



Designation: C1861 – 17

Standard Specification for Lathing and Furring Accessories, and Fasteners, for Interior and Exterior Portland Cement-Based Plaster¹

This standard is issued under the fixed designation C1861; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification contains the minimum requirements for lathing and furring accessories, and fasteners, as components of interior and exterior portland cement-based plaster assemblies, used to facilitate lathing and furring installation (Specifications C1063, C1787), cement plaster application (Specification C926), and functionality of the completed stucco cladding assembly

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

A240/A240M Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

A580/A580M Specification for Stainless Steel Wire

A641/A641M Specification for Zinc-Coated (Galvanized) Carbon Steel Wire

A653/A653M Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

B69 Specification for Rolled Zinc

B221 Specification for Aluminum and Aluminum-Alloy Ex-

truded Bars, Rods, Wire, Profiles, and Tubes

C926 Specification for Application of Portland Cement-Based Plaster

C954 Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness

C1002 Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs

C1063 Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster

C1787 Specification for Installation of Non Metallic Plaster Bases (Lath) Used with Portland Cement Based Plaster in Vertical Wall Applications

D1784 Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds

D4216 Specification for Rigid Poly(Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly(Vinyl Chloride) (CPVC) Building Products Compounds

F1667 Specification for Driven Fasteners: Nails, Spikes, and Staples

3. Terminology

3.1 Definitions:

3.1.1 Definitions shall be in accordance with Specification C1063.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *capture flange, n*—the narrow flange element of a lathing accessory that projects from a ground and returns onto the exterior stucco cladding surface to conceal the gap between the ground and stucco cladding.

3.2.2 *cement plaster panel area, n*—the surface of a cement plaster area between lathing accessory grounds.

3.2.3 *drainage surface, n*—the sloped or non-sloped, perforated or non-perforated surface element of a lathing accessory that facilitates a drainage function, by directing water from behind the stucco cladding to the exterior of the stucco cladding.

¹ This test method is under the jurisdiction of ASTM Committee C11 on Gypsum and Related Building Materials and Systems and is the direct responsibility of Subcommittee C11.02 on Specifications and Test Methods for Accessories and Related Products.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3.2.4 *drip flange, n*—the narrow flange element of a lathing accessory that facilitates a drainage function, projects from a drainage surface and directs water to the exterior of the stucco cladding.

3.2.5 *fastener, n*—a nail, screw, staple or power actuated fastener.

3.2.6 *flexible pleat, n*—the flexible element of a control joint lathing accessory that accommodates movement of the cement plaster cladding assembly caused by shrinkage and thermal variations.

3.2.7 *ground, n*—the element of a lathing accessory that provides an edge, end, or termination for a cement plaster panel area, with a ground dimension to assist in cement plaster thickness control.

3.2.8 *key attachment flange, n*—the attachment flange element of a lathing accessory that is full of holes or is expanded sheet metal that provides a means for accurate alignment, facilitates complete embedment of the key attachment flange and adjacent lath by cement plaster, and is used to attach the lathing accessory.

3.2.9 *movement gap, n*—the element of an expansion joint lathing accessory that accommodates some degree of movement in the stucco cladding assembly caused by movement of the building, the substrate, or its components.

3.2.10 *screed, n*—synonymous with *ground*.

3.2.11 *solid attachment flange, n*—the solid attachment flange element of a lathing or furring accessory that provides a means for accurate alignment, facilitates drainage where drainage is required by integration of the solid attachment flange with the water-resistive barrier, and which has no holes except for optional fastener holes used to fasten the lathing accessory.

3.3 Illustrations (Fig. 1) are intended to generically depict examples of common lathing and furring accessory shapes and fasteners, by depicting their functional elements in relationship to each other, without literally depicting specific manufactured products. Variations of lathing and furring accessory shapes and fasteners illustrated shall be acceptable when the function and performance is equivalent to or exceeds the illustrated accessory or fastener.

4. Materials and Manufacture

4.1 General:

4.1.1 Lathing and furring accessories, and fasteners shall be free of deleterious amounts of rust, oil, or other foreign matter that could cause bond failure or unsightly discoloration.

4.1.2 Lathing and furring accessories shall include key attachment flanges or solid attachment flanges. Solid attachment flanges shall accommodate self-piercing fasteners without deforming the attachment flange or shall include optional fastener holes used to fasten the lathing accessory.

4.1.3 Lathing and furring accessories shall facilitate lathing and furring installation, cement plaster application, and functionality of the completed stucco cladding assembly. Lathing and furring accessories shall be configured to serve one or more functions such as to assist in cement plaster thickness control, to reinforce cement plaster corners, to facilitate

drainage, to reduce cracking by accommodating movement, to separate cement plaster from dissimilar materials, load bearing members and penetrating elements, and to provide an edge, end, or termination for a cement plaster panel area.

