



CITY OF NORTH MANKATO

RESIDENTIAL RE-SIDE

This handout is a guide only and is not intended as a complete list of requirements.

- ❖ Building permits are required for the residing of residential dwellings and garages.
- ❖ ***If a licensed contractor is hired to complete the project, have them take out any and all required permits!***
- ❖ A completed Building Permit Application shall be submitted prior to commencing with any residing project.

PROJECT CHECKLIST

- ❖ **Flashing**-Approved corrosion-resistant flashing shall be applied shingle-fashion in such a manner as to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply with AAMA 711. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashing shall be installed at all of the following locations:
 - 1. Exterior window and door openings. Flashing shall be installed at the head and sides of exterior window and door openings and shall extend to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage. Flashing at exterior window and door openings shall be installed in accordance with at least one of the following:
 - (a) the fenestration manufacturer's installation and flashing instructions. When flashing is not addressed in the fenestration manufacturer's instructions, it shall be installed in accordance with the flashing manufacturer's instructions;
 - (b) in accordance with the flashing design or method of a registered design professional; and
 - (c) in accordance with other approved methods.
 - 2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.
 - 3. Under and at the ends of masonry, wood, or metal copings and sills.
 - 4. Continuously above all projecting wood trim.
 - 5. Where exterior porches, decks, or stairs attach to a wall or floor assembly of wood-frame construction.
 - 6. At wall and roof intersections.
 - 7. At built-in gutters.
 - 8. Where exterior material meets in other than a vertical line.
 - 9. Where the lower portion of a sloped roof stops within the plane of an intersecting wall cladding in such a manner as to divert water away from the assembly.
 - 10. At the intersection of the foundation and rim joist framing when the exterior wall covering does not lap the foundation insulation.

❖ Pan Flashing of Windows & Doors

- Pan flashing shall be installed in accordance with the fenestration manufacturer's installation and flashing instructions.
- Where flashing instructions or details are not provided, pan flashing shall be installed at the sill of exterior window and door openings.
- Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage.

❖ Water-resistive Barrier (WRB)-a.k.a. House Wrap

- One layer of No. 15 asphalt felt, free from holes and breaks, complying with ASTM D 226 for Type 1 felt or other approved water-resistive barrier shall be applied over studs or sheathing of all exterior walls.
- Such felt or material shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches.
- The water-resistive barrier shall overlap the flashings not less than 2 inches.
- Where joints occur in the water-resistive barrier or flashing, the joints shall be lapped not less than 6 inches.
- The felt or other approved material shall be continuous up to the underside of the rafter or truss top chord and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope.
- The manufacturer's published installation instructions must be strictly adhered to.
- **Typical installation methods (installation requirements vary from manufacturer to manufacturer and shall be followed when installing their product)!**
 - Printed side of the barrier shall be facing the outside and installed horizontally on vertical walls.
 - Roll is placed approximately 6" from the starting corner and fastened to the sheathing with corrosion-resistant staples or nails approved by the manufacturer.
 - Then unrolled around the building and fastened as set forth in the manufacturer's published installation instructions at top and bottom plates and at framing members, usually with corrosion-resistant staples or nails approved by the manufacturer.
 - Manufacturer's recommended tape or equivalent shall be used to seal the barrier seams, around openings, window flanges, door jambs, sill plates, pipes, ducts, etc.

