

WRC Bulletin 345 July 1989

Assessing Fracture Toughness and Cracking Susceptibility of Steel Weldments—A Review

By J. A. Davidson, P. J. Konkol and J. F. Sovak

The literature survey reviews the domestic and foreign literature to determine, document and evaluate: 1) the parameters of welding that control weld-metal and HAZ cracking; 2) tests for assessing the susceptibility of structural steel to weld-metal and HAZ cracking; 3) the parameters of welding that control HAZ toughness; and 4) tests for measuring the toughness of weld metal and HAZ. The work was performed at the United States Steel Corporation Technical Center in Monroeville, Pa., and was sponsored by the Offices of Research and Development, Federal Highway Administration, U.S. Department of Transportation, Washington, D.C.

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WRC Bulletin 347 September 1989

This bulletin contains two reports:

(1) Welded Tees Connections of Pipes Exposed to Slowly Increasing Internal Pressure

By J. Schroeder

(2) Flawed Pipes and Branch Connections Exposed to Pressure Pulses and Shock Waves

By J. Schroeder

Publication of these reports was sponsored by the Subcommittee on Reinforced Openings and External Loadings of the Pressure Vessel Research Committee of the Welding Research Council. The price of WRC Bulletin 347 is \$25.00 per copy, plus \$5.00 for U.S. and \$10.00 for overseas, postage and handling. Orders should be sent with payment to the Welding Research Council, Room 1301, 345 E. 47th St., New York, NY 10017.

WRC Bulletin 356 August 1990

This Bulletin contains three reports involving welding research. The titles describe the contents of the reports.

(1) Finite Element Modeling of a Single-Pass Weld

By C. K. Leung, R. J. Pick and D. H. B. Mok

(2) Finite Element Analysis of Multipass Welds

By C. K. Leung and R. J. Pick

(3) Thermal and Mechanical Simulations of Resistance Spot Welding

By S. D. Sheppard

Publication of the papers in this Bulletin was sponsored by the Welding Research Council. The price of WRC Bulletin 356 is \$35.00 per copy, plus \$5.00 for U.S. and \$10.00 for overseas postage and handling. Orders should be sent with payment to the Welding Research Council, 345 E. 47th St., Room 1301, New York, NY 10017.

WRC Bulletin 352 April 1990

In October 1987, the PVRC Steering and Technical Committees on Piping Systems established a task group on independent support motion (ISM) to evaluate the technical merits of using the ISM method of spectral analysis in the design and analysis of nuclear power plant piping systems.

The results of the task group evaluation culminated in a unanimous technical position that the ISM method of spectral seismic analysis provides more accurate and generally less conservative response predictions than the commonly accepted envelope response spectra (ERS) method, and are reported in this WRC Bulletin. The price of WRC Bulletin 352 is \$25.00 per copy, plus \$5.00 for U.S., or \$10.00 for overseas, postage and handling. Orders should be sent with payment to the Welding Research Council, 345 E. 47th St., Room 1301, New York, NY 10017.

WRC Bulletin 360 January 1991

Stress Indices, Pressure Design and Stress Intensification Factors for Laterals in Piping

By E. C. Rodabaugh

The study described in this report was initiated in 1987 by the PVRC Design Division Committee on Piping, Pumps and Valves, under a grant to E. C. Rodabaugh following an informal request from the ASME Boiler and Pressure Vessel Committee, Working Group on Piping (WGPD (SGD) (SC-II) to develop stress indices and stress intensification factors (*i*-factors) for piping system laterals that could be considered by the ASME committee for incorporation into the Code.

In this study, E. C. Rodabaugh considered all available information on lateral connections in concert with existing design guidance for 90-deg branch connections; and has developed compatible design guidance for lateral connections for piping system design. As a corollary bonus, he has also extended the parameter range for the "B" stress indices for 90-deg branch connections from $d/D = 0.5$ (the present Code limit) to $d/D = 1.0$. Therefore, this report should be of significant interest to the B31 industrial piping code committees, as well as the ASME Boiler and Pressure Vessel Committee.

Publication of this report was sponsored by the Committee on Piping, Pumps and Valves of the Design Division of the Pressure Vessel Research Council. The price of WRC Bulletin 360 is \$30.00 per copy, plus \$5.00 for U.S. or \$10.00 for overseas postage and handling. Orders should be sent with payment to the Welding Research Council, 345 E. 47th St., Room 1301, New York, NY 10017.

WRC Bulletin 361 February 1991

This Bulletin contains two reports that compare the French RCC-M Pressure Vessel Code and the U.S. ASME Section III Code on Design of Nuclear Components and Piping Design Rules.

(1) Improvements on Fatigue Analysis Methods for the Design of Nuclear Components Subjected to the French RCC-M Code

By J. M. Grandemange, J. Heliot, J. Vagner, A. Morel and C. Faidy

(2) Framatome View on the Comparison between Class 1 and Class 2 RCC-M Piping Design Rules

By C. Heng and J. M. Grandemange

Publication of this report was sponsored by the Pressure Vessel Research Council of the Welding Research Council. The price of WRC Bulletin 361 is \$30.00 per copy, plus \$5.00 for U.S. or \$10 for overseas postage and handling. Orders should be sent with payment to the Welding Research Council, 345 E. 47th St., Room 1301, New York, NY 10017.