

### 10.2.3 Shearwalls Using Gypsum Wallboard

#### 10.2.3.1

Shearwalls using gypsum wallboard shall be constructed with panels not less than 1200 mm by 2400 mm, except near boundaries and changes in framing where up to two short or narrow panels with panel dimensions not less than 300 mm may be used.

#### 10.2.3.2

Nails and screws used to apply gypsum wallboard shall be placed not less than 9 mm from the panel edge.

#### 10.2.3.3

Shearwalls using gypsum wallboard shall be used in combination with shearwalls using structural wood-based panels. The factored percentage of shear resistance attributed to shearwalls using gypsum wallboard shall be equal to or less than the percentage of storey shear forces in Table 10.2.3.

**Note:** There should be a balanced spatial distribution of the gypsum wallboard and wood-based panels resisting shear in any storey.

#### 10.2.3.4

Design values for gypsum wallboard are restricted to wood frame construction where the height of the shearwall, ( $H_s$ ) does not exceed 3.6 m for a blocked shearwall or 2.4 m for an unblocked shearwall.

#### 10.2.3.5

The seismic force modification factor,  $R$ , shall be equal to 2 where shearwalls using gypsum wallboard are designed to resist lateral loads.

Table 10.2.3

Maximum Percentage of  
Storey Shear Forces  
Resisted by Gypsum  
Wallboard

Storey	3-storey building	2-storey building	1-storey building
3 <sup>rd</sup>	80	-	-
2 <sup>nd</sup>	60	80	-
1 <sup>st</sup>	40	60	80

### 10.2.4 Shearwalls with Segments

#### 10.2.4.1

The factored shear resistance of a shearwall shall be calculated as the sum of the factored shear resistance of the wall segments determined according to Clause 10.2.10. The factored shear resistance of the shearwall shall be determined for lateral loads acting in opposite directions.

#### 10.2.4.2

The aspect ratio of a shearwall segment,  $H_s: L_s$  shall not be greater than 3.5:1.  
where:

$H_s$  = the height of the shearwall segment from the underside of the bottom shearwall plate to the topside of the top shearwall plate within a storey

$L_s$  = the length of the shearwall segment measured parallel to the applied load