

Attachment of Lath and Accessories to Concrete or Masonry

This Field Technical Sheet covers the attachment of lath reinforcement and trim accessories to the following substrates: masonry, concrete and concrete masonry units (CMU).

Lath may not always be necessary. The condition of the substrate and thickness of the plaster indicate whether a lath is required or direct application of portland cement plaster is acceptable. The recommended lath for concrete substrates is a self-furred, expanded-metal lath.

Power-actuated fasteners and mechanical anchor systems are the approved fasteners for the attachment of lath and/or trim accessories to concrete and masonry (grout joints). Concrete nails are approved only for masonry grout joints. A combination of the above fasteners can be used.

General Notes:

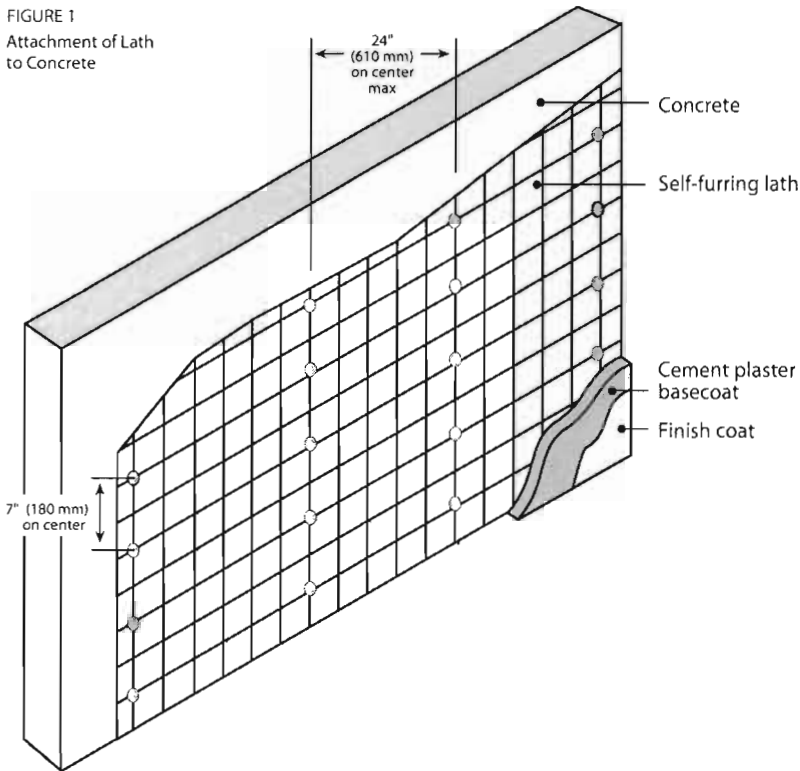
1. All fasteners shall be corrosion-resistant.
2. Lath should lap over the nailing flange of trim accessories (casing beads and reveals).
3. This Field Technical Sheet is intended for vertical surfaces (walls) only.
4. All fasteners should have a minimum 50-lb pull-out resistance.
5. All lath over concrete, masonry and CMU shall be self-furred.
6. All fasteners shall engage the crotch of the lath and be driven "home."
7. A weather-resistant barrier is not typically recommended between portland cement plaster (stucco) and a concrete or masonry substrate.
8. Trim accessories may be wire-tied or mechanically fastened.
9. Follow all manufacturer's recommendations with fasteners and power-actuated devices.
10. **Safety Note:** Only trained and authorized personnel familiar with specific manufacturer guidelines and all safety regulations governing the use of the tool should operate power-actuated tools.
11. For further information, refer to the current edition of the NWCB *Stucco Resource Guide*.

Fasteners:

- Concrete Nails: (masonry only)
9-gauge, minimum 3/8-inch (9.5mm) diameter head, minimum 3/4-inch (19mm) length.
- Drive or Strike pins:
1/4-inch (6.4mm) diameter insert with a 1/2-inch (12.7mm) mushroom head and minimum 3/4-inch (19mm) length.
- Power Actuated Fasteners:
3/4-inch (19mm) long hardened drive pins with a 1/2-inch (12.7mm) diameter galvanized disc or washer. *See general notes 9 & 10.*

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FIGURE 1
Attachment of Lath to Concrete



Fastening

Concrete (Figure 1)

