In modern times no other building products have enjoyed such widespread popularity as veneering materials than brick, block and stone masonry. Seeking the quality, richness and aesthetics of the "masonry look," architects and other building designers have utilized masonry veneer in endless varieties of ways and in ever-increasing quantities. There are no limitations upon the designer's imagination when it comes to masonry veneer.

This stimulus has come about thanks to the modern techniques for adhesion and anchoring of masonry veneer, which permit safe, economical and permanent adherence of masonry veneer over wood, plaster, concrete and other types of walls.

To ensure a secure and permanent bond of masonry veneer to a wall surface it is important that modern techniques of adhering or anchoring veneer be employed. To this end it is important that clear and detailed plans and specifications be prepared by the architect and designer. As detailed in the Uniform Building Code, adhered veneer is formed of brick, stone or other approved bonding material applied to masonry units as approved by the approved mechanical fasteners attached to approved backing. This article will focus primarily on anchored veneer techniques.

Many of the approved and popularly used mechanical fasteners are shown in the illustrations which accompany this article. The architect and the masonry contractor have a wide variety of choices in using these various mechanical fasteners and systems. The important point is that such fasteners and systems meet code requirements.

It is well to note the basic requirement for anchored veneer, as set forth in Section 3006 of the new 1976 Uniform Building Code, to wit: Section 3006.(a) Permitted Backing. Backing may be of any material permitted by this Code. Exterior veneer including its backing shall provide a weatherproof covering.

(b) Height and Support Limitations. Anchored veneer shall be supported on footings, foundations or other noncombustible supporting except as provided under Section 2510.

Where anchored veneer is applied more than 25 feet above the adjacent ground elevation, it shall be supported by noncombustible, corrosion-resistant, structural framing having horizontal supports spaced not over 12 feet vertically above the 25-foot height. Noncombustible, nonconceivable lintels and noncombustible supports shall be provided over all openings where the veneer unit is not self-spanning. The deflections of all...
may be applied by one of the methods specified in U.B.C. Standard 30-1.

Subsection (b), "Height and Support Limitations," was a significant (and only) change made to Section 3006 in the 1976 Uniform Building Code. The reference to Section 2516, also a significant change in the 1976 Uniform Building Code, is quoted as follows:

Sec. 2516. (a) Dead load. Wood members shall not be used to permanently support the dead load of any masonry or concrete.

Exceptions: (1) ..., (2) ..., (3) ...(6)

Veneer of brick, tile or stone applied as specified in Section 3001(b) may be supported for covered masonry walls or when the maximum height of veneer does not exceed 20 feet above the finished grade. ... when applied to wood framing which is designed to support the structural load and is designed in such a manner as to conform with the requirements of Section 2516(b) of the U.B.C. for the type of the supporting members.

U.B.C. Standard No. 30-1, "Veneer Application," spells out requirements for anchored veneer. It is quoted in part as follows:

Sec. 30.104. (a) Masonry and Stone Units. Masonry and stone veneer not exceeding five inches in thickness may be anchored directly to structural member and horizontal supports specified by this subsection shall not exceed 1/500 of the span under full load of the member.

(d) Application. In lieu of the design required by Section 30.04 anchored veneer shall be anchored to structural masonry, concrete, or studs in one of the following manners:

1. Anchor tie shall be corrugated and, if made of sheet metal, shall have a minimum size of No. 22 gauge by one inch or, if of wire, shall be a minimum of No. 10 gauge. Anchor ties shall be spaced so as to support not more than two square feet of wall area but not more than 24 inches on centers horizontally. In seismic Zone No. 3 anchor tie shall be provided with horizontal joint reinforcement to about 1/4 of the equivalent. The joint reinforcement shall be continuous with butt splices between ties permitted.

When applied over stud construction, the studs shall be spaced a minimum of 10 inches on centers and approved paper shall be applied over the sheathing or wires between studs, except as otherwise provided in Section 1707. Uniform Building Code, Volume I, and mortar shall be stabbed into the one-inch space between facer and paper.

An alternate, an air space of at least one inch may be maintained between the backing and the veneer, in which case temporary spot bedding may be used away from the ties to align the veneer. Spot bedding at the ties shall be of cement mortar entirely surrounding the ties.

An excellent book on Masonry Veneer, published by Masonry Institute of America, is available to provide guidelines for plans and specifications for all types of masonry veneering. Copies may be obtained by sending $3.50 to Masonry Institute of America, 2550 Beverly Blvd., Los Angeles, CA 90057.

DOVETAIL type brick anchor, made of 16-gauge by 1/2" galvanized steel utilizes heavy hook to enclose 8-gauge galvanized wire.

DOVETAIL type mortar anchor is made of 3/8" by 1" galvanized steel and has two 1/4" dowel holes.

CORRUGATED brick veneer tile has one nail hole at end.

ANGLER TYPE veneer tile is made of 14 gauge galvanized steel, 1" wide. It has two holes for nails or screws. This tie is specified for many brick veneer-on-frame jobs.