4.1.4 Lathing accessories shall be configured to accommodate application of the specified cement plaster thickness. The ground dimension of lathing accessories shall be determined by the specified thickness of the cement plaster with consideration of the installed configuration of the lathing accessory to the lath (lathing accessory located under or over the lath).

4.1.5 Lathing accessories serving a drainage function shall include a drainage surface and a solid attachment flange.

4.2 Materials:

4.2.1 *Steel*—Specification A653/A653M, with a G60 coating.

4.2.2 *Stainless Steel*—Specification A240/A240M, Type 304 or 316.

4.2.3 *Zinc Alloy*—Specification B69, 99 % pure zinc.

4.2.4 *Anodized Aluminum Alloy*—Specification B221.

4.2.5 *PVC and CPVC Plastic*—Specification D1784 or D4216.

4.2.6 Lathing accessories shall be corrosion resistant and fabricated from galvanized (zinc-coated) steel, stainless steel, rigid PVC or CPVC plastic, zinc alloy, or anodized aluminum alloy. Lathing accessory base material and minimum thickness shall be as indicated in Table 1.

4.2.7 Fasteners shall be fabricated from steel or stainless steel and comply with Specifications C954, C1002, and F1667 as applicable. Steel fasteners shall have a corrosion resistant plating or coating.

4.2.8 Wire shall be corrosion resistant steel wire, annealed, Specification A641/A641M with a Class I galvanized coating, or stainless steel wire, annealed, Specification A580/A580M.

4.2.9 Adhesive shall be a materials compatible, exterior, gun-grade, construction adhesive. Expandable foam adhesives are prohibited.

4.2.10 Clips shall be formed from galvanized steel wire, Specification A641/A641M or steel sheet, Specification A653/A653M, depending on use and manufacturer's requirements.

4.2.11 Rod hanger and strap hanger shall be mild steel, and galvanized, zinc electroplated, or protected with a rust-inhibiting paint.

4.2.12 Cold-rolled channel furring shall be cold-formed steel, 33 000 psi (228 MPa) yield strength, 0.0538 in. (1.37 mm) bare steel thickness, with a galvanized G60 coating, Specification A653/A653M.

4.3 Lathing Accessories to Facilitate Drainage:

4.3.1 *Weep Screed*—Lathing accessory located at the bottom of exterior framed or framed and sheathed walls; used as a screed to assist in cement plaster thickness control; to facilitate drainage; and to provide an edge, end, or termination for a cement plaster panel area. Weep screed shall include a solid vertical attachment flange 3½ in. (89 mm) long minimum, and a drainage surface that is sloped and either perforated or non-perforated, or non-sloped and perforated with a capture flange, or non-sloped and non-perforated without a capture flange.

