
DISCUSSION

AISC LRFD Rules for Block Shear in Bolted Connections—A Review

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Discussion by MOHAN GUPTA and L. M. GUPTA

The authors have presented a comprehensive review of AISC LRFD rules for block shear. They have recommended a simple equation for predicting the block shear of gusset plates and angles. They have rightly observed that for angles, current LRFD rules give better agreement with the tests than the equation they have recommended.

They have included only one test result by Epstein (1992), although in five different results block shear was the sole mode of failure. The test-to-predicted ratio for this single result is reported as 0.8, and the paper states that it is not clear why the test results by Epstein are overestimated by as much as 20 percent. The reason is quite simple. There is a mistake in the computation of this value, and the correct value is 1.01. Probably, this mistake is because they have taken the gage distances from the toe of the angle, as

wrongly drawn in Figure 1 of the original paper (Epstein, 1992). The gage distances are taken from the heel of the angle, as is clear from the photographs in Figure 3 and computations done in the original paper.

The test-to-predicted ratios for all the five tests by Epstein (1992) for which block shear was the sole mode of failure are shown in Table 1. Most of these ratios are nearer to 1.00, reflecting a good correspondence between experimental results and predicted values.

REFERENCES

Epstein H.I. (1992), "An Experimental Study of Block Shear Failure of Angles in Tension", *Engineering Journal*, AISC, Second Quarter, Vol. 29, No. 2, pp. 75 - 84.

Table 1. Corrected Test-to-Predicted Ratios for Epstein (1992) Results

Source	Specimen No.	Test - to - Predicted Ratio	
		AISC LRFD	Recommended
Epstein (1992)	1	0.87	0.87
	9	0.98	0.98
	11	1.01	1.01
	25	1.01	1.01
	37	1.08	1.08
	Average	0.99	0.99
	Std. Dev.	0.07	0.07

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