



## GUILFORD COUNTY PLANNING AND DEVELOPMENT

## Stucco Guidelines

For new construction, it is assumed that the framing and sheathing have been applied, inspected and are satisfactory. Note that satisfactory sheathing for Portland Cement Plaster (Stucco) can consist of plywood, OSB (oriented strand board) or exterior grade (ASTM C-79) gypsum.

1. Step flashing and kick-outs (diverters) shall be installed at all roof areas where shingles abut walls prior to the installation of the stucco. (NRCA Figure 11-Wall Flashing) (NCSBC Volume VII, Section 903.6)
2. Perimeter flashing shall be installed around all windows and doors and sill flashing installed beneath all sills prior to the installation of the stucco. (NCSBC Volume VII, Section 703.8) Windows and doors shall be tested and labeled to indicate compliance with the requirements of the following specifications: Aluminum polyvinylchloride wood AAMA (ANSI) 101 wood ANSI/NWWNDA I.S.-2.  
Flashing materials shall be installed in a manner that will collect and discharge water to the exterior of the wall. Provide end dams at all terminations of flashings.  
Flashing materials shall be galvanized metal, copper, lead coated copper, stainless steel or PVC at heads and sills. Aluminum flashing shall not be used.
3. Install flashing where deck attaches to the house. Flashing shall extend continuously from a height of 4 inches above the planned bottom termination edge (drip edge) of the stucco, behind the attachment band of the deck to the house and exit below the attachment band of the deck to the house with a 45° drip edge. Seal all fastener heads that attach the deck to the house. (NCSBC Volume VII, Section 703.8)  
Flashing materials shall be galvanized metal, copper, lead coated copper, stainless steel or PVC AT heads and sills. Aluminum flashing shall not be used.
4. Install a Grade D weather resistant barrier over the face of the sheathing. Weather resistant material may be 14 lbs. felt or DuPont Tyvek Homewrap. The water-resistant barrier shall be lapped not less than 2 inches at horizontal joints and not less than 6 inches at vertical joints. Fasteners for the attachment of the weather resistant barrier shall be non-corrosive fasteners with nylon plates. (NCSBC Volume VII, Section 703.2)  
Two (2) layers of 14 lbs. water-resistant material having a 10 minute water penetration rating (ASTMD-779) or one layer of water-resistant material having a 60 minute water penetration rating (ASTMD-779) shall be used shall be installed. Paper backed metal lath meeting these water penetration requirements may be used in lieu of 14 lb. felt or Tyvek. The weather resistant barrier shall lap over the vertical leg of flashings above openings and shall be installed beneath the vertical leg of the sill flashing below openings.
5. Install the corrosion-resistant (hot-dipped galvanized) lathing and corrosion-resistant (hot-dipped galvanized or PVC) accessories. (NCSBC Volume VII, Section 703.6). The purposes of the typical accessories are as follows:
  - a. Corner Bead - Reinforcement and allows plaster to be applied without hollow areas.
  - b. Inside corner Joint - Provides stress relief at internal angles.
  - c. Casing Beads - Installed wherever plaster terminates or abuts dissimilar material.
  - d. Foundation Screeds - Installed no lower than 4 inches above finished grade. Allows trapped moisture to evacuate from the space between the felt paper and plaster. Drip edges shall be provided at all horizontal joints at floor lines and terminations at foundations.
  - e. Control Joints - Designed to relieve stress concentrations in plaster. Control joints shall be installed in walls to product panels of no more than 144 square feet in area and a length to width ratio not exceeding 2.5 to 1.0 for any panel. Control joints shall be spaced no farther apart than 18 ft. (ASTM C-1063)(ACI, Section 7.3)  
Install control joints with sealants at all locations where the stucco abuts other dissimilar material. Architectural trims shall not be installed on top of control joints.
  - f. All accessories should have perforated or expanded flanges and be installed in a manner that will bond the stucco to the accessory.
6. Installation of galvanized diamond self-furring expanded mesh metal lath (3.4 lb/sq. yd.-self furring, commercial grade).
  - a. Metal lath must be applied with long dimension of the sheets perpendicular to the supports.
  - b. Fasteners for attaching diamond mesh self-furring expanded metal lath to vertical wood supports shall be corrosion resistant (hot-dipped galvanized) 1" long roofing nails having a 7/16" diameter head, 1 1/2" long galvanized common nails (6d), or 1" wire staples driven flush with the plaster base. On vertical wood supports, common nails shall be bent over to engage at least three strands of lath or bent over a rib when installing the lath. (ASTM C-1063, Section 7.10.2 & NCSBC Volume VII, Section 703.6)  
Fasteners for attaching diamond mesh expanded metal lath to solid substrates (plywood or OSB) shall be not less than 1" long driven to a minimum penetration of 3/4". (ASTM C-1063, Section 7.10.2)



