3.7.3 Individual foundations of a building shall be interconnected in two directions generally at right angles by members designed for a horizontal force equal to 10 percent of the vertical load on the foundations under seismic conditions averaged between the columns concerned. Alternatively, foundations may be restrained by other means against differential lateral movement during an earthquake.

3.8 DEFORMATIONS DUE TO EARTHQUAKE LOADS

3.8.1 Computed deformations

3.8.1.1 Computed deformations shall be those resulting from the application of the horizontal actions specified in section 3.4 or 3.5 and multiplied by the factor K/SM appropriate to the structural type and material, where $K = 2$ for the method of section 3.4 and $K = 2.2$ for the method of section 3.5.

3.8.1.2 Computed deformations shall be calculated neglecting foundation rotations.

C3.8.1.1 Guidance on the calculations of deformations is given in the relevant material's codes.

C3.8.1.2 Computed deformations vary proportionally with the value of C_d. Compared to the value of C_d derived from S = 1, M = 1, considerable reductions result for structures with the same importance and located within the same seismic zone, for example, M = 0.8 (structural steel) S = 0.8 (adequate redundancy) and up to 10 percent reduction in some cases where a dynamic analysis has been made. The justification for reductions in strength does not apply to deformations. For those systems for which the principle of equal displacements for the inelastic system and elastic system with the same initial stiffness applies, neither reductions nor increases in C_d values will affect the total displacement in an earthquake. The modification factor is aimed at achieving this, that is, separation requirements proportional to CR.

Designers should be aware that for structures dissipating energy in a ductile flexural mode the separation requirement of this standard gives average damage protection to a class III building with 5 percent damping in seismic zone A at levels of motions up to one-third 1940 El Centro N–S only. Furthermore, buildings where energy dissipation tends to be localized in some storeys are prone to large deformations. Thus wherever practical a greater degree of separation should be provided. Measured responses in New Zealand and overseas confirm the large deformations suffered by modern framed structures owing to their low damping characteristics.

3.8.2 Building separation

3.8.2.1 Each building separated from its neighbour shall have a minimum clear space from the property boundary, other than adjoining a public space, either 1.5 times the computed deflections as given in clause 3.8.1 or 0.002 times its height, whichever is the larger, and in any case, not less than 12 mm. Parts of buildings, or buildings on the