

Easy Embedment System™ (EES) Lathing System for Portland Cement Based Plaster (Stucco)

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BACKGROUND

ASTM C926 sets forth the minimum technical requirements for full thickness, Portland Cement Based plaster in two and three coat stucco systems. Stucco is comprised of a base and finish coat applied to a plaster base of self furred or furred lath when the solid backing surface is a sheathing product such as gypsum, wood (oriented strand board or plywood), or foam board. Stucco can also be applied to lath on solid plaster bases such as concrete, concrete masonry units and brick or directly to the solid plaster base. Acceptable lath products include welded wire lath that complies with ASTM C933 and installed in accordance with ASTM C1063.



ASTM C1861 contains the minimum requirements for stucco lathing accessories while ASTM C1063 sets forth the installation. Accessories serve one or more purposes including reinforcement, termination, transition to other elements or materials, gauge stucco thickness, crack control and moisture management. Common types of accessories include corner beads, casing beads, expansion joints, control joints, weep screeds, reveals, soffit vents, and drips. Most accessories are available with multiple ground dimensions to accommodate different stucco thicknesses and applications.

Lathing accessories are available with a solid or key attachment flange. Solid flange accessories incorporate a drainage surface or provision such as a slope, perforations or weep holes and are used if drainage is required such as at the base of the wall. The water resistive barrier overlaps the solid flange to provide continuity of the moisture management system and a means for moisture that bypasses exterior elements to exit through the drainage provision of the accessory. Accessories with key attachment flanges have holes or openings that directly contact and overlap the lath to form a lathing system. Stucco applied over the lathing system provides embedment and connection of the key attachment flange with the lath.

EASY EMBEDMENT SYSTEM (EES) FOR STUCCO - INTRODUCTION

The Easy Embedment System (EES) is a lathing system comprised of Structa Lath Welded Wire Lath that complies with ASTM C933 and vinyl/PVC E-Flange™ lathing accessories that meet ASTM C1861.

Structa Lath is available in two product options both of which are designed with large openings to facilitate the stucco application and improve embedment which mitigates the potential for corrosion (rust). Structa Lath is produced in large rolls that are easy to handle, install with fewer overlaps and therefore improve productivity.

E-Flange™ lathing accessories incorporate a key attachment flange with raised ribs and large triangular openings. This unique design improves contact between the lath and attachment flange plus it is easy to tie to control joints. E-Flange™ improves the flow of stucco through the openings which results in a strong connection to the lath and 70% improved embedment compared to traditional key attachment flanges.

EES is for use with ASTM C926 stucco applications that incorporates lath with base coat applied at nominal 3/4 to 7/8" thick. Numerous lath and accessory product options are available to suit a wide range of applications and conditions.

EASY EMBEDMENT SYSTEM (EES) – PRODUCT OPTIONS

STRUCTA LATH WELDED WIRE LATH

- **Twin Trac**

- 1.14 lbs/yd² which is equivalent to ASTM C847, 2.5 lbs/yd² Expanded Metal Lath
- Self-furred
- Designed especially for commercial construction
- Incorporates eight secondary cold-rolled longitudinal wires that adds strength and forms a track for convenient attachment.
- For use on walls with 16" o.c. stud spacing and ceilings with maximum 16" o.c. framing per ASTM C1063 Table 1

- **Mega Lath**

- 1.95 lbs/yd² which is equivalent to ASTM C847, 3.4 lbs/yd² Expanded Metal Lath
- Self-furred
- Easy attachment, for use on all types of construction
- Specifically designed for stucco applications that require extra reinforcing for greater spans or over horizontal Z-furring
- For use on walls with 16" or 24" o.c. stud spacing and ceilings with maximum 24" o.c. framing per ASTM C1063 Table 1

EASY EMBEDMENT SYSTEM (EES) – PRODUCT OPTIONS (CON'T)

E-FLANGE LATHING ACCESSORIES

- E-Corner Bead
 - Provides fully embedded corner reinforcement that is not visible below the stucco finish
- E-Flange Control Joint
 - Used to relieve stress and assist with crack control in large areas of walls and ceilings. The raised ribs of the flange assist when tying to Structa Lath.
- E-Flange Casing Bead
 - Designed to terminate stucco adjacent to doors, windows, and other openings or dissimilar materials.
 - Available with weep holes
- E-Flange Bandmaker Casing Bead
 - Similar to E Flange Casing Bead with a reinforcing rib to assist in keying thick stucco applications such as bands and other architectural features.
- BackerBead with E-Flange
 - E-Flange Casing Bead with a factory applied closed cell backer rod that provides a separation or space for sealant between the stucco and opening or dissimilar materials. It eliminates the need to install a separate backer rod and sizes the joint width as well as depth. When properly caulked, the factory applied backer rod will not be visible.
- E-Flange vinyl/PVC accessories are available in 10-foot lengths, standard white and colors including tan, gray, black, or brown upon request.
- Refer to the website (Exterior Finishing | Clark Dietrich Building Systems) for additional accessory options for stucco, Exterior Insulation and Finish Systems (EIFS), Direct Applied Finishing Systems (DEFS), and Adhered Manufactured Stone Veneer (AMSV).

EASY EMBEDMENT SYSTEM (EES) – INSTALLATION

Below are important items for installation of the lathing system comprised of E-Flange accessories and Structa Lath welded wire lath. Follow building codes, product literature and standards such as ASTM C1063 C933, and C1861 for complete information pertaining to types, uses, installation, etc.