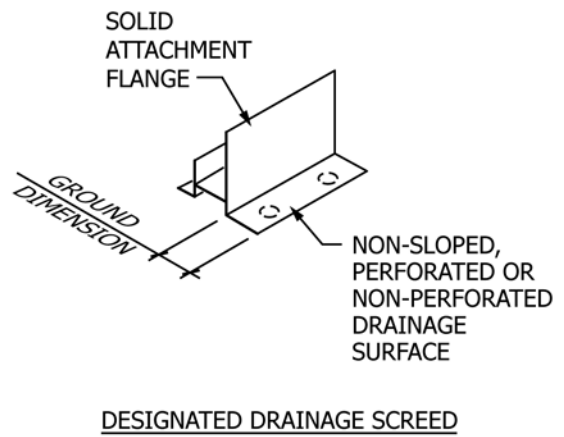
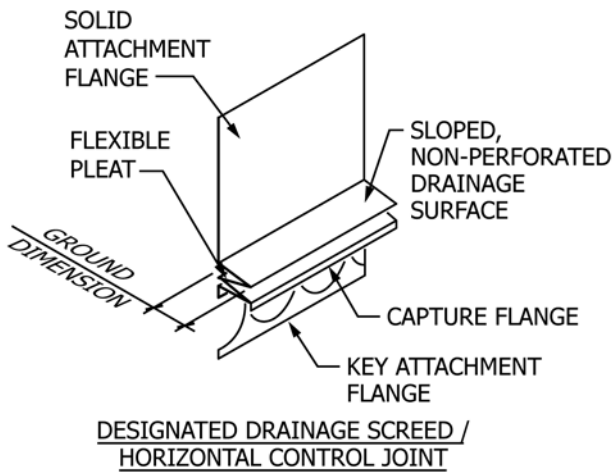
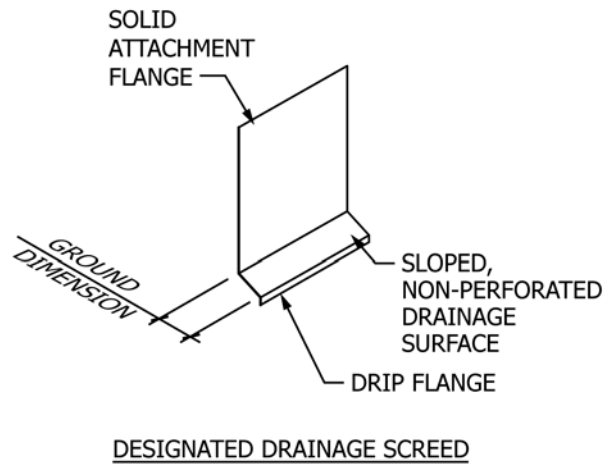
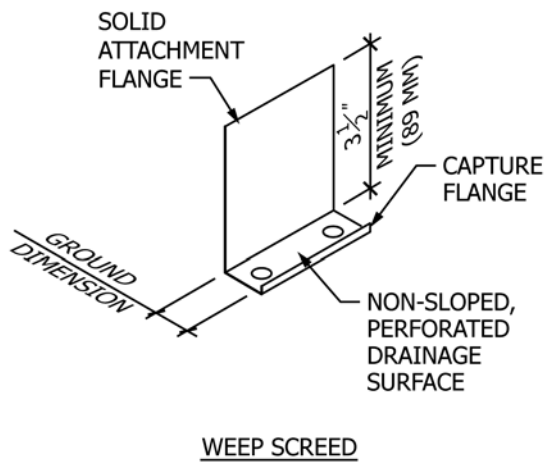
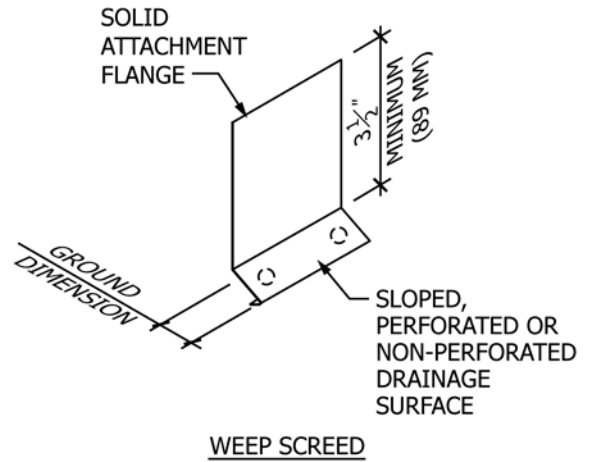
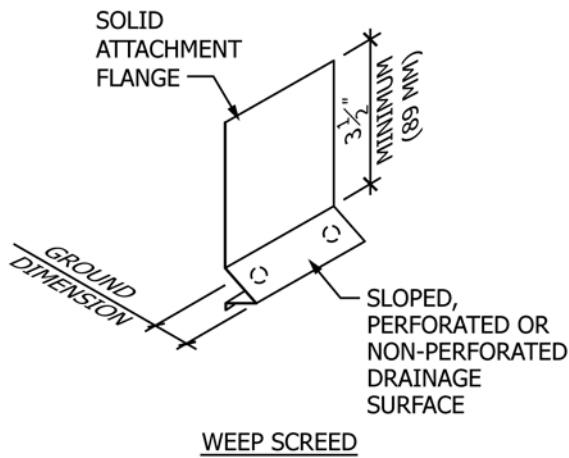
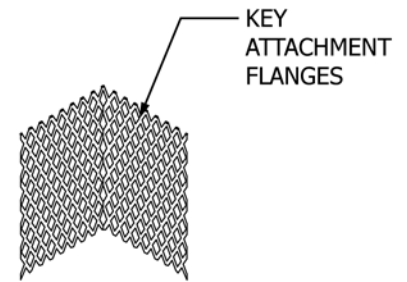
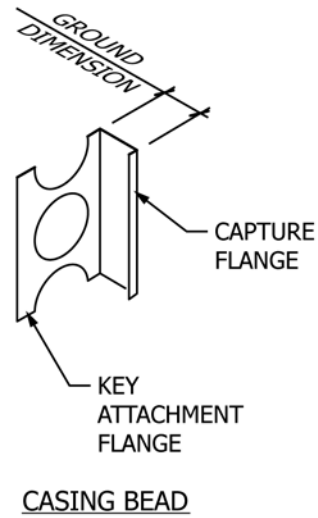
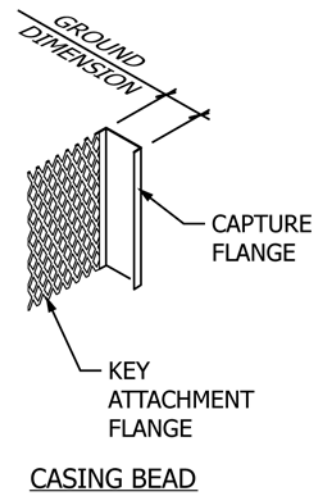
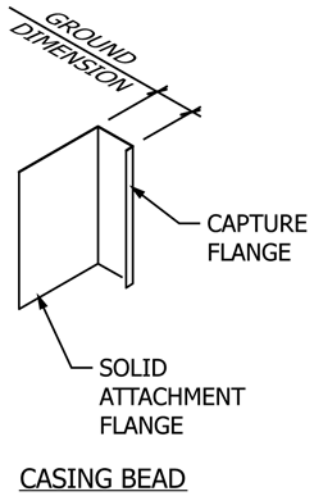
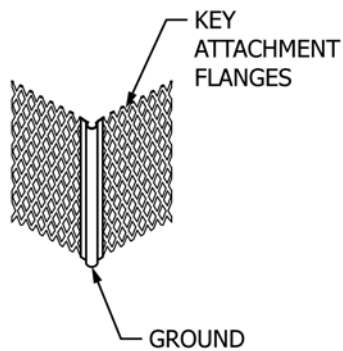


