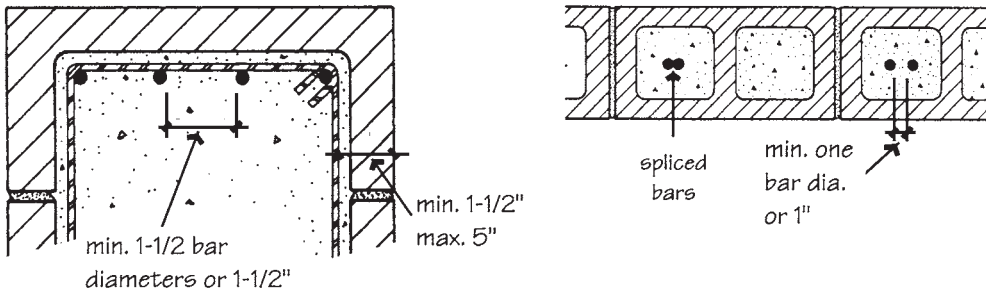
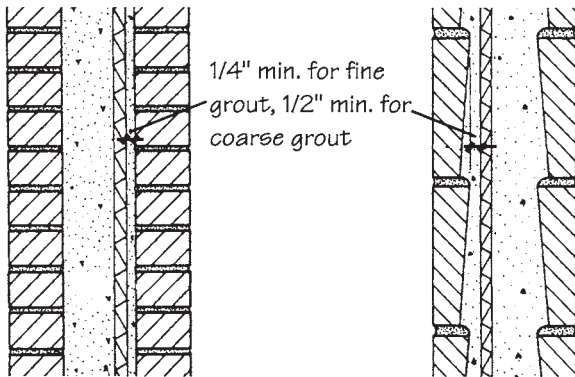


CLEARANCE BETWEEN HORIZONTAL REINFORCING BARS



CLEARANCE BETWEEN VERTICAL BARS IN MASONRY COLUMNS

CLEARANCE BETWEEN VERTICAL REINFORCEMENT IN HOLLOW MASONRY UNIT WALLS



CLEARANCE BETWEEN REINFORCING STEEL AND MASONRY UNITS

Figure 15-45 Code-required minimum clearances for masonry reinforcement. (Drawings from Amrhein, Reinforced Masonry Engineering Handbook, 5th ed.)

Reinforcement Cover for Masonry Structures	
Reinforced Masonry	Minimum Cover (in.) [§]
Masonry exposed to earth or weather	
No. 6 and larger	2
No. 5 and smaller	1-1/2
Masonry not exposed to earth or weather	1-1/2

[§] Minimum cover includes thickness of masonry unit.

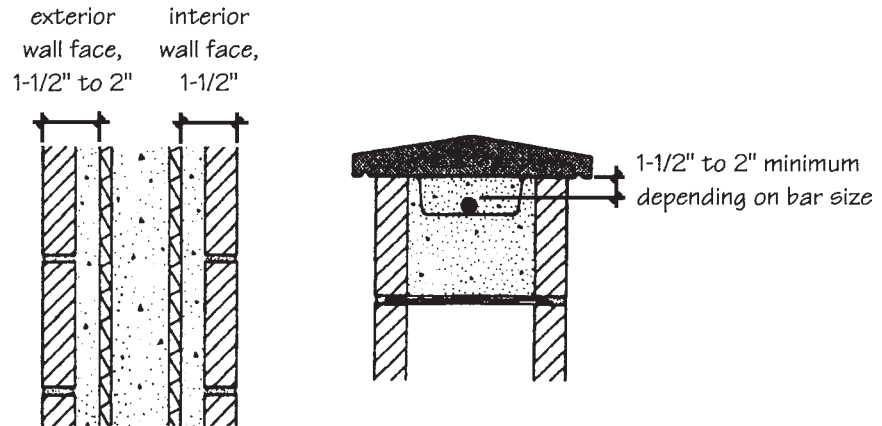


Figure 15-46 Code requirements for minimum masonry and grout cover for reinforcement. (Drawings from *Amrhein, Reinforced Masonry Engineering Handbook, 5th ed.*)

Element	Distance From Centerline of Steel to the Opposite Face of Masonry		
	≤ 8 in.	> 8 in. but ≤ 24 in.	> 24 in.
Walls and Flexural Elements	± 1/2 in.	± 1 in.	± 1-1/4 in.
Walls	For vertical bars, within 2 in. of location along length of wall		

Figure 15-47 MSJC Code placement tolerances for masonry reinforcement.

Cleanouts must be provided at the base of the wall by leaving out every other unit in the bottom course of the section being poured. In single-wythe hollow-unit walls, cleanout openings of at least 3 × 4 in. are located at the bottom of every core containing dowels or vertical reinforcement, and in at least every second core that will be grouted, but has no steel. In solidly grouted, unreinforced single-wythe walls, every other unit in the bottom course should be left out. Codes generally specify exact cleanout requirements, and should be consulted prior to construction.

A high-pressure air blower is used to remove any debris that may have fallen into the core or cavity. The cleanouts are filled in after inspection of the cavity, but before the grouting begins (see *Fig. 15-55*). The mortar joints