➤ Fan-Fold Insulation used as a Water-resistive Barrier

- **Typical installation applications for new construction or residing after removal of existing siding. (installation requirements vary from manufacturer to manufacturer and shall be followed when installing their product)!**
 - Fan-fold material should lay completely flat against the wall sheathing to prevent a wavy appearance of the finished exterior wall.
 - Attach fan-fold material using approved fasteners as described in the manufacturer's installation instructions, typically common roofing nails or plastic capped nails. (staples should not be used!) Care shall be taken to avoid overdriving fasteners as this may result in moisture leakage! Damaged areas should be repaired using house wrap tape.
 - Nails shall penetrate the framing member a minimum of $\frac{3}{4}$ ".
 - Nail spacing shall be in accordance to the manufacturer's requirements.
 - Trim fan-fold material at all window and door openings and at wall penetrations so that gaps are minimized.
 - Gaps at pipes and other small penetrations should be sealed using a silicone sealant or an expanding spray foam sealant. Window and door openings shall be sealed using the manufacturer's required self-adhering flashing tape.
 - All vertical and horizontal seams must be sealed using the manufacturer's approved tape and application method.

❖ **Wall Covering Attachments**

- Unless specified otherwise, all wall coverings shall be securely fastened in accordance with Table R703.4 or with other approved aluminum, stainless steel, zinc-coated or other approved corrosion-resistant fasteners.
- Wood siding, sheathing and wall framing on the exterior of the building shall have a clearance of not less than 6" from the ground or less than 2" measured vertically from concrete steps, porch slabs, patio slabs, and similar horizontal surfaces exposed to the weather.