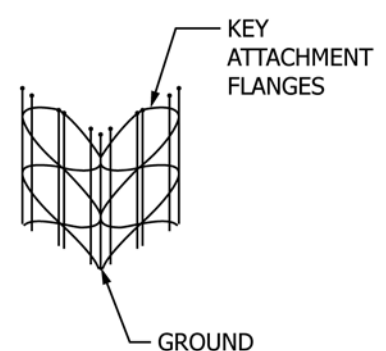
FIG. 1 Lathing and Furring Accessories, and Fasteners



INTERNAL CORNER REINFORCEMENT

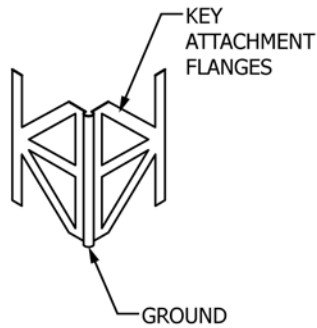


EXTERNAL CORNER REINFORCEMENT

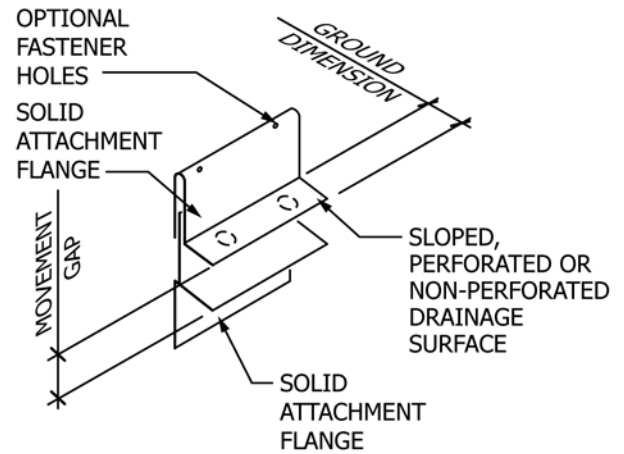


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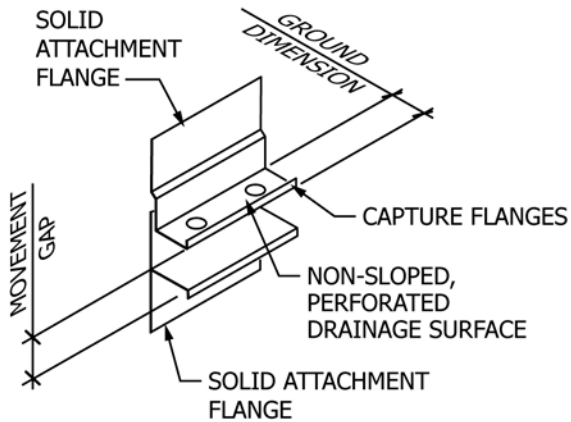
FIG. 1 Lathing and Furring Accessories, and Fasteners (continued)