- **Accessories**

- Do not overlap accessories.
- Accessories with key attachment flanges can be installed under or over welded wire lath.
- Except for accessories with solid attachment flanges, the water resistive barrier (WRB) shall be installed under lathing accessories and welded wire lath. Do not install water resistive barriers between lath and key attachment flanges.
- Ground dimension of accessories shall accommodate the specified stucco thickness.
- Intersection of two or more accessories
 - Miter accessory corners and intersections
 - Install vertical accessories through the intersection unless the horizontal accessory serves an expansion or drainage function.
 - Allow a gap between butt and miter joints of accessories. Seal all joints and gaps with low modulus, exterior grade sealant.

- **Accessory Attachment**

- Control joints - Discontinue lath at control joints and tie welded wire lath to key attachment flanges on both sides. Stagger placement of ties and space 9" o.c. maximum.
- Other accessories - Secure attachment flanges 7" o.c. maximum with appropriate type, length and corrosion resistant fasteners.
 - Alternate attachment method for solid plaster bases (concrete, CMU, etc.)

Adhere key flange of accessory to solid plaster base with compatible, gun-grade exterior construction adhesive that bonds to PVC accessory and substrate. Apply 1" dabs, 7" o.c. or semi continuous adhesive bead between the solid plaster base and solid portion of the key attachment flange.

EASY EMBEDMENT SYSTEM (EES) – INSTALLATION (CON'T)

• Welded Wire Lath

- Install perpendicular to framing members with ends of adjoining lath staggered unless otherwise specified.
- Sides, ends, and other locations of adjacent pieces of welded wire lath shall be overlapped according to product specifications. Overlaps between framing members shall be tied 9" o.c. maximum.
- Discontinue lath at control joints and tie to key attachment flange of accessory on both sides. Stagger placement of ties and space 9" o.c. maximum.
- Fasteners shall be fabricated from steel or stainless steel and comply with applicable standards. Steel fasteners shall have corrosion resistant coating or plating.

• Welded Wire Lath Attachment*

- Wood framing members (vertical)
 - Fastener types
 - Nails – Minimum 6d common or barbed roofing nail with 11-gauge shank diameter and minimum 7/16 in. diameter head, minimum 1 in. penetration into wood framing member
 - Screws – No. 6 shank diameter min, 7/16 in. head diameter with flat underside and full length threads. Type A coarse pitch tapping screw thread with self-piercing and tapping point (sharp point), minimum 5/8 in. penetration into wood framing member
 - Staples – 16 gauge, 3/4" crown width, minimum 3/4 inch penetration into wood framing member.
 - Attach lath to framing members with fasteners spaced no more than 7" o.c. vertically
 - Avoid placing fasteners between framing members
- Wood joists (horizontal)
 - Screws – No. 6 shank diameter min, 7/16 in head diameter with flat underside and full length threads. Type A coarse pitch tapping screw thread with self-piercing and tapping point, minimum 5/8 in penetration into wood framing member
 - Staples – 16 gauge, 3/4" crown width, minimum 1 1/4-inch penetration into wood framing member
 - Attach lath to framing members with fasteners spaced no more than 7" o.c.
 - Avoid placing fasteners between framing members

EASY EMBEDMENT SYSTEM (EES) – INSTALLATION (CON'T)

- Steel framing members (vertical) and steel joists (horizontal)
 - Screws – No. 6 shank diameter min, 7/16 in head diameter with flat underside and full length threads. Type A coarse pitch, tapping screw thread with self drilling and tapping screw point for steel members between .033 and .112 inch thick and self piercing and tapping screw point (sharp point) for steel members less than .033 inch thick.
 - Fasteners shall be sufficient length to extend minimum three exposed threads through framing member.
 - Attach lath to framing members with fasteners spaced no more than 7” o.c. vertically
 - Avoid placing fasteners between framing members
- Solid plaster bases (vertical) and concrete joists (horizontal)
 - Nails – 3/8” diameter head concrete stub nail, 3/4” minimum penetration into solid plaster base.
 - Power actuated fasteners – Hardened steel .102 in shank diameter min. with 3/8 in diameter head, Minimum 3/4” penetration. Smaller head fasteners can be used in conjunction with min 7/8” diameter corrosion resistant washers. Washers shall be perforated if the diameter is greater than 1”. Power actuated fasteners require approval of the Authority having Jurisdiction (AHJ).
 - Install fasteners in horizontal rows spaced not more than 16” o.c. and vertically no less than 7” o.c.

*Compliance with minimum fastener penetration may result in increased fastener shank diameter from minimums shown.

ADDITIONAL INFORMATION AND RESOURCES

- ASTM C926 – Standard Specification for Portland Cement Plaster
- ASTM C1063 – Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement Plaster (Stucco)
- ASTM C1861 – Standard Specification for Lathing and Furring Accessories and Fasteners for Interior and Exterior Portland Cement Plaster
- ASTM C1780 – Standard Practice for Installation Methods for Adhered Manufactured Stone Veneer
- ASTM C841 – Veneer and Plaster Accessories
- ASTM C847 – Standard Specification for Metal Lath
- ASTM C933 - Standard Specification for Welded Wire Lath
- ASTM D1784 Rigid poly vinyl chloride (PVC) and chlorinated poly vinyl chloride compounds
- ASTM D4216 Rigid poly vinyl chloride (PVC) and related PVC and chlorinated poly vinyl chloride compounds (CPBVC) building product compounds
- 2021 International Building Code (IBC) and International Residential Code (IRC)
- ClarkDietrich – www.clarkdietrich.com