5.8. DESIGN AND DETAILING RULES FOR STRUCTURAL SYSTEMS MADE OF REINFORCED CONCRETE STRUCTURAL WALLS COMPOSITE WITH STRUCTURAL STEEL ELEMENTS

5.8.1. Specific criteria

5.8.1.1 – The provisions in this subclause apply to composite structural systems belonging in one of the three types defined in **5.1.3.1(e)**.

5.8.1.2 – Structural system Types 1 and 2 shall be designed to behave as structural walls and dissipate energy in the vertical steel sections and in the vertical reinforcement. The infills shall be tied to the boundary elements to prevent separation.

5.8.1.3 – In structural system Type 1, the storey shear forces shall be carried by horizontal shear in the wall and in the interface between the wall and beams.

5.8.1.4 – Structural system Type 3 shall be designed to dissipate energy in the structural walls and in the coupling beams.

5.8.2. Analysis

5.8.2.1 – The analysis of the structure shall be based on the section properties defined in **Chapter 3** for concrete walls and in **5.2.2** for composite beams.

5.8.2.2 – In structural systems of Type 1 or Type 2, when vertical fully encased or partially encased structural steel sections act as boundary members of reinforced concrete infill panels, the analysis shall be made assuming that the seismic action effects in these vertical boundary elements are axial forces only.

5.8.2.3 – These axial forces should be determined assuming that the shear forces are carried by the reinforced concrete wall and that the entire gravity and overturning forces are carried by the shear wall acting compositely with the vertical boundary members.

5.8.2.4 – In structural system of Type 3, if composite coupling beams are used, **5.5.2.2** and **5.5.2.3** apply.

5.8.3. Detailing rules for composite walls

5.8.3.1 – The reinforced concrete infill panels in Type 1 and the reinforced concrete walls in Types 2 and 3 shall meet the detailing requirements of **Chapter 3**.

5.8.3.2 – Partially encased steel sections used as boundary members of reinforced concrete panels shall belong to a class of cross-section indicated in **Table 5.3**.

5.8.3.3 – Fully encased structural steel sections used as boundary members in reinforced concrete panels shall be designed in accordance with **5.4.4**.

5.8.3.4 – Partially encased structural steel sections used as boundary members of reinforced concrete panels shall be designed in accordance with **5.4.5**.