc. shall be sealed, and water resistive barrier properly lapped.
- Approved corrosion-resistive flashing (not house wrap tape) shall be installed:
 - ✓ At the top and sides of all window and door openings, extended to the face of the WRB.
 - ✓ At the intersection of chimneys or other masonry construction.
 - ✓ Continuously above all projecting wood trim.
 - ✓ Where porches, decks, or stairs attach to a wall or floor assembly.
 - ✓ At wall and roof intersections (kick-out flashing).
 - ✓ At built-in gutters.
- Install an approved water resistive barrier (i.e. house wrap, No.15 felt, etc.) starting at the structure's base and working your way up to the underside of the rafters or trusses. When using tar paper the upper layer must lap over the lower layer by at least 2", and the vertical joints must lap at least 6". House wraps shall be installed in accordance with manufacturer's installation instructions.
- Ensure the water resistive barrier, regardless of type, overlaps all flashing by a minimum of 2"**
- Ensure all cuts, tears, penetrations through, and openings in the water resistive barrier are sealed.
- Ensure the siding material is of a weather-resistive material.
- Install all siding materials in accordance with the manufacturers' instructions and Table R703.3(1).
- Nails and staples shall meet ASTM F1667 and all fasteners comply with R703.3.2.
- Staples shall have a minimum crown width of 7/16" and a minimum 16ga. size.
- Reconnection of electrical fixtures may only be performed by the home owner or a licensed electrician. An electric permit is required for this work.
- Re-install the house numbers (if necessary).
- All removed and excess siding materials must be disposed of at an MPCA-approved landfill.
- When using other materials besides felt paper and house wrap for water resistive barrier (i.e. fan-fold), the manufacturer's installation guide approving use as a water resistive barrier **MUST** be on site.
- When attaching materials over exterior foam sheathing, installation shall comply with R703.15 and Table R703.15.1
- See attached Table R703.3(1) Weather-Resistant Siding Attachment and Minimum Thickness; Table R703.15.1 Cladding Minimum Fastening Requirements for Direct Attachment Over Foam Plastic Sheathing to Support Cladding Weight and Table R703.15.2 Furring Minimum Fastening Requirements for Application Over Foam Plastic Sheathing

TABLE R703.3(1) WEATHER-RESISTANT SIDING ATTACHMENT AND MINIMUM THICKNESS

TABLE R703.3(1)
SIDING MINIMUM ATTACHMENT AND MINIMUM THICKNESS

SIDING MATERIAL	NOMINAL THICKNESS (inches)	JOINT TREATMENT	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS						
			Wood or wood structural panel sheathing into stud	Fiberboard sheathing into stud	Gypsum sheathing into stud	Foam plastic sheathing into stud ^d	Direct to studs	Number or spacing of fasteners	
Anchored veneer: brick, concrete, masonry or stone (see Section R703.8)	2	Section R703.8	Section R703.8						
Adhered veneer: concrete, stone or masonry (see Section R703.12)	—	Section R703.12	Section R703.12						
Fiber cement siding	Panel siding (see Section R703.10.1)	$\frac{5}{16}$	Section R703.10.1	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113")	4d common ($1\frac{1}{2}$ " x 0.099")	6" panel edges 12" inter. sup.
	Lap siding (see Section R703.10.2)	$\frac{5}{16}$	Section R703.10.2	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113")	6d common (2" x 0.113") or 11 gage roofing nail	Note f
Hardboard panel siding (see Section R703.5)	$\frac{7}{16}$	—	0.120" nail (shank) with 0.225" head	0.120" nail (shank) with 0.225" head	0.120" nail (shank) with 0.225" head	0.120" nail (shank) with 0.225" head	0.120" nail (shank) with 0.225" head	0.120" nail (shank) with 0.225" head	6" panel edges 12" inter. sup. ^d
Hardboard lap siding (see Section R703.5)	$\frac{7}{16}$	Note e	0.099" nail (shank) with 0.240" head	0.099" nail (shank) with 0.240" head	0.099" nail (shank) with 0.240" head	0.099" nail (shank) with 0.240" head	0.099" nail (shank) with 0.240" head	0.099" nail (shank) with 0.240" head	Same as stud spacing 2 per bearing
Horizontal aluminum ^g	Without insulation	0.019 ^b	Lap	Siding nail $1\frac{1}{2}$ " x 0.120"	Siding nail 2" x 0.120"	Siding nail 2" x 0.120"	Siding nail ^h $1\frac{1}{2}$ " x 0.120"	Not allowed	Same as stud spacing
		0.024	Lap	Siding nail $1\frac{1}{2}$ " x 0.120"	Siding nail 2" x 0.120"	Siding nail 2" x 0.120"	Siding nail ^h $1\frac{1}{2}$ " x 0.120"	Not allowed	
	With insulation	0.019	Lap	Siding nail $1\frac{1}{2}$ " x 0.120"	Siding nail $2\frac{1}{2}$ " x 0.120"	Siding nail $2\frac{1}{2}$ " x 0.120"	Siding nail ^h $1\frac{1}{2}$ " x 0.120"	Siding nail $1\frac{1}{2}$ " x 0.120"	
Insulated vinyl siding ^j	0.035 (vinyl siding layer only)	Lap	0.120 nail (shank) with a 0.313 head or 16-gage crown ^{h, i}	0.120 nail (shank) with a 0.313 head or 16-gage crown ^h	0.120 nail (shank) with a 0.313 head or 16-gage crown ^h	0.120 nail (shank) with a 0.313 head or 16-gage crown ^h	0.120 nail (shank) with a 0.313 head Section R703.11.2	Not allowed	16 inches on center or specified by manufacturer instructions, test report or other sections of this code
Particleboard panels	$\frac{3}{8}$	—	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	Not allowed	6" panel edges 12" inter. sup.
	$\frac{1}{2}$	—	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	
	$\frac{5}{8}$	—	6d box nail (2" x 0.099")	8d box nail ($2\frac{1}{2}$ " x 0.113")	8d box nail ($2\frac{1}{2}$ " x 0.113")	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	6d box nail (2" x 0.099")	

