

5.5.3.6 – In columns where plastic hinges form as stated in **5.5.1.1**, the verification should assume that $M_{pl,Rd}$ is realised in these plastic hinges.

5.5.3.7 – The following expression should apply for all composite columns:

$$\frac{N_{Ed}}{N_{pl,Rd}} < 0.30 \quad (5.11)$$

5.5.3.8 – The resistance verifications of the columns should be made in accordance with EN 1994-1-1:2004, 4.8.

5.5.3.9 – The column shear force V_{Ed} (from the analysis) should be limited in accordance with third expression in **Eq.(4.4)**.

5.5.4. Beam to column connections

The provisions given in **4.3.4** apply.

5.5.5. Condition for disregarding the composite character of beams with slab

5.5.5.1 – The plastic resistance of a beam section composite with slab (lower or upper bound plastic resistance of dissipative zones) may be computed taking into account only the steel section (design in accordance with Concept C as defined in **5.1.2**) if the slab is totally disconnected from the steel frame in a circular zone around a column of diameter $2b_{eff}$, with b_{eff} being the larger of the effective widths of the beams connected to that column.

5.5.5.2 – For the purposes of **5.5.5.1**, *totally disconnected* means that there is no contact between slab and any vertical side of any steel element (e.g. columns, shear connectors, connecting plates, corrugated flange, steel deck nailed to flange of steel section).

5.5.5.3 – In partially encased beams, the contribution of concrete between the flanges of the steel section should be taken into account.