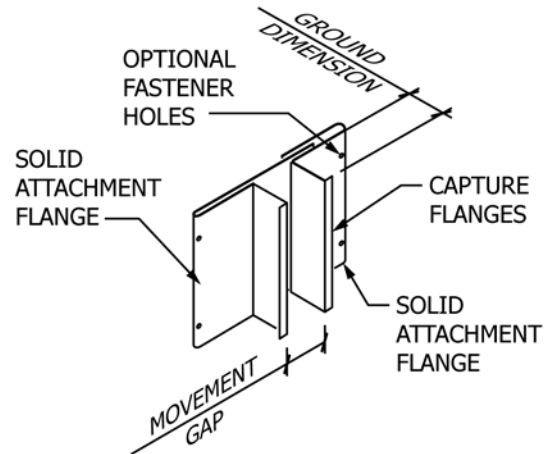
EXTERNAL CORNER REINFORCEMENT



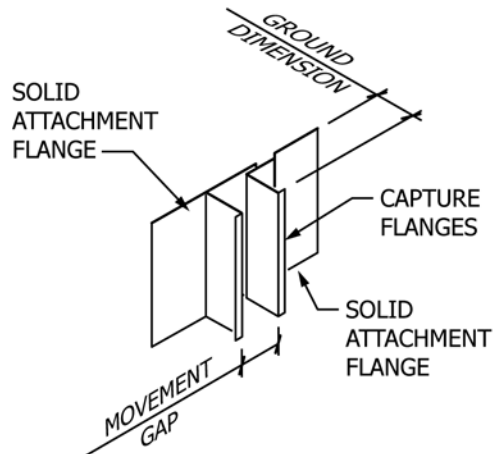
EXPANSION JOINT - HORIZONTAL



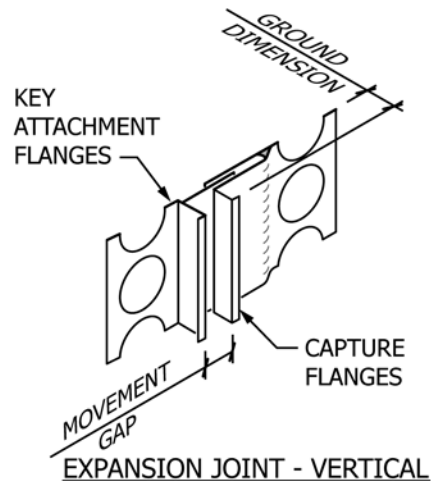
EXPANSION JOINT - HORIZONTAL



EXPANSION JOINT - VERTICAL

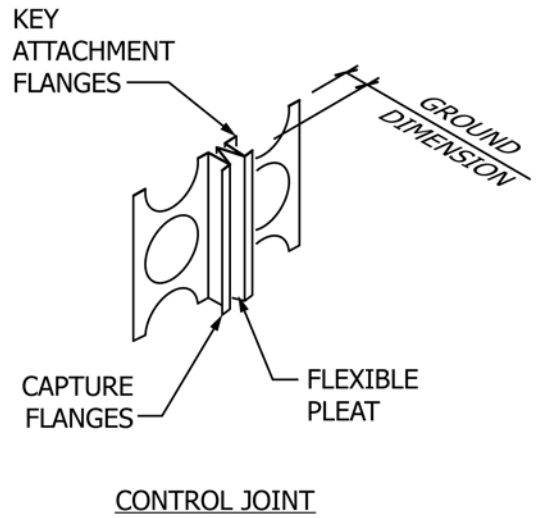
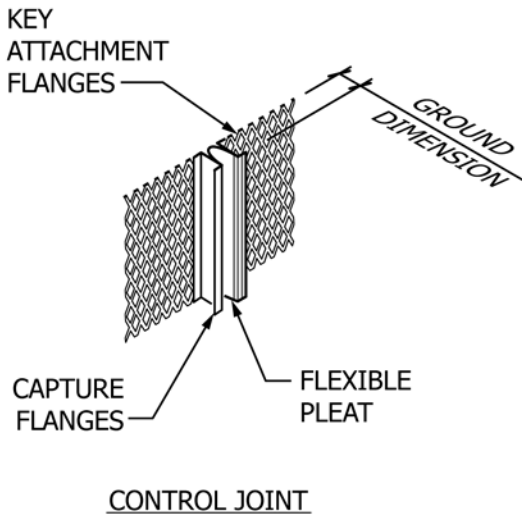


