

Summary of Documents for AWHEM Association

Performed by

Harry J. Sweet & Associates, Inc.

- Document #1** **Stress Calculations and Design Criteria for 5,000 and 10,000 psi (345 and 690 Bar) Clamp Type Connections** June 1984
This bulletin contains the derivations of the design equations for the API clamp type connectors. The use of these equations is limited to connections having geometry's similar to those of API Spec. 6A.
- Document #2** **Stress Calculations for Standard API Flanges** April 1974
This paper contains the stress calculations carried out by means of a computer program, which was written to perform the standard Taylor-Waters flange calculations.
- Document #3** **Strain Gage results for Proposed 1 13/16 and 7 1/16 30,000 psi Rated API Flanges** March 1981
This report contains the results of the test that was performed on the prototype 1 13/16" and 7 1/16" flanges rated at 30,000 psi for submission to API.
- Document #4** **Finite Element Stress Calculations for the proposed line of 30,000 psi Rated Flanges** December 1977
This document covers the finite element model solutions to establish dimensions and manufacturing criteria for a line of 30,000 psi rated flanges for submission to API.
- Document #5** **Finite Element Stress Calculations for Three Sizes of Crossover Flanges** March 1979
This report contains the Finite Element Stress Analysis that was performed on three sizes of crossover flanges. The sizes that were investigated were 13 5/8" 5M modified to 11 1/16" 10M, 9" 15M modified to 6 5/8" 20M, and 16 3/4" 10M modified to 13 5/8" 15M.
- Document #6** **Bending Moment Capacity Calculations for Special API Clamp/Hub Combinations** September 1983
This report contains the study that was performed to provide bending moment ratings as a function of internal pressure for five API clamp-hub combinations and for a heavy duty 18 3/4" 10M connector.
- Document #7** **Stress Analyses of API 16B and 16BX Hubs** November 1986
This document contains the calculations that were performed to determine the design adequacy of the clamp type connector hubs in the API Spec 16A.
- Document #8** **AWHEM Clamp Type Connector Report** November 1978
This report contains the derivation of equations used in the development of the design manual for clamp type connectors. The procedure was based on a "strength of material" approach and presented in a format similar to that used in flange design. This document contains two books.
- Document #9** **Capabilities of Overbored API Threaded Flanges under Combination of Loading PRAC 89-21** June 1990
This report documents the analysis work done to establish the load capacity of all threaded flanges given in the October, 1989 Edition of API 6A (Sixteenth Edition) that violated the maximum bore requirements.

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- Document #10** **Temperature Derating of API Flanges under Combination of Loading PRAC 89-21** December 1989
This report is a continuation to the report on the capabilities of flanges under combined loading (PRAC 86-21) which resulted in the publication of API Bulletin 6AF. Also included is an in depth look into the effect of elevated temperatures on API flanges.
- Document #11** **Capabilities of API Flanges under Combination Loading PRAC-86** October 1987
This report documents the analysis work done to establish the load capacity of all flanges given in the April, 1986 Edition of API 6A (fifteenth Edition) and 6AB. A total of 69 different geometries were analyzed.
- Document #12** **Development of Design Equations for Clamp Type Connectors** June 1973
This document contains the development of a usable design manual for clamp type connectors. This report contains the results of this program. The derivations of the equations are given in Chapter II while Chapter III contains the condensed design equations.
- Document #13** **Effects of Fire Environment** December 1980 Revised March 1981
This report contains the analytical procedure which was developed to predict whether or not standard flanges and clamps will leak in the API Fire Test. The procedure is based on the results of twelve finite element analyses of end connections.
- Document #14** **Summaries of Design Equations for Clamp Type Connectors** June 1975
This report is the completion of the first study (Document #12), three additional studies where performed. One consisted of the application of a modified version of the Taylor-Waters flange design equations to the standard line of API flanges.
- Document #15** **Theoretical and Experimental Study of Clamp Type Connector (Volume 1)** June 1975
This report contains the derivation of equations for bending capacity of the Clamp type connector as well as the experimental study performed on the 2 inch and 7 inch connectors.
- Document #16** **Theoretical and Experimental Study of Clamp Type Connectors (Volume 2)** June 1975
This document contains the actual strain gage results of the connectors tested to determine the bending capacity of the clamp type connectors.