

Gauge Lines

For rolled sections, the gauges of the holes between lines of bolts should be one of the standard gauges shown in Tables 4 to 7. Flange gauges listed in these tables provide the minimum edge distances for the holes and clearances between the bolts and the web sufficient to allow installation of the bolts. Web gauges are selected to provide adequate clearance between the bolt holes and the flange to permit both holing and installation of the bolts.

In the tables, the first entry is the preferred one and other possible alternatives are given in descending order of preference. For all the connections, the choice is taken care of in the standard detail for the angle cleat and flexible end plate.

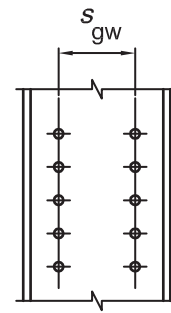
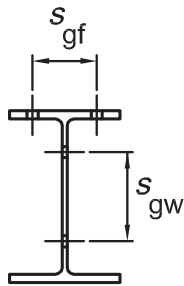


TABLE 4
GAUGE LINES FOR UNIVERSAL SECTIONS

Section	Flange s_{gf}				Web s_{gw}						
	M20		M24		M20			M24			
Universal beams											
610UB	140	90	140	90	140	90	70	140	90	70	
530UB	140	90	140	90	140	90	70	140	90	70	
460UB	90	140	90		90	70	140	90	70	140	
410UB	90	70	90		90	70	140	90	70	140	
360UB,310UB	90	70	90		90	70	140	90	70	140	
310UB32.0	70				90	70	140	90	70	140	
250UB	70	90			70	90	140	70	90	140	
250UB25.7*	70				70	90	140	70	90	140	
200UB	70				70	90		70	90		
200UB18.2*	50				70	90		70	90		
180UB	b				70	90		70	90		
150UB	b				70			70			
Universal columns											
310UC	140	90	140	90	90	70	140	90	70	140	
250UC	140	90	140	90	90	70	140	90	70	140	
200UC	140	90	140	90	90	70		90	70		
150UC	90	70	90		70			70			
100UC	60		b		c			c			
Preference	1	2	1	2	1	2	3	1	2	3	

NOTES:

*Gauge listed for 250UB25.7 and 200UB18.2 are for M16 bolts.

b—Indicates that the flange will not accommodate this size of bolt.

c—Indicates that the web will not accommodate two lines of bolts with a gauge of 50 mm or more.

All dimensions are in mm.

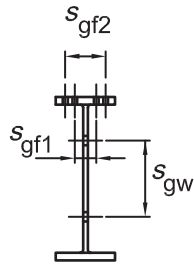


TABLE 5
GAUGE LINES FOR WELDED SECTION
FLANGES

Section	M20				M24			
	S _{gf1}		S _{gf2}		S _{gf1}		S _{gf2}	
Welded beams								
1200WB455-392	140	90	280	420	140	90	280	
1200WB342-278	140	90	280		140	90	280	
1200WB249	140	90			140	90		
1000WB322-258	140	90	280		140	90	280	
1000WB215	140	90			140	90		
900WB282,218	140	90	280		140	90	280	
900WB175	140	90			140	90		
800WB	140	90			140	90		
700WB	140	90			140	90		
Welded columns								
500WC	140		280	420	140		280	
400WC	140		280		140		280	
350WC	140				140			
Preference	1	2	1	2	1	2	1	2

NOTE: All dimensions are in mm.

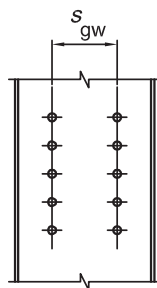


TABLE 6
GAUGE LINES FOR WELDED SECTION
WEBS

Section	Web S _{gw}					
	M20			M24		
Welded beams						
1200WB	140	90	70	140	90	70
1000WB	140	90	70	140	90	70
900WB	140	90	70	140	90	70
800WB	140	90	70	140	90	70
700WB	140	90	70	140	90	70
Welded columns						
500WC	140	90	70	140	90	70
400WC	140	90	70	140	90	70
350WC	140	90	70	140	90	70
Preference	1	2	3	1	2	3

NOTE: All dimensions are in mm.

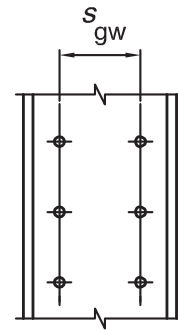
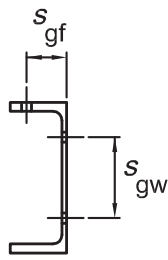


TABLE 7
GAUGE LINES FOR PARALLEL FLANGE CHANNELS

Section	Flange s_{gf}			Web s_{gw}									
	M16	M20	M24	M16			M20			M24			
Parallel flange channels													
380x100	55	55	55	140	90	70	140	90	70	140	90	70	
300x 90	55	55	b	140	90	70	140	90	70	140	90	70	
250x 90	55	55	b	140	90	70	140	90	70	140	90	70	
230x 75	45	45	b	140	90	70	90	70		90	70		
200x 75	45	45	b	90	70		90	70		90	70		
180x 75	45	45	b	70	90		70	90		70			
150x 75	45	45	b	70			65			55			
Preference	1	1	1	1	2	3	1	2	3	1	2	3	

NOTES:

b—Indicates that the flange will not accommodate this size of bolt.

c—Indicates that the web will not accommodate two lines of bolts with a gauge of 50 mm or more.

All dimensions are in mm.

Web Coping

The connections in the series are detailed from the top flange of the beam with the dimension 'a' between the top of the steel beam and the centre of the first hole in the connection controlling the location of all holes. Dimension 'a' has been standardised at 100mm, which allows sufficient clearance for all beam-to-beam connections except where the supported member depth is less than 240mm for which a = 70mm has been adopted.

A standard method of coping beams in beam-to-beam connections has been adopted. This is necessary since the cope detail affects the design capacity of some connections and may also influence the torsional end restraint provided by the connection.

The layouts of beam-to-beam connections involving web copes are shown in Figure 9 for single web copes (SWC) and in Figure 10 for double web copes (DWC). Standard lengths of web copes (length = dimension 'c') in beam-to-beam connections for universal sections are given in Tables 8 and 9.