Building Code Requirements and Specification for Masonry Structures

Containing

Building Code Requirements for Masonry Structures
(TMS 402-11/ACI 530-11/ASCE 5-11)

Specification for Masonry Structures
(TMS 602-11/ACI 530.1-11/ASCE 6-11)

and Companion Commentaries

Developed by the Masonry Standards Joint Committee (MSJC) of
CODE

1.15 — Pilasters

Walls interfacing with pilasters shall not be considered as flanges, unless the construction requirements of Sections 1.9.4.2.1 and 1.9.4.2.5 are met. When these construction requirements are met, the pilaster’s flanges shall be designed in accordance with Sections 1.9.4.2.2 through 1.9.4.2.4.

1.16 — Details of reinforcement and metal accessories

1.16.1 Embedment
Reinforcing bars shall be embedded in grout.

1.16.2 Size of reinforcement
1.16.2.1 The maximum size of reinforcement used in masonry shall be No. 11 (M #36).

1.16.2.2 The diameter of reinforcement shall not exceed one-half the least clear dimension of the cell, bond beam, or collar joint in which it is placed.

1.16.2.3 Longitudinal and cross wires of joint reinforcement shall have a minimum wire size of W1.1 (MW7) and a maximum wire size of one-half the joint thickness.

COMMENTARY

1.15 — Pilasters

Pilasters are masonry members that can serve several purposes. They may project from one or both sides of the wall, as shown in Figure CC-1.15-1. Pilasters contribute to the lateral load resistance of masonry walls and may resist vertical loads.

1.16 — Details of reinforcement and metal accessories

When the provisions of this section were originally developed in the late 1980s, the Committee used the then current ACI 318 Code as a guide. Some of the requirements were simplified and others dropped, depending on their suitability for application to masonry.

1.16.1 Embedment

1.16.2 Size of reinforcement
1.16.2.1 Limits on size of reinforcement are based on accepted practice and successful performance in construction. The No. 11 (M #36) limit is arbitrary, but Reference 1.40 shows that distributed small bars provide better performance than fewer large bars. Properties of reinforcement are given in Table CC-1.16.2.

1.16.2.2 Adequate flow of grout necessary for good bond is achieved with this limitation. It also limits the size of reinforcement when combined with Section 1.20.1.

1.16.2.3 The function of joint reinforcement is to control the size and spacing of cracks caused by volume changes in masonry as well as to resist tension. Joint reinforcement is commonly used in concrete masonry to minimize shrinkage cracking. The restriction on wire size ensures adequate performance. The maximum wire size of one-half the joint thickness allows free flow of mortar around joint reinforcement. Thus, a 1/8-in. (4.8-mm) diameter wire can be placed in a 1/8-in. (9.5-mm) joint.