

INFORMATION ABOUT THREADED CONNECTIONS VS. WELDED CONNECTIONS

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HOT-HED

FATIGUE TESTS ON FLANGED ASSEMBLIES

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Qualitative differences between the various types of pipe flanges in common use have long been recognized, but their quantitative evaluation in terms of rules, formulas, or ratings which could be used as a guide by the practicing engineer has been accomplished only partially. Two problems are involved, i.e., the determination of the strength and tightness of a flanged assembly under internal pressure, and the other the effects of the variable bending moments associated with mechanical vibrations of temperature fluctuations of the flowing medium or surrounding atmosphere. The present investigation is intended to contribute toward an understanding of the latter phase; stress-intensification factors are reported which have been obtained from fatigue tests of full-scale assemblies of 4-in. flanges of the 300-lb ASA pressure class and hence are directly applicable to piping flexibility calculations.

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