## GUILFORD COUNTY PLANNING AND DEVELOPMENT

## Stucco Guidelines

- c. Diamond mesh self-furring expanded metal lath should be attached with fasteners spaced at a distance not less than 16 inches on center horizontally and not more than 6 inches on center vertically. (NCSBC Volume VII, Section 703.6)
- d. Metal lath should be lapped no less than 1/2" at the sides and 1" at the ends. (ACI 524, Section 8.2)
7. Proportions and Mixing of Portland Cement Plaster affect the final quality and serviceability of the hardened plaster (stucco) and shall be in accordance with Table R503.3C of NCSBC and Table 2, ASTM C-926.
8. Application of Stucco (Portland cement plaster).
  - a. Stucco shall be applied in three coats. The first coat is called the scratch coat, followed by the brown coat. The third coat called the finish coat.
  - b. Scratch coat: The scratch coat should fully embed the metal lath. Surface should be rodded plane and then scored horizontally to a depth of 1/8". This provides a mechanical key between the first and second coats. The scratch coat should be applied at a minimum thickness of 3/8".

Cure the scratch coat by maintaining in a moist condition until application of the brown cost. Except for very hot weather, wetting the surface by fogging in the morning weather, wetting the surface and covering with clear polyethylene will be necessary. Delay between coats must be minimized. The maximum delay between the scratch and brown coat shall be 48 hours.
  - c. Brown coat: Moisten the scratch coat with water before applying the brown coat to reduce initial absorption of water. Allow sheen of water to disappear before applying next coat. Apply the brown coat the scratch coat should be applied at a thickness of 3/8".

Cure the brown cost by maintaining moist for at least 48 hours using the same procedures as described for the scratch coat.

An alternative method of application of the brown cost is the "double-back" method where the brown cost is applied over the scratch coat as soon as the scratch cost is sufficiently rigid to permit application of the brown coat. This method promotes better adhesion of the two coats but requires more careful timing of the application.
  - d. Finish coat application: Immediately before applying the finish coat must be applied continuously between natural breaks in the surface plane to avoid "cold joints," joining stains, shouldering and texture variations.
  - e. Apply finish coat to a thickness of at least 1/8". Smooth troweled surfaces require troweled the finish plaster lightly in a random pattern horizontally, diagonally, and vertically. Do not hard trowel. Do not apply water to finish coat.
  - f. Finished stucco (total thickness of 7/8") must be cured by maintaining the stucco continuously moist for at least 48 hours. It must be kept moist and not allowed to dry out during this period. Fogging may be necessary.
  - g. Another accepted method of stucco application is the "double back" method which consists of application of successive coats with little or no delay between coats. This method promotes better bond and more uniform curing throughout the base coat (scratch and brown coats); this method eliminates the delay between coats. However, it requires a more efficient and productive operation. Check local building codes.
  - h. Stucco shall not be applied during cold weather when the temperatures are below 40°F within 24 hours of stucco application. A heated enclosure may be used when the daytime temperature is 40°F and falling. The temperature in the enclosure must be maintained for at least 24 hours after application of the stucco.
9. Sealants and Backer Rod.
  - a. 1/2" wide sealant joint around all protrusions (windows, doors, louvers, utilities, etc.). The depth of joint should be one-half the width but not less than 1/4".
  - b. Horizontal control joints or expansion joints should be no less than 1/2" with same requirements.
  - c. Prime all areas to receive sealant as required by the sealant manufacturer.
  - d. Install appropriate size of closed-cell foam backer road after areas are primed.
  - e. Install sealant using two-point adhesion and after stucco has cured for at least 14 days or as specified by the sealant manufacturer.

*This bulletin is intended for public information purposes only. It summarizes and omits some provisions. It is not to be construed or used as an official Development Ordinance interpretation in any legal proceedings.*

*Copyright © 1998-2002 Guilford County. All Rights Reserved*