

Minimum Connection Depth

Is there a minimum connection depth required for a beam framing to a supporting beam or column?

Chapter F in the AISC *Specification for Structural Steel Buildings* states “The provisions in this chapter are based on the assumption that points of support for beams and girders are restrained against rotation about their longitudinal axis.” That is, the *Specification* requires that rotational support must be provided at supports. It is common practice to provide a connection with depth at least equal to $1/2d$, as recommended for all the framed connections in Chapter 10 of the AISC *Specification*, to ensure that the proper restraint is provided. It may be possible to provide the required restraint by other means, but the half-depth connection has become a de facto requirement.

Faying Surface Preparation

The faying surfaces of a slip-critical connection have been prepared to meet the slip coefficient around the bolt locations only. Paint overspray has occurred on areas of the faying surface away from the bolt holes. Is this permitted?

Figure C-3.1 in the RCSC *Specification for Structural Steel Connections* shows the applicable requirements. A distance of one bolt diameter (or at least 1 in.) around the perimeter of each bolt hole, plus all area within this outside perimeter, must meet the requirements for the qualified surface. The remainder of the faying surface outside this zone can be painted.

Often, the paint is placed lower and perhaps usually is not a problem. However, if the connection is less than 1/2" from the slab in place, this is less than the stability during erection. These arrangements are allowed as close to the slab as in mind some allowance for

Table J2.4 in the 2005 AISC *Specification for Structural Steel Buildings* lists minimum sizes for fillet welds. Is this table limited to use with A992 steel only?

No. Table J2.4 is not related to any specific material grade, but Section J2.4 for

the basis of this table.

G, E, E.

Shape Surface Area

Where can I find information to calculate the surface area of a 30-ft-long W24×68?

Appendix A of AISC *Design Guide 19* provides the surface area in ft²/ft. Assuming that you have what the table calls “Case B,” which is the entire surface area of both flanges and web, the surface area = (6.77 ft²/ft)(30 ft) = 203 ft². The table also lists surface areas assuming that the shape is boxed-in or if the outside of one flange is not included. This publication is a free download for AISC members at www.aisc.org/epubs.

B, D, D., E.

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