

Figure 4.8 Effective height of walls

4.9.3 Effective height

The effective height h_{ef} depends on the degree of horizontal lateral support provided and may be defined as follows for walls and columns.

For walls it should be taken as

- (a) 0.75 times the clear distance between lateral supports which provide enhanced resistance, as depicted in Figure 4.8a; or
- (b) The clear distance between lateral supports which only provide simple resistance, as depicted in Figure 4.8b.

For columns it should be taken as

- (a) The distance between lateral supports in respect of the direction in which lateral support is provided, shown as $h_{ef} = h$ in Figure 4.9a and b; or
- (b) Twice the height of the column in respect of a direction in which lateral support is not provided, shown as $h_{ef} = 2h$ in Figure 4.9b.

It should be noted that BS 5628 suggests that lateral support to columns should preferably be provided in both horizontal directions.

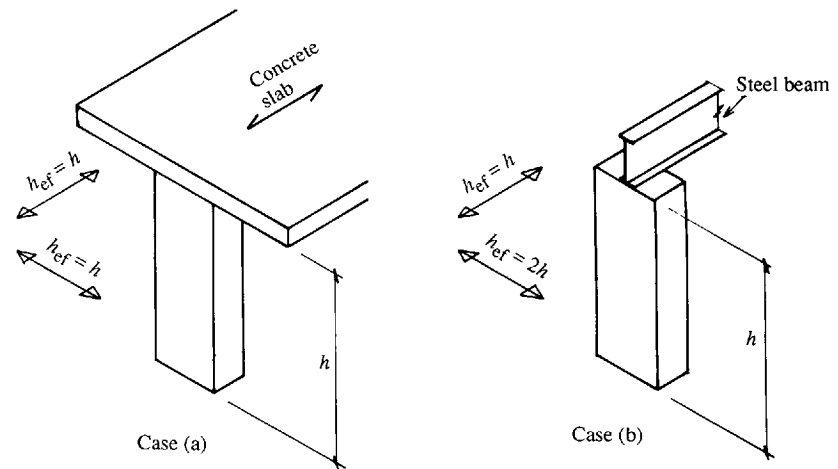


Figure 4.9 Effective height of columns

4.9.4 Effective length

The effective length l_{ef} is a consideration that only applies to walls, and depends on the degree of vertical lateral support provided. It may be taken as

- (a) 0.75 times the clear distance between lateral supports which provide enhanced resistance, as illustrated in Figure 4.10a

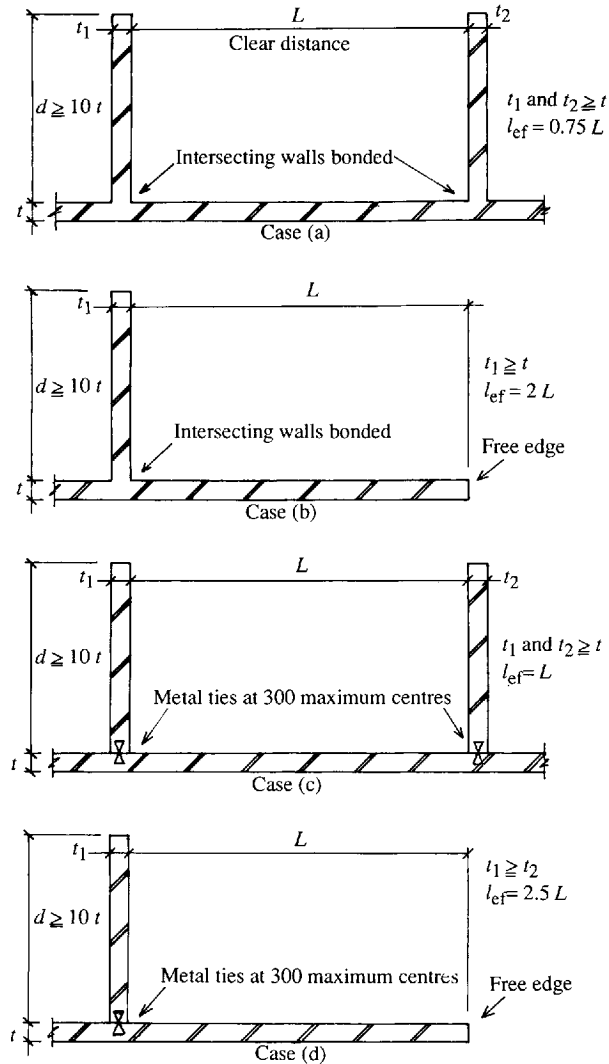


Figure 4.10 Effective length of walls

- (b) Twice the distance between a lateral support which provides enhanced resistance and a free edge, as illustrated in Figure 4.10b
- (c) The clear distance between lateral supports which only provided simple resistance, as illustrated in Figure 4.10c
- (d) 2.5 times the distance between a lateral support which provides simple resistance and a free edge, as illustrated in Figure 4.10d.

It should be appreciated that the slenderness ratio of a wall without any vertical lateral supports must be based upon its effective height.