

**12.11.2.2.7 Walls with Pilasters** Where pilasters are present in the wall, the anchorage force at the pilasters shall be calculated considering the additional load transferred from the wall panels to the pilasters. However, the minimum anchorage force at a floor or roof shall not be reduced.

## 12.12 DRIFT AND DEFORMATION

### 12.12.1 Story Drift Limit

The design story drift ( $\Delta$ ) as determined in Sections 12.8.6, 12.9.2, or 16.1, shall not exceed the allowable story drift ( $\Delta_a$ ) as obtained from Table 12.12-1 for any story.

#### 12.12.1.1 Moment Frames in Structures Assigned to Seismic Design Categories D through F

For seismic force-resisting systems comprised solely of moment frames in structures assigned to Seismic Design Categories D, E, or F, the design story drift ( $\Delta$ ) shall not exceed  $\Delta_a/\rho$  for any story.  $\rho$  shall be determined in accordance with Section 12.3.4.2.

### 12.12.2 Diaphragm Deflection

The deflection in the plane of the diaphragm, as determined by engineering analysis, shall not exceed the permissible deflection of the attached elements. Permissible deflection shall be that deflection that will permit the attached element to maintain its structural integrity under the individual loading and continue to support the prescribed loads.

### 12.12.3 Structural Separation

All portions of the structure shall be designed and constructed to act as an integral unit in resisting seismic forces unless separated structurally by a distance sufficient to avoid damaging contact as set forth in this section.

Separations shall allow for the maximum inelastic response displacement ( $\delta_M$ ).  $\delta_M$  shall be determined at critical locations with consideration for translational and torsional displacements of the structure including torsional amplifications, where applicable, using the following equation:

$$\delta_M = \frac{C_d \delta_{\max}}{I_e} \quad (12.12-1)$$

Where  $\delta_{\max}$  = maximum elastic displacement at the critical location.

Adjacent structures on the same property shall be separated by at least  $\delta_{MT}$ , determined as follows:

$$\delta_{MT} = \sqrt{(\delta_{M1})^2 + (\delta_{M2})^2} \quad (12.12-2)$$

where  $\delta_{M1}$  and  $\delta_{M2}$  are the maximum inelastic response displacements of the adjacent structures at their adjacent edges.

Where a structure adjoins a property line not common to a public way, the structure shall be set back from the property line by at least the displacement  $\delta_M$  of that structure.

**EXCEPTION:** Smaller separations or property line setbacks are permitted where justified by rational analysis based on inelastic response to design ground motions.

**Table 12.12-1 Allowable Story Drift,  $\Delta_a^{a,b}$**

Structure	Risk Category		
	I or II	III	IV
Structures, other than masonry shear wall structures, 4 stories or less above the base as defined in Section 11.2, with interior walls, partitions, ceilings, and exterior wall systems that have been designed to accommodate the story drifts.	$0.025h_{sx}^c$	$0.020h_{sx}$	$0.015h_{sx}$
Masonry cantilever shear wall structures <sup>d</sup>	$0.010h_{sx}$	$0.010h_{sx}$	$0.010h_{sx}$
Other masonry shear wall structures	$0.007h_{sx}$	$0.007h_{sx}$	$0.007h_{sx}$
All other structures	$0.020h_{sx}$	$0.015h_{sx}$	$0.010h_{sx}$

<sup>a</sup> $h_{sx}$  is the story height below Level  $x$ .

<sup>b</sup>For seismic force-resisting systems comprised solely of moment frames in Seismic Design Categories D, E, and F, the allowable story drift shall comply with the requirements of Section 12.12.1.1.

<sup>c</sup>There shall be no drift limit for single-story structures with interior walls, partitions, ceilings, and exterior wall systems that have been designed to accommodate the story drifts. The structure separation requirement of Section 12.12.3 is not waived.

<sup>d</sup>Structures in which the basic structural system consists of masonry shear walls designed as vertical elements cantilevered from their base or foundation support which are so constructed that moment transfer between shear walls (coupling) is negligible.