

#### 4.3.5 Effective lengths of beams

When considering lateral torsional buckling, the effective length,  $L_E$ , of a beam should be taken as follows.

4.3.7.1 General. Equal flanged rolled sections may be checked using the conservative approach in 4.3.7.7. For other members, or a portion of a member, between

**Table 9. Effective length  $L_E$  for beams**

| Conditions of restraint at supports  |   | Loading conditions |               |
|--|---|--------------------|---------------|
|  |   | Normal             | Destabilizing |
| Compression flange laterally restrained<br>Beam fully restrained against torsion | Both flanges fully restrained against rotation on plan                                      | 0.7L               | 0.85L         |
|  | Both flanges partially restrained against rotation on plan                                  | 0.85L              | 1.0L          |
|  | Both flanges free to rotate on plan   | 1.0L               | 1.2L          |
| Compression flange laterally unrestrained<br>Both flanges free to rotate on plan | Restraint against torsion provided only by positive connection of bottom flange to supports | 1.0L + 2D          | 1.2L + 2D     |
|  | Restraint against torsion provided only by dead bearing of bottom flange on supports        | 1.2L + 2D          | 1.4L + 2D     |

$D$  is the depth of the beam.