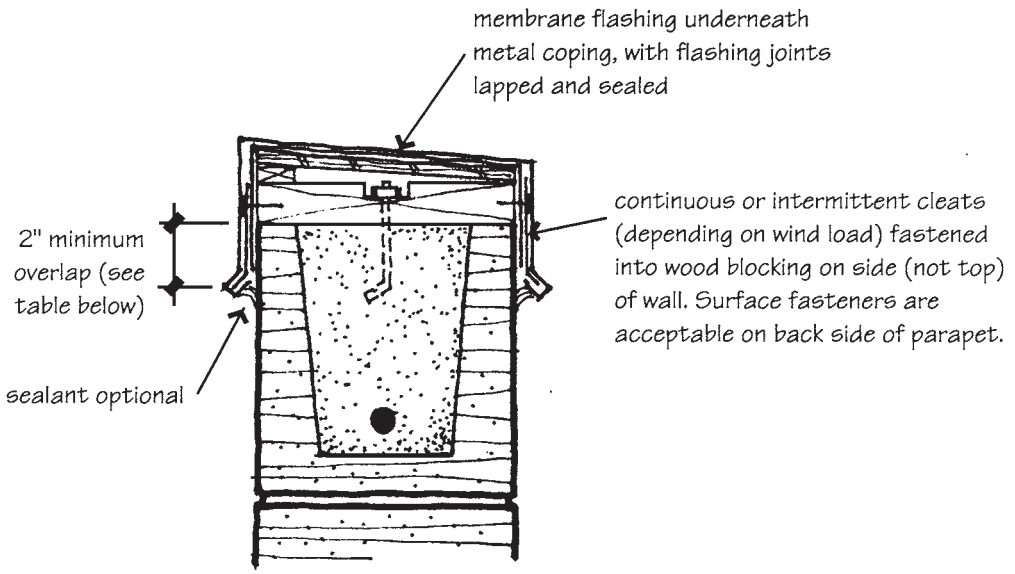
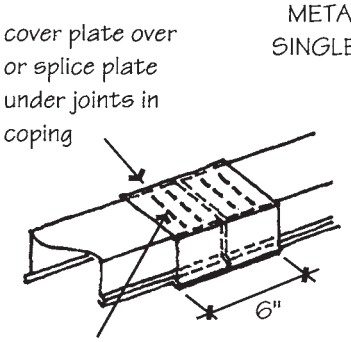
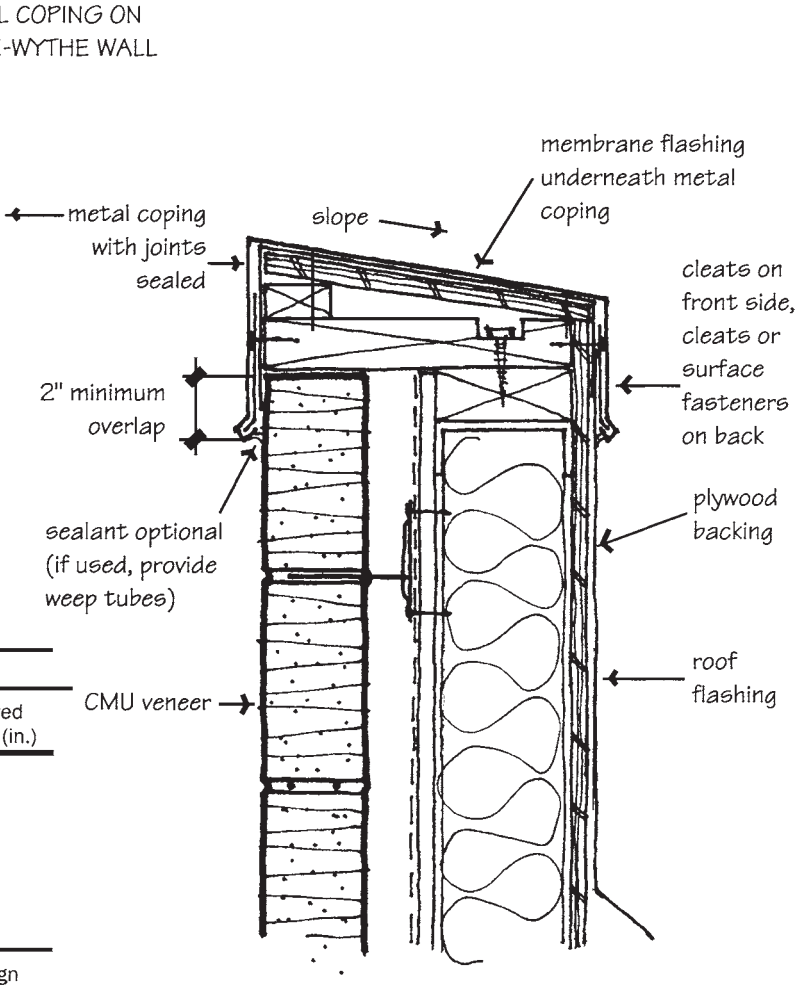