EXPANSION JOINT - VERTICAL



EXPANSION JOINT - VERTICAL

FIG. 1 Lathing and Furring Accessories, and Fasteners (continued)



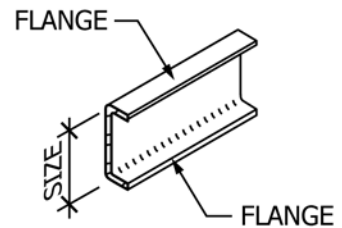
STRAP HANGER



ROD HANGER

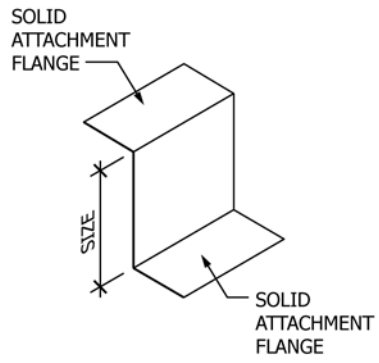


THREADED ROD HANGER

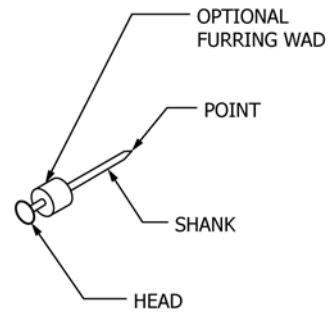


COLD-ROLLED CHANNEL FURRING

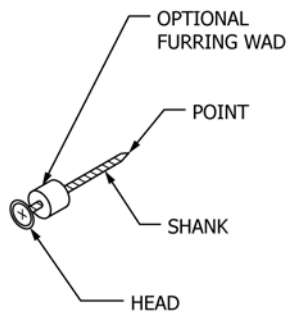
FIG. 1 Lathing and Furring Accessories, and Fasteners (continued)



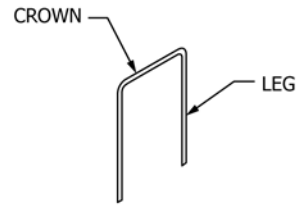
Z-FURRING



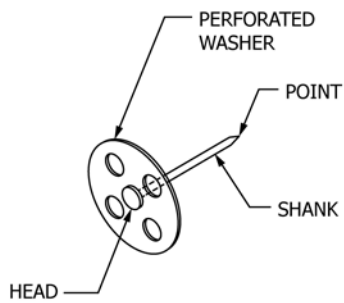
NAIL



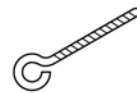
SCREW



STAPLE



POWER-ACTUATED FASTENER



EYE SCREW

FIG. 1 Lathing and Furring Accessories, and Fasteners (continued)

TABLE 1 Minimum Thickness of Lathing Accessories

Accessory	Base Material, in. (mm)				
	Steel & Stainless Steel, sheet	Steel & Stainless Steel, wire	Zinc Alloy, sheet	Aluminum, extrusion	PVC & CPVC Plastic, extrusion
Weep Screed and Drainage Screed	0.0172 (0.44)	---	0.0207 (0.53)	0.050 (1.27)	0.050 (1.27)
Casing Bead		---		---	0.035 (0.89)
Corner Reinforcement		0.0410 (1.04)	0.018 (0.46)	0.050 (1.27)	0.050 (1.27)
Expansion Joint		---		---	---
Control Joint					

4.3.2 *Designated Drainage Screed*—Lathing accessory located at designated exterior locations in addition to the bottom of exterior framed, or framed and sheathed walls, such as at floor lines of multi-story buildings, at soffit corners, above wall openings and projecting elements; used as a screed to assist in cement plaster thickness control; to facilitate drainage; to separate cement plaster from dissimilar materials, load bearing members and penetrating elements; and to provide an edge, end, or termination for a cement plaster panel area. Designated drainage screed shall include a solid vertical attachment flange and a drainage surface that is sloped and non-perforated, or non-sloped and perforated with a capture flange, or non-sloped and non-perforated without a capture flange.

4.3.3 Perforations, where provided on lathing accessory drainage surfaces to facilitate drainage, shall be ¼ in. (6 mm) diameter minimum or an equivalent non-circular perforation area, at 8 in. (200 mm) on center maximum.

4.4 Lathing Accessories for Casing:

4.4.1 *Casing Bead*—Lathing accessory used as a screed to assist in cement plaster thickness control; to separate cement plaster from dissimilar materials, load bearing members and penetrating elements; and to provide an edge, end, or termination for a cement plaster panel area.

4.4.2 *Casing Bead*—Solid flange, a casing bead with a solid attachment flange.

