

Send in your questions to Dan Zechmeister, MIM
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They will be answered promptly for you and printed here for the benefit of others pondering the same.

Q: I am doing a take-off for a masonry wall project in Michigan. Project specifications call for heavy-duty horizontal joint reinforcement to be placed in the mortar bed joints of a concrete masonry wall. Is this necessary?

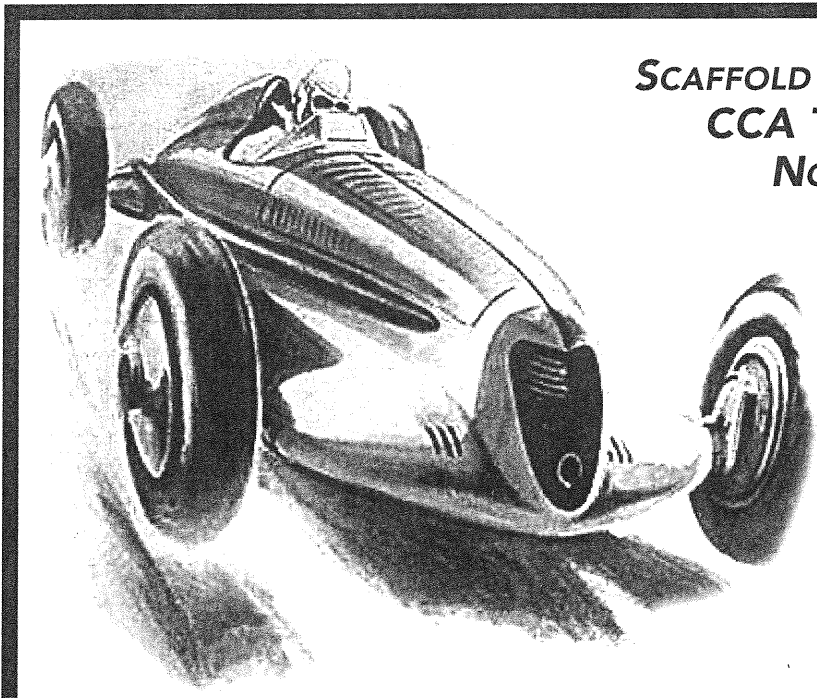
A: Heavy-duty wire reinforcement is 3/16" diameter wire. The Masonry Standard Joint Committee (MSJC) code permits a maximum wire size of one-half the mortar joint thickness, 1/2 of 3/8" equals 3/16". In a *perfect* wall this would allow free flow of mortar around the joint reinforcement. The MSJC code, also permits a mortar bed joint tolerance of +/- 1/8" from the specified dimension. For a specified mortar bed joint thickness of 3/8", this could result in a

minimum constructed mortar bed joint thickness of 1/4". In a *realistic* wall this would not allow free flow of mortar around the joint reinforcement. One reason to use heavy-duty wire in the mortar bed joints is for structural purposes. When the wall is designed to resist the lateral loads in the horizontal direction, heavy-duty wire can be used as steel reinforcement. Walls spanning in the horizontal direction require vertical support, i.e., anchored to cross walls, pilasters, buttresses or structural frame members (steel or concrete columns).

However, most walls are designed to span in the vertical direction. Walls spanning in the vertical direction require horizontal support, i.e., anchored to floors, roofs acting as

diaphragms or structural frame members (steel or concrete beams). A majority of the vertical spanning concrete masonry walls today are reinforced with deformed steel re-rods grouted vertically in the block cores.

These walls will also, typically, contain 9-gauge horizontal joint reinforcement in the mortar bed joints to control shrinkage cracking. Additionally, the 9-gauge joint reinforcement allows for ease of constructability and fit. The diameter of the 9-gauge wire is .148". Incidentally, the control joint spacings recommended by the National Concrete Masonry Association, *NCMA TEK 10-2A: Control Joints for Concrete Masonry Walls* begin with 9-gauge horizontal reinforcement for crack control. ®



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