**TABLE R703.4
WEATHER-RESISTANT SIDING ATTACHMENT AND MINIMUM THICKNESS**

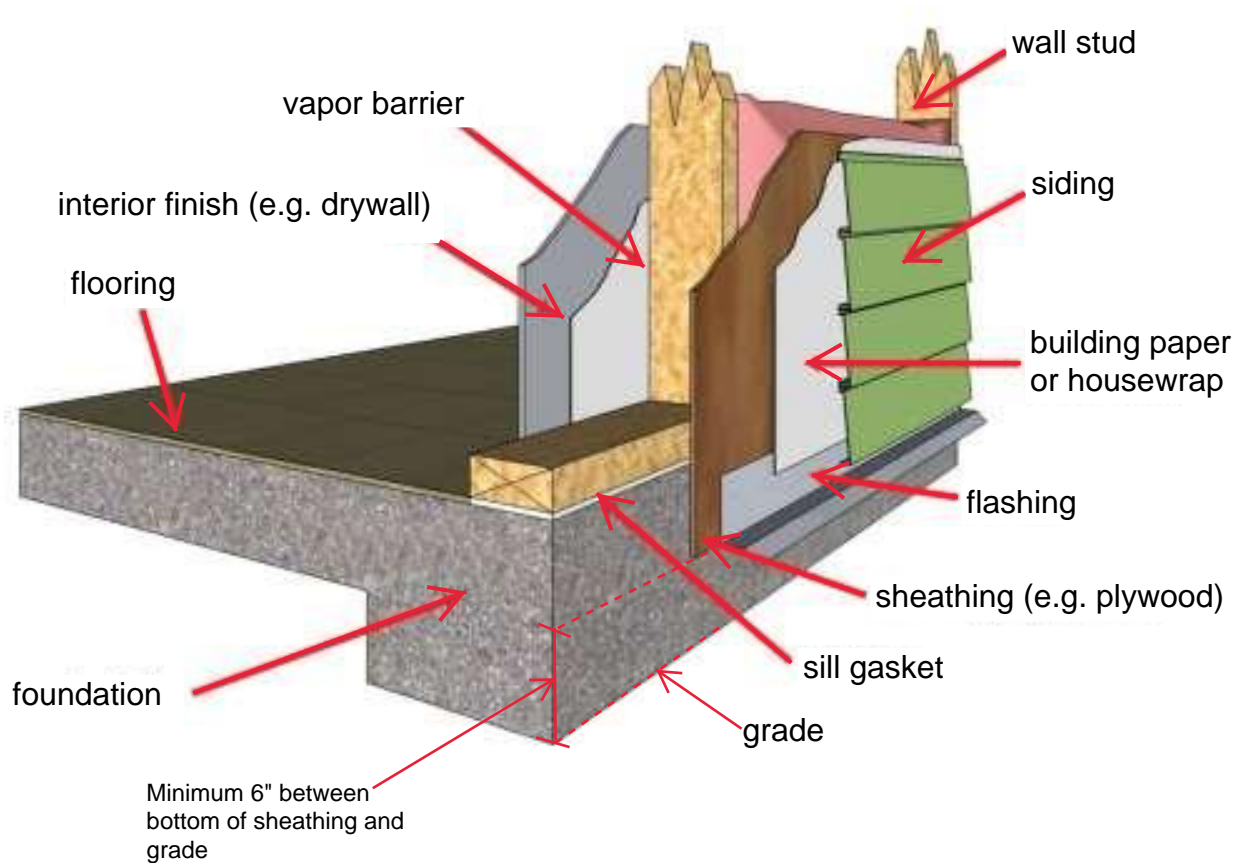
SIDING MATERIAL	NOMINAL THICKNESS ^a (inches)		JOINT TREATMENT	WATER-RESISTIVE BARRIER REQUIRED	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS ^{b, c, d}					
					Wood or wood structural panel sheathing into stud	Fiberboard sheathing into stud	Gypsum sheathing into stud	Foam plastic sheathing into stud	Direct to studs	Number or spacing of fasteners
Horizontal aluminum ^e	Without insulation	0.019 ^f 0.024	Lap	Yes	0.120 nail 1 1/2" long	0.120 nail 2" long	0.120 nail 2" long	0.120 nail ^y	Not allowed	Same as stud spacing
	With insulation	0.019	Lap	Yes	0.120 nail 1 1/2" long	0.120 nail 2 1/2" long	0.120 nail 2 1/2" long	0.120 nail ^y	0.120 nail 1 1/2" long	Same as stud spacing
Hardboard ^k Panel siding-vertical	7/16		—	Yes	Note m	Note m	Note m	Note m	Note m	6" panel edges 12" inter. sup. ⁿ
Hardboard ^k Lap-siding-horizontal	7/16		Note p	Yes	Note o	Note o	Note o	Note o	Note o	Same as stud spacing 2 per bearing
Steel ^h	29 ga.		Lap	Yes	0.113 nail 1 3/4" Staple-1 3/4"	0.113 nail 2 3/4" Staple-2 1/2"	0.113 nail 2 1/2" Staple-2 1/4"	0.113 nail ^v Staple ^v	Not allowed	Same as stud spacing
Wood structural panel ⁱ ANSI/APA-PRP 210 siding ^l (exterior grade)	3/8 - 1/2		Note p	Yes	0.099 nail-2"	0.113 nail-2 1/2"	0.113 nail-2 1/2"	0.113 nail ^y	0.099 nail-2"	6" panel edges, 12" inter. sup.
Wood structural panel lapsiding	3/8 - 1/2		Note p Note x	Yes	0.099 nail-2"	0.113 nail-2 1/2"	0.113 nail-2 1/2"	0.113 nail ^x	0.099 nail-2"	8" along bottom edge
Vinyl siding ^l	0.035		Lap	Yes	0.120 nail (shank) with a 0.313 head or 16-gage staple with 3/8 to 1/2-inch crown ^{y, z}	0.120 nail (shank) with a 0.313 head or 16-gage staple with 3/8 to 1/2-inch crown ^y	0.120 nail (shank) with a 0.313 head or 16-gage staple with 3/8 to 1/2-inch crown ^y	0.120 nail (shank) with a 0.313 head per Section R703.11.2	Not allowed	16 inches on center or specified by the manufacturer instructions or test report
Fiber cement panel siding ^a	5/16	Note q		Yes Note u	6d common corrosion-resistant nail ^r	6d common corrosion-resistant nail ^r	6d common corrosion-resistant nail ^r	6d common corrosion-resistant nail ^{r, v}	4d common corrosion-resistant nail ^r	6" o.c. on edges, 12" o.c. on intermed. studs
Fiber cement lap siding ^s	5/16	Note s		Yes Note u	6d common corrosion-resistant nail ^r	6d common corrosion-resistant nail ^r	6d common corrosion-resistant nail ^r	6d common corrosion-resistant nail ^{r, v}	6d common corrosion-resistant nail or 11-gage roofing nail ^r	Note t

a. Based on stud spacing of 16 inches on center where studs are spaced 24 inches, siding shall be applied to sheathing approved for that spacing.

b. Nail is a general description and shall be T-head, modified round head, or round head with smooth or deformed shanks.