4.4.3 *Casing Bead*—Key flange, a casing bead with an attachment flange full of holes or of expanded sheet metal.

4.5 Lathing Accessories to Reinforce Corners:

4.5.1 *Internal Corner Reinforcement*—Lathing accessory used to reinforce internal cement plaster corners, with key attachment flanges of not less than 2 in. (50 mm) length, bent to an interior angle between the flanges greater than 90°.

4.5.2 *External Corner Reinforcement*—Lathing accessory used to reinforce external cement plaster corners; as a screed to assist in cement plaster thickness control; and to provide an edge, end, or termination for a cement plaster panel area, with key attachment flanges of not less than 2-½ in. (63 mm) length, bent to an interior angle between the flanges less than 90°.

4.6 Lathing Accessories to Reduce Cracking:

4.6.1 *Expansion Joint*—Lathing accessory used as a screed to assist in cement plaster thickness control; to reduce cracking by accommodating movement of the stucco cladding assembly caused by movement of the building or its components beyond cement plaster shrinkage and thermal variations; to separate cement plaster from dissimilar materials, load bearing members and penetrating elements; and to provide an edge, end, or termination for a cement plaster panel area. An expansion joint

lathing accessory shall be formed from two or more separate pieces with solid attachment flanges and a movement gap.

4.6.2 *Control Joint*—Lathing accessory used as a screed to assist in cement plaster thickness control; to reduce cracking by accommodating movement of the cement plaster cladding assembly caused by shrinkage and thermal variations, along predetermined, usually straight, lines; to separate cement plaster from dissimilar materials, load bearing members and penetrating elements; and to provide an edge, end, or termination for a cement plaster panel area. A control joint lathing accessory shall be formed as a single prefabricated piece with key attachment flanges and a flexible pleat, or assembled from a pair of casing beads installed back to back, with key attachment flanges and a flexible element functionally similar to the pleat, between them.

4.7 Furring Accessories:

4.7.1 *Rod Hanger, Strap Hanger*—Furring accessories used to suspend and support cold-rolled channel furring. Rod hangers shall be permitted to be smooth or threaded. Strap hangers shall be 1 in. wide by ¾-in. (25 by 5 mm) thick.

4.7.2 *Cold-rolled Channel Furring*—Furring accessory used to suspend and support lath and lathing accessories. Cold-rolled channel furring shall be in the sizes and weights indicated in **Table 2**, with flanges ½ in. (13 mm) wide and inside corner radii ⅛ in. (3 mm) maximum.

4.7.3 *Z-furring*—Z-furring used to support lath and lathing accessories and its fasteners for fastening to framing members or solid bases, is a customized support system which shall be engineered.

4.8 Fasteners:

4.8.1 Fastener types used to attach lath, lathing and furring accessories to framing members and solid bases shall be determined by framing member or solid base type as indicated in **Table 3**.

4.8.2 Fastener length requirements shall provide ¾ in. (19 mm) minimum embedment into framing members and solid bases, unless otherwise indicated in **Table 3**.

4.8.3 Nail and screw fasteners shall include optional furring wads where required to install non-self-furred lath.

TABLE 2 Cold-rolled Channel Furring

Sizes, in. (mm)	Weight, lb/1000 ft (kg/m)
¾ (19)	277 (0.412)
1½ (38)	414 (0.616)
2 (51)	506 (0.753)
2½ (64)	597 (0.888)

TABLE 3 Lath and Lathing Accessory Fasteners

Fastener Type		Vertical Framing Members			Horizontal Framing Members		
		Wood Studs or Furring	Solid Bases	Metal Studs or Furring	Wood Joists	Concrete Joists	Metal Joists
		Fastener Length, minimum ^A					
Nails (Specification F1667)	Roofing nail, barbed, 0.1205-in., 11 gauge (3.06 mm) shank diameter, and 7/16 in. (11 mm) head diameter, minimum	1 in. (25 mm)			1-1/2 in. (38 mm)		
	Common nail	6d					
	Concrete stub nail, 3/8 in. (10 mm) head diameter minimum		3/4 in. (19 mm)			3/4 in. (19 mm)	
Screws (Specification C954 or C1002)	7/16 in. (11 mm) head diameter minimum, in pan wafer head (also known as modified truss head or round washer head).	1 in. (25 mm), sufficient to provide 5/8 in. (16 mm) embedment minimum into framing member when the lath is installed.		Length sufficient to allow fasteners to extend through the steel connection with a minimum of three (3) exposed threads.	1-1/2 in. (38 mm)		1-1/2 in. (38 mm)
	Screws for wood framing members: Sharp point.						
	Screws for metal framing members: Self-piercing and tapping						
Staples (Specification F1667)					1-1/2 in. (38 mm) typical, or 1-3/4 in. (44 mm) for 3/8 in. Rib Lath		
	3/4 in. (19 mm) crown width, minimum	1 in. (25 mm)					
Power Actuated Fasteners (Requires approval by Authority Having Jurisdiction)	Hardened steel, 0.102 in. (2.59 mm) shank diameter minimum. Where fastener is installed without a washer, head diameter shall be 3/8 in. (10 mm) minimum. Where fastener head diameter is smaller than 3/8-in. (10 mm), fastener shall use a 7/8-in. (22 mm) diameter minimum corrosion resistant metal washer, which shall be perforated when washer diameter exceeds 1 in. (25 mm).						
			3/4 in. (19 mm)			3/4 in. (19 mm)	

