9 ACCURACY OF ERECTED STEELWORK

9.1 GENERAL

9.1.1 Scope

1 This Part the requirements for the accuracy of erected structural steelwork.

2 Related Parts and Sections are:

This Section

Part 7..... Accuracy of Fabrication
Part 8..... Erection

9.1.2 General Requirements

1 Permitted maximum deviations in erected steelwork shall be as specified in Clause 9.4.2 of this Part taking account of the following:

(a) All measurements be taken in calm weather, and due note is to be taken of temperature effects on the structure. (See Clause 8.4.2 of this Section).

(b) The deviations shown for I sections apply also to box and tubular sections.

(c) Where deviations are shown relative to nominal centrelines of the section, the permitted deviation on cross-section and straightness, given in Part 7 of Section, may be added.

9.2 INFORMATION FOR SUB CONTRACTORS

9.2.1 General

1 The Contractor shall advise sub contractors engaged in operations following steel erection of the deviations acceptable in this document in fabrication and erection, so that they can provide the necessary clearances and adjustments.

9.3 DEVIATIONS

9.3.1 Permitted Deviations For Foundations, Walls And Foundation Bolts

1 The permitted deviations for foundations, walls and foundation bolts are given in Table 9.1.

Table 9.1
Permitted Deviations for Foundations, Walls and Foundation Bolts

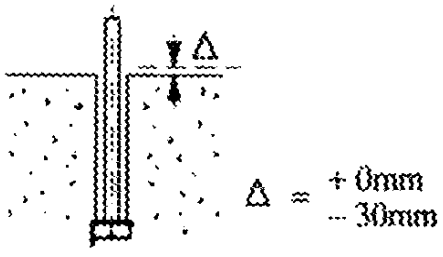
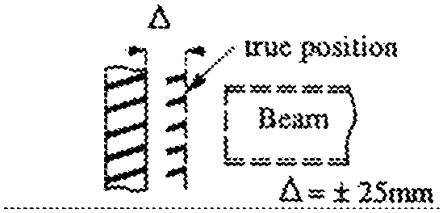
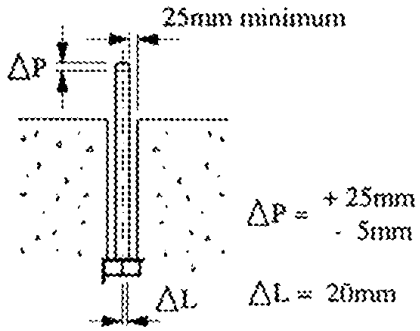
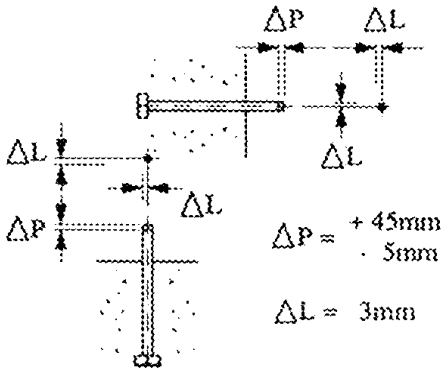
Item	Component	Deviation
1	Foundation Level Deviation from exact level.	

Table 9.1 (Continued)
Permitted Deviations for Foundations, Walls and Foundation Bolts

Item	Component	Deviation
2	Vertical Wall Deviation from exact position at steelwork support point.	
3	Pre-set Foundation Bolt or Bolt Groups when Prepared for Adjustment Deviation from the exact location and level and minimum movement in pocket.	
4	Pre-set Foundation Bolt or Bolt Groups when Not Prepared for Adjustment Deviation from the exact location level and protrusion.	

9.3.2 Permitted Deviations of Erected Components

1 Permitted deviations of erected components is given in Table 9.2.

Table 9.2
Permitted Deviations of Erected Components

Item	Component	Deviation
1	Position at Base of First Column Erected Deviation of section centreline from the specified position.	

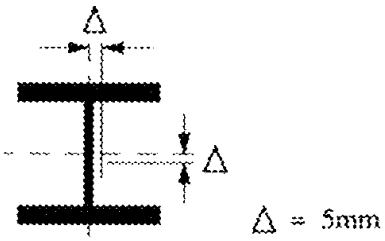
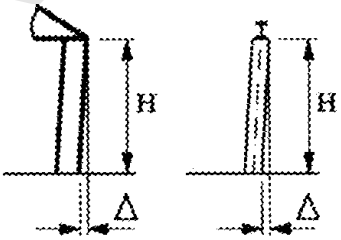
Item	Component	Deviation
		