- c. Staples shall have a minimum crown width of $\frac{7}{16}$ -inch outside diameter and be manufactured of minimum 16-gage wire.
- d. Nails or staples shall be aluminum, galvanized, or rust-preventative coated and shall be driven into the studs where fiberboard, gypsum, or foam plastic sheathing backing is used. Where wood or wood structural panel sheathing is used, fasteners shall be driven into studs unless otherwise permitted to be driven into sheathing in accordance with the siding manufacturer's installation instructions.
- e. Aluminum nails shall be used to attach aluminum siding.
- f. Aluminum (0.019 inch) shall be unbacked only when the maximum panel width is 10 inches and the maximum flat area is 8 inches. The tolerance for aluminum siding shall be +0.002 inch of the nominal dimension.
- g. All attachments shall be coated with a corrosion-resistant coating.
- h. Shall be of approved type.
- i. Three-eighths-inch plywood shall not be applied directly to studs spaced more than 16 inches on center when long dimension is parallel to studs. Plywood $\frac{1}{2}$ -inch or thinner shall not be applied directly to studs spaced more than 24 inches on center. The stud spacing shall not exceed the panel span rating provided by the manufacturer unless the panels are installed with the face grain perpendicular to the studs or over sheathing approved for that stud spacing.
- j. Wood board sidings applied vertically shall be nailed to horizontal nailing strips or blocking set 24 inches on center. Nails shall penetrate $1\frac{1}{2}$ inches into studs, studs and wood sheathing combined or blocking.
- k. Hardboard siding shall comply with CPA/ANSI A135.6.
- l. Vinyl siding shall comply with ASTM D 3679.
- m. Minimum shank diameter of 0.092 inch, minimum head diameter of 0.225 inch, and nail length must accommodate sheathing and penetrate framing $1\frac{1}{2}$ inches.
- n. When used to resist shear forces, the spacing must be 4 inches at panel edges and 8 inches on interior supports.
- o. Minimum shank diameter of 0.099 inch, minimum head diameter of 0.240 inch, and nail length must accommodate sheathing and penetrate framing $1\frac{1}{2}$ inches.
- p. Vertical end joints shall occur at studs and shall be covered with a joint cover or shall be caulked.
- q. See Section R703.10.1.
- r. Fasteners shall comply with the nominal dimensions in ASTM F 1667.
- s. See Section R703.10.2.
- t. Face nailing: one 6d common nail through the over lap piling planks at each stud. Concealed nailing: one 11 gage $1\frac{1}{2}$ inch long galv. roofing nail through the top edge of each plank at each stud.
- u. See Section R703.2 exceptions.
- v. Minimum nail length must accommodate sheathing and penetrate $1\frac{1}{2}$ inches.
- w. Adhered masonry veneer shall comply with the requirements of Section R703.6.3 and shall comply with the requirements in Sections 6.1 and 6.3 of TMS-402 ACI 530/ASCE 5.
- x. Vertical joints, if staggered shall be permitted to be away from studs if applied over wood structural panel sheathing.
- y. Minimum fastener length must accommodate sheathing and penetrate framing 0.75 inches or in accordance with the manufacturer's installation instructions.
- z. Where approved by the manufacturer's instructions or test report siding shall be permitted to be installed with fasteners penetrating not less than 0.75 inches through wood or wood structural sheathing with or without penetration into the framing.

Wall Assemblies



Flashing Installation-Air Barrier Applications