^A Fastener lengths indicated on Table 3 are for fasteners installed directly into framing members or solid bases without additional components such as sheathing, furring wads, continuous insulation or a defined drainage space. Fastener length requirements shall be increased by the thickness of additional components installed between the lath and framing member or solid base such as sheathing, furring wad, continuous insulation, and a defined drainage space, where used.

4.8.4 Wire used for attaching lathing and furring accessories, shall be of a gauge (uncoated) corresponding with Steel Wire Gauge numbers as indicated in **Table 4**:

4.8.5 Adhesive used to attach lathing accessories onto solid bases.

TABLE 4 Wire Gauges

Wire Gauge (US Steel Wire Gauge)	Diameter	
	in.	mm
No. 20	0.0348	0.88
No. 19	0.0410	1.04
No. 18	0.0475	1.21
No. 17	0.0540	1.37
No. 16	0.0625	1.59
No. 14	0.0800	2.03
No. 13	0.0915	2.32
No. 12	0.1055	2.68
No. 11	0.1205	3.06
No. 10	0.1350	3.43
No. 9	0.1483	3.77
No. 8	0.1620	4.12

4.8.6 Eye screw fasteners used to fasten into horizontal wood framing members for attaching hanger wire, shall be No. 0, 0.3065 in. (7.78 mm) shank diameter minimum, 1-1/2 in. (38 mm) length.

4.8.7 Machine bolt fasteners used for attaching strap hangers to main runners, shall be round-headed with shank diameter 3/8-in. (10 mm) minimum.

5. Physical Properties

5.1 *Compatibility and Bond*—Lathing and furring accessory, and fastener materials shall be compatible with each other and with other materials in the cement plaster cladding assembly.

6. Dimensions and Permissible Variations

6.1 Lathing and furring accessories shall be free of twist or camber of a degree that will prevent their use in the assembly for which they are intended.

6.2 Length tolerances of lathing and furring accessories shall be $\pm 3/16$ in. (5 mm) for metallic lathing accessories, or $\pm 1/2$ in. (13 mm) for non-metallic lathing accessories.

7. Appearance

7.1 Edges of lathing and furring accessories shall be manufactured free of burrs and sharp edges.

8. Sampling

8.1 At least 0.25 % of the number of each type of lathing and furring accessory, and fasteners, in a shipment but not less than three pieces, shall be selected to represent the shipment and shall constitute a sample for the purpose of tests by the purchaser or user.

9. Inspection

9.1 Inspection of lathing and furring accessories, and fasteners shall be agreed upon between the purchaser and the supplier as part of the purchase order.

10. Rejection and Rehearing

10.1 Rejection of lathing and furring accessories, and fasteners that fail to conform to the requirements of this specification shall be reported to the producer or supplier promptly and in writing within ten working days from receipt of shipment by the purchaser. The notice of rejection shall contain

a specific statement of the respect in which the lathing and furring accessories or fasteners failed to conform to the requirements of this specification. In case of dissatisfaction with the results of the test, at the request of the producer or supplier, such notice of rejection shall be supported by results of a test conducted by a mutually agreeable independent laboratory.

11. Certification

11.1 When specified in the purchase order, a producer's or supplier's certification that the product meets the requirements of this specification shall be furnished to the purchaser.

12. Packaging and Package Marking

12.1 Lathing and furring accessories and fasteners shall be packaged to ensure safe delivery by common or other carriers.

12.2 When shipped for resale, the name of the manufacturer or seller and the brand and contents shall be legibly marked on each package.

13. Keywords

13.1 adhesive; cement plaster; casing bead; cold-rolled channel furring; control joint; corner reinforcement; drainage screed; expansion joint; fastener; furring accessory; lathing accessory; nail; screw; staple; weep screed

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