

5.4. RULES FOR MEMBERS

5.4.1. General

5.4.1.1 – Composite members, which are primary seismic members, shall conform to EN 1994-1-1:2004 and to additional rules defined in this Section.

5.4.1.2 – For tension members or parts of members in tension, the ductility requirement of EN 1993-1-1:2004, 6.2.3(3) should be met.

5.4.1.3 – Sufficient local ductility of members which dissipate energy under compression and/or bending should be ensured by restricting the width-to-thickness ratios of their walls. Steel dissipative zones and the not encased steel parts of composite members should meet the requirements of **4.2.1.1** and **Table 4.2**. Dissipative zones of encased composite members should meet the requirements of **Table 5.3**. The limits given for flange outstands of partially or fully encased members may be relaxed if special details are provided as described in **5.4.4.9** and **5.4.5.4** to **5.4.5.6**.

Table 5.3. Limits of wall slenderness

Section type	Wall slenderness
Partially encased H or I section Fully encased H or I section Flange outstand limits c / t_f :	14ε
Filled rectangular section h / t limits:	38ε
Filled circular section d / t limits:	$85 \varepsilon^2$

where $\varepsilon = (f_y / 235)^{0.5}$

5.4.1.4 – More specific detailing rules for dissipative composite members are given in **5.4.2**, **5.4.4**, **5.4.5** and **5.4.6**.

5.4.1.5 – In the design of all types of composite columns, the resistance of the steel section alone or the combined resistances of the steel section and the concrete encasement or infill may be taken into account.

5.4.1.6 – The design of columns in which the member resistance is taken to be provided only by the steel section may be carried out in accordance with the provisions of **Chapter 4**. In the case of dissipative columns, the capacity design rules in **5.3.1.2** and **5.3.2.3** should be satisfied.

5.4.1.7 – For fully encased columns with composite behaviour, the minimum crosssectional dimensions b , h or d should be not less than 250 mm.