Guidelines For Metal Lath Installation And Re-siding Dwellings With Stucco Or EIFS

Planning and Development Services Department www.opkansas.org

METAL LATH

The 2018 International Building Code and 2018 International Residential Code are the national standards adopted by the City of Overland Park that contractors should reference for the installation of metal lath.

Refer also to ASTM C847, ASTM C926, and ASTM C1063. All materials must meet ASTM standards of testing.

Lath is not required over masonry, cast-in-place concrete, precast concrete or stone substrates prepared in accordance with ASTM C1063.

Wood supports for lath must be at least 2 inches nominal thickness in the smallest dimension. If installed over a solid backing, wood furring strips may be as small as 1 inch by 2 inches. Studless partitions must be at least 2 inches thick in order to apply a rib metal lath. Other types of metal lath are not permitted. The rib metal lath in such a condition can only be equal to 3/4 inches thick.

The materials and accessories need to be visibly marked by the manufacturer’s showing compliance with the codes. They need to be stored in a way that protects them from weather conditions.

Metal lath and lath attachments all must be of corrosion-resistant materials.

Gypsum lath and wallboards cannot be used as backing for self-furred metal lath or self-furred wire fabric lath and cement plaster unless they have a water-resistive barrier and are either used for interior wall applications only, or are used for horizontal supports of ceilings or roof soffits. Gypsum sheathing is allowed as a backing for metal and wire fabric laths, and for cement plasters on walls, when it also has a water-resistive barrier.

A water-resistive barrier installed over wood-based sheathing must also have a water-resistive vapor-permeable barrier with a performance equal to or greater than two layers of water-resistive barrier (ASTM E2556, Type I). Each individual layer must be installed independently of other layers, so that each layer provides a separate continuous plane. Any flashing used to drain to the water-resistive barrier must direct water to stay between the layers. The vapor-permeable barrier is not required if the water-resistive barrier meets ASTM E2556 Type II and is separated from the stucco by a drainage space or nonwater-absorbing layer.

Metal lath used in residential wall and ceiling applications must have a maximum support spacing of 16 inches on center when it is 3/8 inches thick, or a maximum of 24 inches on center when it is 1/2 inches thick.

Expanded metal or woven wire lath must be attached with either 11 gage nails that are 1.5 inches long and have 7/16 inch heads, or with 16 gage staples that are 7/8 inch long and with a maximum spacing of 6 inches between staples.
WATER-RESISTIVE BARRIERS FOR STUCCO AND EIFS

Asphalt felt must be applied over the studs or sheathing of all exterior walls. The felt is applied horizontally, with the upper layer lapping at least 2 inches over the lower layer. Vertical joints must lap at least 6 inches. The felt has to be continuous to the top of the walls.

Water-resistive barriers are not required in detached accessory buildings that do not serve as dwellings, or in detached accessory buildings that do not have conditioned space.

There are other approved water-resistive barrier materials available that may be used according to their manufacturer’s instructions.

FLASHING FOR STUCCO AND EIFS

All flashings must be corrosion-resistant and applied in an overlapping pattern like shingles, to prevent water from entering the building. Flashings must extend through to the top and bottom edges of the exterior wall finish.

Flashings may be made of metal, self-adhered membranes, or fluid-applied membranes, or a combination of materials.

Flashing must be installed:

1. At all openings
2. At the intersection of chimneys or other masonry components projecting through the building envelope
3. Under and on each side of stucco copings
4. Under and at the ends of masonry, wood and metal copings and sills
5. Above all projecting wood trim pieces
6. Where porches, decks and stairs attach to the wall or floor of wood-framed construction
7. At wall and roof intersections
8. At built-in gutters

STUCCO

Two and three-coat systems have a minimum thickness ranging from ½ inch to 7/8 inches. If a stucco thinner than 3/4 inches is proposed, then the stucco mix must have an evaluation report by the International Code Council Evaluation Service (ICCES) in order to be approved. The evaluation report number is also required to be visible on the bag of mix.

The stucco should not extend below the lath, paper, or screed.

Weep screeds made of corrosion resistant metal or plastic must be installed at or below the foundation plate line on exterior stud walls for stucco applications. The weep screed must be at least 4 inches above the finished ground elevation or 2 inches above paved areas. Weep screeds allow trapped water to drain out of the wall. Water-resistive barriers must be installed in all stucco applications. When applied over a wood-based sheathing, water-resistive barriers will also have vapor-permeable barriers equivalent to two layers of Grade D paper. The weather-resistant barrier shall overlap the attachment flange.

Each layer will be installed independently and provide a separate continuous plane. Flashing shall be installed in a manner that directs water to drain out between the layers. Each coat must be kept moist for at least 48 hours prior to applying the next coat.
The finish coat for either two- or three-coat systems may not be applied until seven days have passed. If you’re using a three-coat system, the second layer may not be applied until at least 48 hours have passed.

There are several products available which meet these criteria. When securing a permit, declare the intended type of product. The inspectors will review the product on site before they approve the lath inspection.

**EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)**

EIFS must always terminate at least 6 inches above the finished ground level. Decorative trims cannot be face-nailed through the EIFS, since it can lead to moisture penetration.

EIFS without drainage may only be used over concrete or masonry wall substrates.

EIFS with drainage may be used over all wall substrates, per the manufacturer’s instructions. The drainage will be a water-resistant barrier, placed between the EIFS and the substrate.

