CODE

Table 14.3.1.1—Minimum thickness of bearing walls

Wall type	Minimum thickness	
General	Greater of:	140 mm
		1/24 the lesser of unsupported length and unsupported height
Exterior basement	190 mm	
Foundation	190 mm	

14.3.2 *Footings*

14.3.2.1 Footing thickness shall be at least 200 mm.

14.3.2.2 Base area of footing shall be determined from unfactored forces and moments transmitted by footing to soil and permissible soil pressure selected through principles of soil mechanics.

14.3.3 *Pedestals*

14.3.3.1 Ratio of unsupported height to average least lateral dimension shall not exceed 3.

14.3.4 *Contraction and isolation joints*

14.3.4.1 Contraction or isolation joints shall be provided to divide structural plain concrete members into flexurally discontinuous elements. The size of each element shall be selected to limit stress caused by restraint to movements from creep, shrinkage, and temperature effects.

14.3.4.2 The number and location of contraction or isolation joints shall be determined considering (a) through (f):

COMMENTARY

earthquake, or other unforeseen loading conditions require the walls to possess some ductility and ability to maintain integrity when cracked. For such conditions, ACI Committee 318 strongly encourages the use of walls designed in accordance with Chapter 11.

R14.3.2 *Footings*

R14.3.2.1 Thickness of plain concrete footings of usual proportions will typically be controlled by flexural strength (extreme fiber stress in tension not greater than $(\mathbf{0.42\phi\lambda}\sqrt{f'_c})$ rather than shear strength (refer to R14.5.5.1). For footings cast against soil, overall thickness $\boldsymbol{h}$ used for strength calculations is specified in 14.5.1.7.

R14.3.3 *Pedestals*

R14.3.3.1 The height-thickness limitation for plain concrete pedestals does not apply for portions of pedestals embedded in soil capable of providing lateral restraint.

R14.3.4 *Contraction and isolation joints*

R14.3.4.1 Joints in plain concrete construction are an important design consideration. In reinforced concrete, reinforcement is provided to resist the stresses due to restraint of creep, shrinkage, and temperature effects. In plain concrete, joints are the only means of controlling, and thereby relieving, the buildup of such tensile stresses. A plain concrete member should therefore be small enough, or divided into smaller elements by joints, to control the buildup of internal stresses. The joint may be a contraction joint or isolation joint. A minimum 25 percent reduction of member thickness is typically sufficient for contraction joints to be effective. The jointing should be such that no axial tension or flexural tension can be developed across a joint after cracking, if applicable—a condition referred to as flexural discontinuity. Where random cracking due to creep, shrinkage, and temperature effects will not affect structural integrity and is otherwise acceptable (such as transverse cracks in a continuous wall footing), transverse contraction or isolation joints should not be necessary.