METAL COPING ON SINGLE-WYTHE WALL



COPING JOINT DETAIL



METAL COPING ON VENEER WALL

Required Height of Coping Overlap		
Wind Speed (mph)	Wind Pressure (psf)	Required Overlap (in.)
60	10	2
90	20	4
110	30	6
125	40	8
140	50	10

(*From AAMA* Aluminum Curtain Wall Design Guide Manual.)

Figure 10-54 Metal coping details for single-wythe and veneer walls.

walls with open cores or cavities. If metal flashing is used, the material must be compatible with the metal of the coping itself. All penetrations through this flashing must be sealed with mastic or an elastomeric sealant.

Precast or cast stone copings are shown in *Fig. 10-55*. Because the joints in the coping are vulnerable to moisture penetration, the head joints should be raked out and filled with an elastomeric sealant, and a flashing membrane should *always* be installed below the coping.

In addition to the differential movement between a coping and the wall itself, differential movement between the back and the front of multi-wythe parapet walls must also be considered. Popular details often include a brick veneer, a stone coping, and a utilitarian concrete block backup, but this combination can spell disaster. The brick veneer is increasing in both height and length with permanent moisture expansion at the same time that the concrete masonry is experiencing permanent shrinkage in both directions. Lateral stresses will be highest at the corners, where a brick facing can literally slide off the edge of the building (*see Fig. 10-56*). Unless the mortar is very soft and flexible, a stone coping can be ripped from its mortar bed and twisted out of place, opening joints along both the top and the face of the coping (*see Fig. 10-57*).

To minimize differential movement, the backing and facing wythes of parapets can be constructed of the same material. Tall parapets, or parapets which will be subjected to lateral loads from swing staging or window washing equipment, must be structurally reinforced and anchored to the roof slab (*see Fig. 10-58*). Dowels can be embedded in concrete or masonry supporting structures or welded to structural steel. A fully reinforced parapet is more restrained against thermal and moisture movement, but still requires accommodation of both expansion and contraction. In unreinforced parapets, expansion and contraction can be limited by reinforced bond beams at the top of the wall. This grouted barrier will also protect against direct moisture penetration into hollow masonry cores. For best performance in both brick and concrete masonry parapets, calculations of potential movement should always be based on expected service conditions, and control and expansion joints located accordingly (refer to Chapter 9). The backing and facing of multi-wythe brick parapets should be connected with rigid metal ties, and the wythes of concrete masonry parapets with continuous joint reinforcement. Expansion joints should be located in the last joint in each run of a masonry coping or in the joints adjacent to each corner piece, as well as at calculated intervals along the length of the wall. All mortar joints in masonry copings should be raked out and caulked with elastomeric sealant, because even hairline cracks or separations at the top of the wall act as funnels directing water to the interior.

When masonry copings are specified instead of metal-cap flashing systems, select materials that have expansion and contraction characteristics similar to those of the wall materials. Precast concrete or cast stone copings work well over concrete masonry parapets, and natural or cast stone copings over stone walls. Avoid using brick rowlock copings, because the number of joints on the horizontal surface increases the probability of leaks and the longitudinal joint is almost guaranteed to crack. It is not practical to put a flashing under a brick coping, because the units are not heavy enough to remain stable. Masonry copings should always overhang both sides of the wall and have integral drips. Where a parapet intersects a higher wall, a saddle flashing is used to prevent moisture penetration. This is particularly critical for veneer construction, where the backing wall may include components that are easily damaged by moisture or that support mold growth (*see Fig. 10-59*).