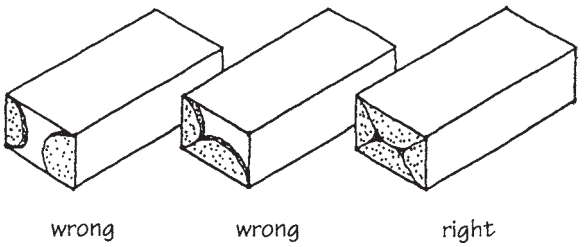
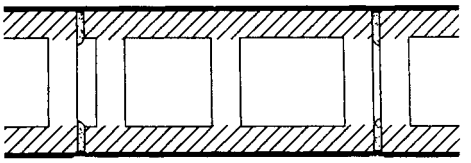
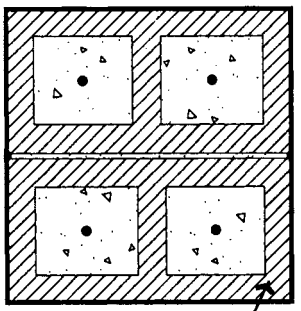


Figure 15-15 Fill head joints for better resistance to rain penetration. (*From BIA* Technical Note 17C.)



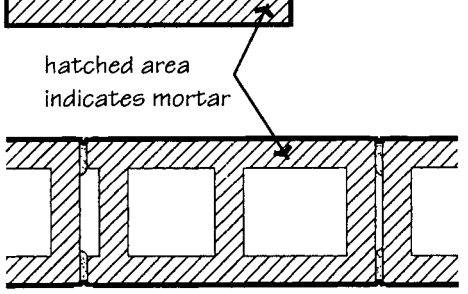
STANDARD FACE SHELL BEDDING

bed joints at face shells must be fully mortared, depth of head joints must be equal to thickness of face shell (in fully grouted walls, grout can flow laterally across webs for interlocking)



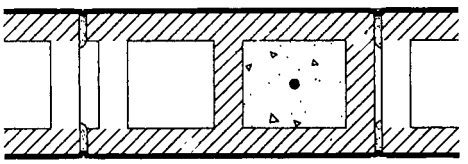
AT PIERS, COLUMNS AND PILASTERS

bed joints at face shells and webs must be fully mortared



FULL MORTAR BEDDING

bed joints at face shells and webs must be fully mortared only for the first course on foundations and when specified



AT GROUTED CORES

bed joints at face shells and webs around grouted cores must be fully mortared

Figure 15-16 Mortar bedding of hollow masonry units. (*From Patterson,* Illustrated 2000 Building Code Handbook, *McGraw-Hill, 2001.*)

In cavity wall and veneer wall construction, it is extremely important that the cavity between the outer wythe and the backing wall be kept clean to assure proper moisture drainage. If mortar clogs the cavity, it can form bridges for moisture passage, or it may block weep holes. Some masons use a removable wooden strip to temporarily block the cavity as the wall is laid up and prevent mortar droppings. However, beveling the mortar bed as shown in *Figure 15-14* allows little mortar to extrude into the cavity. Any mortar fins that do protrude into the cavity should be cut off or flattened to prevent interference with the placement of reinforcing steel, grout, or insulation. A cavity with a minimum clear dimension of 2 in. is not as easily bridged by mortar extrusions and can be kept clean much more easily than a narrow cavity. Codes generally require only a 1-in. minimum cavity width, and corrugated anchors cannot be used when the cavity exceeds 1 in. A 2-in.-wide cavity, however, is preferable for better drainage.

Use of the various types of insulation covered in Chapter 8 will affect the manner in which the masonry walls are laid up. In veneer construction over wood frame, the board or batt insulation and the corrugated metal ties are placed against the frame before the masonry work is begun. If rigid board insulation is used in insulated masonry cavity walls, the backing wall must be laid up higher than the facing wall so that the boards may be attached to it before the facing wythe covers it. If the masons are working overhand from inside the building (as they often do on multistory construction), this makes the insulating process more awkward, and therefore less economical. In these cases, the masons would work better from scaffolding on the outside of the building, but the cost of the installation would increase.

Loose fill insulation does not require that the two wythes of masonry be laid up separately. Both the inner and outer wythes can be laid up simultaneously, and the insulation poured or pumped into place at designated vertical intervals.

To add visual interest to masonry walls, units may be laid in different positions as shown in *Fig. 15-17,* and arranged in a variety of patterns (*see Figs. 15-18 and 15-19*). The patterns were originally conceived in connection with masonry wall bonding techniques that are not widely used today. In older work constructed without metal ties or reinforcement, rowlock and header courses were used to structurally bond the wythes of a wall together (refer to Chapter 12 for structural code requirements). Most contemporary buildings use the 1/3 or 1/2 running bond, or stack bond with very little decorative pattern work. In cavity wall construction, half rowlocks and half headers may be used for aesthetic effect on the exterior without the unit actually penetrating the full thickness of the wall (*see Fig. 15-20*).

Brick soldier and sailor courses should be installed carefully to prevent mortar from slumping in the tall head joints, leaving voids which might be easily penetrated by moisture. Units used for sailor or shiner courses must be solid and uncored. Vertical coursing between backing and facing wythes must also be coordinated to accommodate ties and anchors.

Masonry arches may be built of special brick or stone shapes to obtain mortar joints of constant thickness, or of standard brick units with joint thickness varied to obtain the required curvature. The method selected should be determined by the arch dimensions and by the desired appearance. It is especially important in a structural member such as an arch that all mortar joints be completely filled. Brick arches are usually built so that units at the crown will be laid in soldier bond or rowlock header bond. Under many circumstances, it is difficult to lay units in soldier bond and still obtain full joints. This is especially true where the curvature of the arch is of short