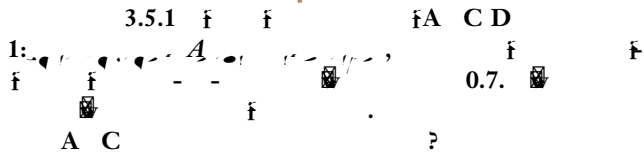


## Steel-on-Concrete Slip Coefficient



The authors of the design guide point to the 1986 AISC LRFD *Specification* as the source of the 0.7 value 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 with contact plane a full plate thickness below the concrete surface; 0.70 for concrete or grout placed against as-rolled steel with contact plane coincidental with the concrete surface; 0.55 for grouted conditions with the contact plane between grout and as-rolled steel above the concrete surface.

It provides no reference for these values.

Both the design guide and the *Specification* are not silent on the matter. I will therefore provide some references that relate to this topic:

- Burdette, Edwin G., Teresa C. Perrin, and Raymond R. Funk, "Load Relation Tests of Anchors in Concrete," Presented at ACI Convention in Atlanta, GA, January 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 [ACI.org](#) for more information.)

- Kulak, G.L., J.W. Fisher and J.H.A. Struik, 1987, *Guide to Design Criteria for Bolted and Riveted Joints*, Second Edition, John Wiley & Sons, New 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., Suzuki, T. (1969). Research of slip effect for steel column base part.2- Slip between steel plate and mortar. Summaries of Technical Papers of Annual Meeting Architectural Institute of Japan, Structure 44, 1177-1178.

These references may allow you to select a coefficient from testing and other data that matches the detail you are considering.

*Carlo Lini*

## Dogs and Wedges

