

The authors of the design guide point to the 1986 AISC LRFD *Specification* as the source of the 0.7 alue for steel placed against concrete or grout. The 1986 *Specification* states:

The coefficient of friction shall be 0.90 for concrete placed against as-rolled steel ith contact plane a full plate thickness belo the concrete surface; 0.70 for concrete or grout placed against as-rolled steel ith contact plane coincidental ith the concrete surface; 0.55 for grouted conditions ith the contact plane bet een grout and as-rolled steel abo e the concrete surface.

It pro ides no reference for these alues.

Both the design guide and the *Specification* are no silent on the matter. I ill therefore pro ide some references that relate to this topic:

- Burdette, Ed in G., Teresa C. Pern^y, and Ra^ymond R. Funk, Load Rela ation Tests of Anchors in Concrete, Presented at ACI Con ention in Atlanta, GA, Januan^y 21, 1982, published in ACI, Special Publication SP-103.
- E. Chesson, Jr., N. L. Faustino, and W. H. Munse, Engineering Journal, Second Quarter, April 1973. (Visit
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- Kulak, G.L., J.W. Fisher and J.H.A. Struik, 1987, Guide to Design Criteria for Bolted and Riveted Joints, Second Edition, John Wile^{y,*} & Sons, Ne York, NY.
- Shoup, T. E. and Singleton, R. C., "Headed Concrete Anchors," *Proceedings of the American Concrete Institute*, Vol. 60, 1963.
- AIJ. (2006), Recommendation for Design of Connection in Steel Structures, AIJ, Tokyo, Japan. Washio, K., Takimoto, G., Hisatsune, J., Su uki, T. (1969). Research of fi effect for steel column base part.2- Slip bet een steel plate and mortar. Summaries of Technical Papers of Annual Meeting Architectural Institute of Japan, Structure 44, 1177-1178.

These references \max^{y} allo y^{y} ou to select a coefficient from testing and other data that matches the detail y^{y} ou are considering.

Carlo Lini





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- Relati e to eb compression buckling, Section J10.5 states: When re uired, a single trans erse stiffener, a pair of trans erse stiffeners or a doubler plate e tending the full depth of the eb shall be pro ided.
- Relati e to panel one shear, Section J10.6 states: When re uired, doubler plate(s) or a pair of diagonal stiffeners shall be pro ided ithin the boundaries of the rigid connection hose ebs lie in a common plane.

Thus, e cept for flange local bending, all of the limit states presented in Section J10 can be addressed ith either stiffeners or doublers. It should be noted that in many instances the stiffener or doubler can ser e double-duty, addressing both panel, one shear and concentrated loading.

Economical fabrication should be the goal in e aluating alternati es, and the most economical alternati e is nearly al a^ys to increase the si e of the member to eliminate the need for reinforcement. Note also that the option co ered abo e for the use of diagonal stiffeners is historic and, in m^y e perience, rarely used toda^y.

Larry S. Muir, P.E.

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Welding	Acı	ross	the	Flange		
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The 2010 AISC Specification (a free do nload a ailable from 888. . /2010) does not prohibit elding across the tension flange of a beam. Many engineers and detailers I ha e orked ith in the past ha e been adamant that elds should not be placed across a beam tension flange. When asked, many different reasons for this old rule of thumb ere gi en, but the only alid concern that I am a are of is related to elding across the flange of a loaded member. In this case, the heat from elding temporarily reduces the base metal strength, causing a less- or non-effecti e area near the eld. While this area can be significant in the plane perpendicular to eld tra el, the effect is larger for the plane parallel to eld tra el. This concept is discussed further in the AISC ebinar Design of Reinforcement for Steel Members, Part 2, hich can be ://888. ? =32580. As ie ed at . / . You'll see (and hear) in that lecture, it isn't as simple as the often-repeated ad ice.

Bo Dowswell, P.E., Ph.D.

Quiz Correction

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There as indeed an error in the figure e pro ided for Question 2 in Februan^{3/3}s Steel Qui . The uestion as about OSHA regulations for double connections, hich are concerned ith connections that meet through the eb of a column or through the eb of a girder o er the top of a column. We sho ed a location a a^{3/2} from the column, and the OSHA regulations do not include such a condition. Tha^{3/2} focus specificall^{3/2} on locations at columns here there is a column fall-a a^{3/2} ha ard. The corrected illustration is sho n belo . Also, the ans er referenced OSHA Section 1926.756(a) (1); the correct reference is actuall^{3/2} Section 1926.756(c)(1).