Polypropylene siding ^k		Not applicable	Lap	Section 703.14.1	Section 703.14.1	Section 703.14.1	Section 703.14.1	Not allowed	As specified by the manufacturer instructions, test report or other sections of this code
Steel ^c		29 ga.	Lap	Siding nail (1 ³ / ₄ " x 0.113") Staple-1 ³ / ₄ "	Siding nail (2 ³ / ₄ " x 0.113") Staple-2 ¹ / ₂ "	Siding nail (2 ¹ / ₂ " x 0.113") Staple-2 ¹ / ₄ "	Siding nail (1 ³ / ₄ " x 0.113") Staple-1 ³ / ₄ "	Not allowed	Same as stud spacing
Vinyl siding (see Section R703.11)		0.035	Lap	0.120" nail (shank) with a 0.313" head or 16-gage staple with ³ / ₈ - to ¹ / ₂ -inch crown ^{h, i}	0.120" nail (shank) with a 0.313" head or 16-gage staple with ³ / ₈ - to ¹ / ₂ -inch crown ^h	0.120" nail (shank) with a 0.313" head or 16-gage staple with ³ / ₈ - to ¹ / ₂ -inch crown ^h	0.120" nail (shank) with a 0.313 head Section R703.11.2	Not allowed	16 inches on center or as specified by the manufacturer instructions or test report
Wood siding (see Section R703.5)	Wood rustic, drop	³ / ₈ min.	Lap	6d box or siding nail (2" x 0.099")	6d box or siding nail (2" x 0.099")	6d box or siding nail (2" x 0.099")	6d box or siding nail (2" x 0.099")	8d box or siding nail (2 ¹ / ₂ " x 0.113") Staple-2"	Face nailing up to 6" widths, 1 nail per bearing; 8" widths and over, 2 nails per bearing
	Shiplap	1 ⁹ / ₃₂ average	Lap						
	Bevel	⁷ / ₁₆	Lap						
	Butt tip	³ / ₁₆	Lap						
Wood structural panel ANSI/APA PRP-210 siding (exterior grade) (see Section R703.5)		³ / ₈ - ¹ / ₂	Note e	2" x 0.099" siding nail	2 ¹ / ₂ " x 0.113" siding nail	2 ¹ / ₂ " x 0.113" siding nail	2 ¹ / ₂ " x 0.113" siding nail	2" x 0.099" siding nail	6" panel edges 12" inter. sup.
Wood structural panel lap siding (see Section R703.5)		³ / ₈ - ¹ / ₂	Note e Note g	2" x 0.099" siding nail	2 ¹ / ₂ " x 0.113" siding nail	2 ¹ / ₂ " x 0.113" siding nail	2 ¹ / ₂ " x 0.113" siding nail	2" x 0.099" siding nail	8" along bottom edge

- a. Aluminum nails shall be used to attach aluminum siding.
- b. Aluminum (0.019") shall be unbacked only where the maximum panel width is 10" and the maximum flat areas is 8". The tolerance for aluminum siding shall be +0.002" of the nominal dimensions.
- c. Shall be of approved type
- d. Where used to resist shear forces, the spacing must be 4" at the panel edges and 8" on interior supports.
- e. Vertical end joints shall occur at studs and shall be covered with a joint cover or shall be caulked.
- f. Face nailing: one 6d common nail through the overlapping planks at each stud. Concealed nailing: one 11gauge 1 1/2" long galvanized roofing nail through the top edge of each plank at each stud in accordance with the manufacturer's installation instructions.
- g. Vertical joints, if staggered, shall be permitted to be away from the studs if applied over woods structural panel sheathing.
- h. Minimum fastener length must be sufficient to penetrate sheathing other nailable substrate and framing a total of minimum 1 1/4" or in accordance with the manufacturer's installation instructions.
- i. Where specified by the manufacturer's instructions and supported by a test report, fasteners are permitted to penetrate into or fully through nailable sheathing or other nailable substrate of minimum thickness specified by the instructions or test report, without penetrating framing.
- j. Insulated vinyl siding shall comply with ASTM D7793
- k. Polypropylene siding shall comply with ASTM D7254
- l. Cladding attachment over foam sheathing shall comply with the additional requirement and limitations of sections R703.15, R703.16 and R703.1

Table R703.15.1 Cladding Minimum Fastening Requirements for Direct Attachment Over Foam Plastic Sheathing to Support Cladding Weight

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	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 = 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.

Table R703.15.2 Furring Minimum Fastening Requirements for Application Over Foam Plastic Sheathing

Furring Material	Framing Member	Fastener Type and Minimum Size	Penetration Into Wall Framing	Fastener Spacing in Furring (Inches)	16" O.C Furring ^e				24" O.C Furring ^e			
					Material Weight				Material Weight			
					3	11	18	25	3	11	18	25
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

- a. Wood framing and furring shall be SPF 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" and is not more than 1 1/2", a minimum 2x wood furring or an approved design shall be used.
- d. Foam sheathing shall have a minimum compressive strength of 15psi in accordance with ASTM C578 or ASTM C1289
- e. Furring shall be spaced not more than 24" o.c, 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" and 12" fastener spacing in furring shall be achieved by use of two fasteners into studs at 16" and 24" o.c, respectively.