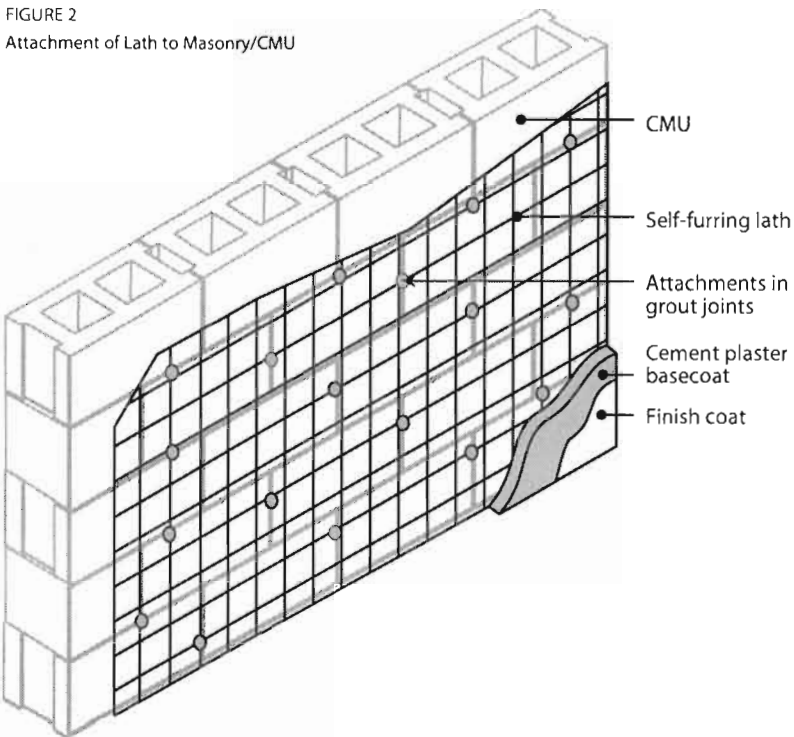
- It is important to know the PSI of the concrete for proper attachment.
- Concrete should be cured a minimum of 28 days prior to lath attachment.
- Coordinate the drilling method with the PSI of the substrate, and use the recommended drill and drill bit for the intended fastener.
- Fasteners shall be driven “home” and not spall the concrete.
- Follow manufacturer’s guidelines for power-actuated fasteners (test sections will be required).
- Fasteners shall penetrate concrete a minimum of 3/4 inch (19mm).
- Optional attachment methods may be used upon approval.
- Pattern: 24 inches (610mm) horizontally and 7 inches (180mm) vertically (similar to a framed wall).

Masonry/CMU (Figure 2)

- Attach lath and trim accessories to grout joints to avoid breaking masonry/CMU.
- Concrete nails or other approved nails may be used if they penetrate 3/4 inch (19mm).
- Pattern: Spacing of fasteners should approximate that of lath on stud construction, 24 inches (610mm) horizontally and 7 inches (180mm) vertically.

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FIGURE 2
Attachment of Lath to Masonry/CMU



Attachment of Lath to Metal or Wood Framing

The attachment of metal bases (lath) to receive portland cement plaster (stucco) has created some confusion over the years. Lath is intended to be attached to the framing supports through the sheathing, not merely to the sheathing for best results. As the layer of weather resistive barrier (WRB) is applied horizontally, the lather will mark the stud locations on the first (lower) layers of WRB with a lumber crayon for future and final nail/fastener attachment to the framing members through the sheathing.

SPACING OF FASTENERS

The International Building Code (IBC) references ASTM C-1063 for the attachment of lath to wood and metal supports. The International Residential Code (IRC) covers lath attachment in section R703.6.1. All attachments are intended along framing supports (studs and joists). ICC evaluation reports for stucco all make reference to attaching lath to framing supports.

ASTM

The American Society of Testing Materials document ASTM C-1063 covers the installation of lath for portland cement plaster and is much less confusing. For example section 7.10 is entitled "*Application of Metal Bases to Supports*". This specification is consistently referring to the attachment of lath to supports. There is a note that "*where ends laps occur between the supports, the ends of the sheets of all metal plaster bases shall be laced or wire tied*".

LATH

The lath may be welded wire, woven wire or an expanded type. All should be applied taut to the wall to prevent bulges that may protrude beyond the plaster grounds. This can be more difficult with lath that comes on a roll than sheet products as the memory of the roll may affect the plane of the lath. While an occasional fastener between the framing members to remove a bulge should not be a reason for concern, excessive nailing between framing members can negate the factory furring and increase the possibility of water penetration, loose areas of lath can be tightened by using a pair of pliers and twisting the loose area after final nailing (see graphic on reverse).

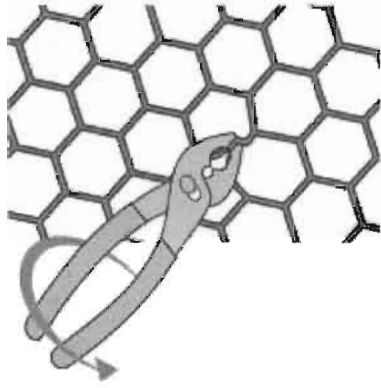
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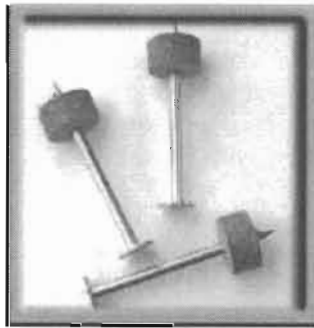
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Staples, nails and screws are acceptable fasteners for lath. For wood framing, the fastener must penetrate into the wood stud by $\frac{3}{4}$ inch. Some fire ratings call for 1 inch. Screws for steel framing shall have three full threads exposed on the back side.

FURRING

Most lath sold today is self-furred. This means no additional methods to create furring (furring nails) are required. The lather stretches the lath taught across the wall and attaches at supports. It is "not" possible to attach 17 gauge wire lath or 3.4 psy metal lath too tight if the attachments are along framing supports. While it may appear the lath is rather tight to the weather-resistive barrier, cement **will** get behind the lath. It is possible to have the lath too tight if an excessive amount of staples are used in the field (between framing supports).



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