Casing Wear Tests

API STANDARD 7CW
FIRST EDITION, JUNE 2015

REAFFIRMED, JULY 2020

Special Notes

API publications necessarily address problems of a general nature. With respect to particular circumstances, local, state, and federal laws and regulations should be reviewed.

Neither API nor any of API's employees, subcontractors, consultants, committees, or other assignees make any warranty or representation, either express or implied, with respect to the accuracy, completeness, or usefulness of the information contained herein, or assume any liability or responsibility for any use, or the results of such use, of any information or process disclosed in this publication. Neither API nor any of API's employees, subcontractors, consultants, or other assignees represent that use of this publication would not infringe upon privately owned rights.

API publications may be used by anyone desiring to do so. Every effort has been made by the Institute to assure the accuracy and reliability of the data contained in them; however, the Institute makes no representation, warranty, or guarantee in connection with this publication and hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use or for the violation of any authorities having jurisdiction with which this publication may conflict.

API publications are published to facilitate the broad availability of proven, sound engineering and operating practices. These publications are not intended to obviate the need for applying sound engineering judgment regarding when and where these publications should be utilized. The formulation and publication of API publications is not intended in any way to inhibit anyone from using any other practices.

Any manufacturer marking equipment or materials in conformance with the marking requirements of an API standard is solely responsible for complying with all the applicable requirements of that standard. API does not represent, warrant, or guarantee that such products do in fact conform to the applicable API standard.

Users of this Standard should not rely exclusively on the information contained in this document. Sound business, scientific, engineering, and safety judgment should be used in employing the information contained herein.

Foreword

Nothing contained in any API publication is to be construed as granting any right, by implication or otherwise, for the manufacture, sale, or use of any method, apparatus, or product covered by letters patent. Neither should anything contained in the publication be construed as insuring anyone against liability for infringement of letters patent.

Shall: As used in a standard, “shall” denotes a minimum requirement in order to conform to the specification.

Should: As used in a standard, “should” denotes a recommendation or that which is advised but not required in order to conform to the specification.

This document was produced under API standardization procedures that ensure appropriate notification and participation in the developmental process and is designated as an API standard. Questions concerning the interpretation of the content of this publication or comments and questions concerning the procedures under which this publication was developed should be directed in writing to the Director of Standards, American Petroleum Institute, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001. Requests for permission to reproduce or translate all or any part of the material published herein should also be addressed to the director.

Generally, API standards are reviewed and revised, reaffirmed, or withdrawn at least every five years. A one-time extension of up to two years may be added to this review cycle. Status of the publication can be ascertained from the API Standards Department, telephone (202) 682-8000. A catalog of API publications and materials is published annually by API, 200 Massachusetts Avenue, NW, Suite 1100 Washington, DC 20001.

Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001, standards@api.org.

Contents

Casing Wear Tests

1 Scope

It is the intent of this standard to provide a method by which results will be reproducible, under a specified set of conditions, for conducting tests that determine casing wear due to rotation of drill stem elements.

This standard is intended to be used in a laboratory environment and is not intended for use in the field drilling operations. The testing requirements in this standard are not represented at well conditions. This standard is divided into four major areas: machine apparatus, procedures, materials, and reporting.

This standard will not address the significance of specific data values. It is the responsibility of the user of this standard to establish the appropriate test data values that are acceptable based on their respective application, operational limitations, and safety practices.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Manual of Petroleum Measurement Standards Chapter 10.4, *Determination of Water and/or Sediment in Crude Oil by the Centrifuge Method (Field Procedure)*

API Recommended Practice 13B-1, *Recommended Practice for Field Testing Water-Based Drilling Fluids*

API Recommended Practice 19C, *Measurement of Properties of Proppants Used in Hydraulic Fracturing and Gravel-Packing Operations*

API Specification 5CT, *Specification for Casing and Tubing*

API Specification 5DP, *Specification for Drill Pipe*

3 Terms, Definitions, and Abbreviations

3.1 Terms and Definitions

For the purposes of this document, the following definitions apply.

3.1.1
asperity
Protuberance in the small-scale topographical irregularities of a solid surface.

3.1.2
axial friction factor
Ratio of frictional force and contact force between the test specimen and the casing while sliding (not rotating).

3.1.3
axial-load
Force imparted by the tool joint specimen against the inside casing wall.