**INSPECTIONS**

Lath product inspections must be made after lathing is in place, but before any plastering is applied. Following are some key points that city inspectors will be inspecting for:

1. Metal lath shall be lapped 1/2 inch minimum on sides (the long dimension) and 1 inch minimum on ends (the short dimension). End laps shall occur over studs.
2. For paper backed lath, the vertical and horizontal joints should be backing-to-backing, and metal on metal. The paper shall never extend over the lath and must be installed in a shingled fashion. Refer to Examples 5 & 6 below.
3. Metal plaster bases shall be attached to framing members (studs) at not more than 7 inch intervals along framing members. It is intended to have the lath attached to the studs. The attachment should be through the self-furring mechanism only, e.g. fasten through dimples or v-groove, so as not to reduce embedment of the lath in the stucco. In lieu of wire tying the lath, a limited number of staples may be utilized to secure the lath to the exterior façade.
4. Care should be taken to not over staple self-furring lath. Over stapling can depress the lath to a point where it is impossible to get the lath embedded into the plaster cement.
5. Metal lath shall be applied with the long dimension perpendicular to the supports. For narrow wall panels (less than 24 inches), it is generally acceptable to apply the long dimension parallel to the framing members. It is not recommended to follow the roof rake on gables.
6. Control joints shall be installed to delineate areas of not more than 144 square feet. The distance between expansion or control joints shall not exceed 18 feet in any direction or a 2.5:1 length to width ratio. Expansion and control joints shall always be located where movement is anticipated. Refer to Example 8.
7. Lath shall not be run continuously through expansion or control joints. The inspector will want to witness that the expansion or control joint has been cut. When cutting the lath, care must be taken not to damage the water-resistant barrier. The expansion or control joint shall be wired, tied, or stapled at each side, at not more than 7 inches on center.
8. Where two or more expansion or control joints intersect, the vertical member should be continuous and unbroken.
9. External corner reinforcement shall be used where corner bead is not used.
10. At internal corners, there are various details that one may follow dependent upon the situation. When installing the lath or accessory, extreme caution and care should be taken to avoid damaging the water-resistant barrier. To avoid tearing, keep the barrier tight to the corner. Refer to Example 7.
11. Lath is to terminate above stoops and other concrete flatwork. Where a concrete porch or stoop is to be poured adjacent to wood framing, a galvanized metal flashing shall be installed along the wood framing. It
is recommended that the flashing stop at a point 3 inches above the concrete. The water-resistive barrier can then lap over this piece of flashing. Refer to Examples 1-3.

12. Foundation weep screeds are required. The purpose of the weep screed is to allow any water that may be flowing across the drainage membrane a means to escape. The City of Overland Park has decided to accept some alternative details showing how a casing bead may be utilized as a weep screed when applied over both layers of paper. Refer to Example 4.

13. As part of the metal lath inspection, the material being applied over the lath is required to be on-site for inspection and approval. If not, the inspection will fail. Stucco finishes and stucco systems with a valid ICC Evaluation report shall be installed in accordance with the report.

Stucco and EIFS Inspections:

9. An inspection of the installation of the first layer of water-resistive barrier is required. The inspectors will also be looking at how decks, windows, doors and other openings are flashed.

10. If the second water-resistive barrier consists of a paper backed lath, then a lath inspection is required.

11. Manufacturer’s installation instructions and one copy of any approved construction documents must be available on the job site during any inspection.

12. If you have any questions about flashing, the installation of lath or the installation of a water-resistive barrier, it is best to discuss your concerns with an inspector prior to doing any work. Inspectors can be reached at (913) 895-6220.

**FOUNDATION WEEP SCREED ALTERNATE DETAIL (Example 1)**

Termination at Foundation/Finished Grade
FOUNDATION WEEP
SCREED ALTERNATE DETAIL (Example 2)

CEMENT PLASTER
SHEATHING
SELF-FURRING LATH
WATER RESISTANT BARRIER, LAP OVER CASING BEAD AND BELOW END OF SHEATHING BOARD

Termination at Grade

3 1/2''

3/4'' (19 mm)

1/2'' (12 mm)

1/4'' (6 mm)

CASING BEAD WITH 3 1/2'' SOLID BACK FLANGE AND WITH WEEP HOLES
FINISH GRADE

FOUNDATION WEEP
SCREED DETAIL AT SIDEWALK/DRIVE (Example 3)

SELF-FURRING LATH
CEMENT PLASTER
FRAMING MEMBER
SHEATHING
WATER RESISTANT BARRIER, OVER LAP METAL FLASHING & LAP BEHIND CASING BEAD
CASING BEAD (WEEP HOLES OPTIONAL)
BACKER ROD AND SEALANT
METAL FLASHING

Termination at Slab/Sidewalk

4'' (102 mm)

5/8'' (16 mm)

SEALANT
FOUNDATION WEEP
SCREED DETAILS (Example 4)

Casing Bead at Concrete Foundation

Weep Screed at Concrete Foundation
CODE VIOLATION
PAPER ON METAL LATH (Example 5)

CORRECT INSTALLATION
PAPER UNDER METAL LATH (Example 6)
KICK-OUT FLASHING DETAIL
AT ROOF LINE (Example 7)

NOTE:
FLASHING MEMBRANE TO BE INSTALLED BEHIND FASCIA
THAT ABUTS WALL. MRB TO BE INSTALLED IN "SHINGLE-FASHION" WITH
FLASHING MEMBRANE.
FLASHING MEMBRANE
SEALANT (OPTIONAL)

WATER TIGHT DIVERTER SEAMS (TYPICAL)

KICKER FLASH

FLASHING MEMBRANE

NOTE:
FLASHING IN DETAIL F4
MAKES FUTURE RE-ROOFING EASIER

F10 - Roof/Kicker Flashing Axonometric
The City of Overland Park does not warrant the accuracy, completeness, or timeliness of the information contained in this handout. To verify the city requirements please refer to the official version of the Municipal Code.