

# GUARANTEED HIGHER STRENGTH PROPERTIES

ASME STANDARDS TECHNOLOGY, LLC

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#### FOREWORD

This document was developed under a research and development project which resulted from ASME Pressure Technology Codes & Standards (PTCS) committee requests to identify, prioritize and address technology gaps in current or new PTCS Codes, Standards and Guidelines. This project is one of several included for ASME fiscal year 2008 sponsorship which are intended to establish and maintain the technical relevance of ASME codes & standards products. The specific project related to this document is project 07-07 (BPVC#4), entitled, "Guaranteed Strength Properties."

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#### ABSTRACT

This report discusses the various aspects related to the tensile properties in plates and forgings, including the feasibility of using guaranteed tensile values that exceed the specified minimum tensile strength in the material specifications, and provides recommendations for design stresses and Code construction based on the higher guaranteed tensile and yield strength values.

The issues discussed in this report apply mainly to tensile strength values higher than the minimum specification values since the tensile strength generally governs the Code allowable stresses for carbon and low alloy steels for Section VIII, Division 1 construction. However, with the increase in tensile strength there is also an increase in the yield strength. The yield strength may govern the Code allowable stresses for Section VIII, Division 2 and 3 construction