2	Overall Plan Dimensions Deviation in length or width	True overall dimension " L" L < 30 metres, Δ = 20 mm L > 30 metres, Δ = 20 mm + 0.25 (L - 30) mm where L is in metres
3	Single Storey Columns Plumb Deviation of top relative to base, excluding portal frame columns, on main axes. See Clause 3.4.4 (c) of this Section regarding pre-setting continuous frames.	 Δ = ± H/600 or 5 mm whichever is greater Max = ± 25 mm

Table 9.2 (Continued)
Permitted Deviations of Erected Components

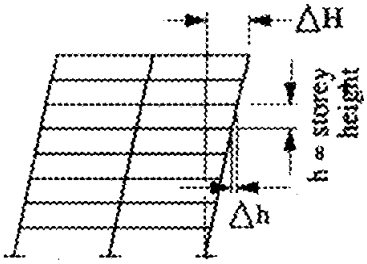
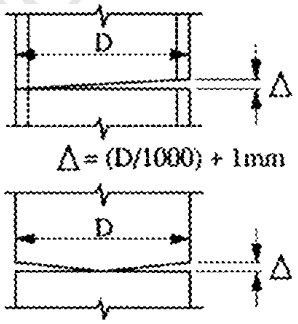
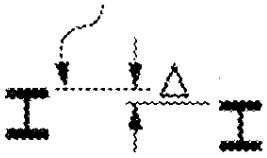
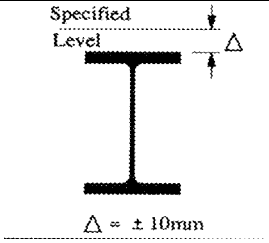
Item	Component	Deviation
4	Multi-storey Columns Plumb Deviation in each storey and maximum deviation relative to base.	 Δ h = h/600 or 3 mm whichever is greater Δ H = 50 mm maximum
5	Gap Between Bearing Surfaces (See Clauses 4.4.3-3, 6.3.1 and Item 3 of Table 7.1)	
6	Alignment of Adjacent Perimeter Columns Deviation relative to next column on a line parallel to the grid line when measured at base or splice level.	critical face of columns  Δ = 10 mm
7	Floor Beams Level Deviation from specified level at supporting stanchion.	

Table 9.2 (Continued)
Permitted Deviations of Erected Components

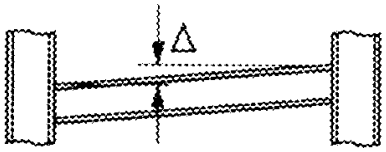
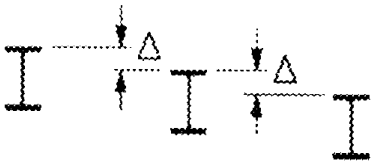
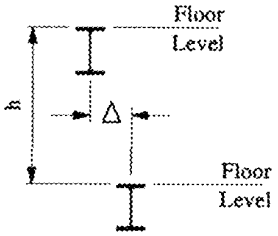
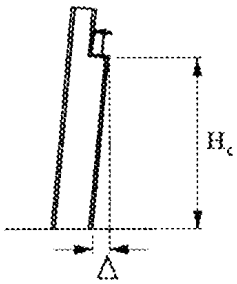
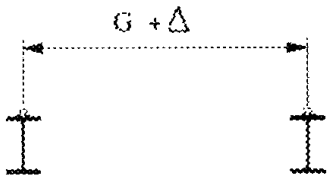
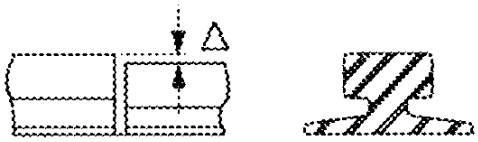
Item	Component	Deviation
8	Floor Beams Level at Each End of Same Beam Deviation is level.	 Δ = 5mm
9	Floor Beams Level of Adjacent Beams within distance of 5 metres Deviation from relative horizontal levels (measured on centreline of top flange)	 Δ = ± 5mm
10	Beams Alignment Horizontal deviation relative to an adjacent beam above or below.	 h < 3 m, Δ = 5 mm h > 3 m, Δ = h/600
11	Crane Gantry Columns Plumb Deviation of cap relative to base.	 $\Delta = \pm H_c/1000$ or 5 mm whichever is greater Max = ± 25 mm

Table 9.2 (Continued)
Permitted Deviations of Erected Components

Item	Component	Deviation
12	Crane Gantries Gauge of Rail Tracks Deviation from true gauge	 $\Delta = \pm$ 10 mm
13	Joints in Gantry Crane Rails	 Δ = 0.5 mm

END OF PART