ASME PTC 19.2-2010
[Revision of ASME/ANSI PTC 19.2-1987 (R2004)]

REAFFIRMED 2020

Pressure Measurement

Instruments and Apparatus Supplement

Performance Test Codes

AN AMERICAN NATIONAL STANDARD

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Three Park Avenue • New York, NY • 10016 USA

Date of Issuance: October 29, 2010

This Code will be revised when the Society approves the issuance of a new edition. There will be no addenda issued to PTC 19.2–2010.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Code. Periodically certain actions of the ASME PTC Committee may be published as Code Cases. Code Cases and interpretations are published on the ASME Web site under the Committee Pages at http://cstools.asme.org as they are issued.

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Three Park Avenue, New York, NY 10016-5990

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NOTICE

All Performance Test Codes must adhere to the requirements of ASME PTC 1, General Instructions. The following information is based on that document and is included here for emphasis and for the convenience of the user of the Supplement. It is expected that the Code user is fully cognizant of Sections 1 and 3 of ASME PTC 1 and has read them prior to applying this Supplement.

ASME Performance Test Codes provide test procedures that yield results of the highest level of accuracy consistent with the best engineering knowledge and practice currently available. They were developed by balanced committees representing all concerned interests and specify procedures, instrumentation, equipment-operating requirements, calculation methods, and uncertainty analysis.

When tests are run in accordance with a Code, the test results themselves, without adjustment for uncertainty, yield the best available indication of the actual performance of the tested equipment. ASME Performance Test Codes do not specify means to compare those results to contractual guarantees. Therefore, it is recommended that the parties to a commercial test agree before starting the test and preferably before signing the contract on the method to be used for comparing the test results to the contractual guarantees. It is beyond the scope of any Code to determine or interpret how such comparisons shall be made.

FOREWORD

This Instruments and Apparatus Supplement to The American Society of Mechanical Engineers (ASME) Performance Test Codes (PTC) 19 Series provides information on instrumentation and associated procedures for tests involving measurement of pressure. It is intended to promote results consistent with the best engineering knowledge and practice in industry.

The object and scope of any test should be agreed upon in writing by all parties to the test prior to the test.

ASME PTC 2, *Definitions and Values Code* and ASME PTC 19.1, *Test Uncertainty* may be especially useful references when using this Supplement.

The previous Supplement replaced an older version published in 1964. The previous edition was approved by the Board on Performance Test Codes on September 23, 1986, and adopted by the American National Standard Institute (ANSI) as an American National Standard on August 25, 1987.

Subsequent to the 1987 revision, the PTC 19.2 Committee was reactivated to work on the current revision. This revision uses updated pressure-measurement technologies. Obsolete or rarely used pressure-measuring devices were deleted, resulting in a substantially reduced number of pressure-measurement devices. Some of the less frequently used field devices, such as manometers and piston gauges, were moved to the two appendices.

This edition of PTC 19.2, *Pressure Measurement* was approved by the PTC Standards Committee on December 18, 2009, and approved and adopted as a Standard practice of the Society by action of the Board on Standardization and Testing on January 19, 2010. It was also approved as an American National Standard, by the ANSI Board of Standards Review, on April 22, 2010.

ACKNOWLEDGMENTS

The Committee gratefully acknowledges the contribution and leadership role of Charles Doran.

ASME PTC COMMITTEE
Performance Test Codes

(The following is the roster of the Committee at the time of approval of this Code.)

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CORRESPONDENCE WITH THE PTC 19.2 COMMITTEE

General. ASME Codes are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Code may interact with the Committee by requesting interpretations, proposing revisions, and attending Committee meetings. Correspondence should be addressed to

Secretary, PTC 19.2 Standards Committee
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990
http://go.asme.org/Inquiry

Proposing Revisions. Revisions are made periodically to the Supplement to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Supplement. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Supplement. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal including any pertinent documentation.

Proposing a Case. Cases may be issued for the purpose of providing alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME PTC Committee Web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the Code and the paragraph, figure, or table number(s), and be written as a Question and a Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable Code edition(s) to which the proposed Case applies.

Interpretations. Upon request, the PTC 19.2 Standards Committee will render an interpretation of any requirement of the Code. Interpretations can be rendered only in response to a written request sent to the Secretary of the PTC 19.2 Standards Committee.

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his request in the following format:

Subject:	Cite the applicable paragraph number(s) and the topic of the inquiry.
Edition:	Cite the applicable edition of the Supplement for which the interpretation is being requested.
Question:	Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format will be rewritten in this format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

Attending Committee Meetings. The PTC 19.2 Standards Committee holds meetings, which are open to the public. Persons wishing to attend any meeting or telephone conference should contact the Secretary of the PTC 19.2 Standards Committee.

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Section 1
Object and Scope

1-1 OBJECT

The object of this Supplement is to give instructions and guidance for the accurate determination of pressure values in support of the ASME Performance Test Codes. The choice of method, instruments, required calculations, and corrections to be applied depends on the purpose of the measurement, the allowable uncertainty, and the characteristics of the equipment being tested.

1-2 SCOPE

The methods for pressure measurement and the protocols used for data transmission are provided in this Supplement. Guidance is given for setting up the instrumentation and determining the uncertainty of the measurement. Information regarding the instrument type, design, applicable pressure range, accuracy, output, and relative cost is provided.

Information on pressure-measuring devices that are not normally used in field environments is given in the Nonmandatory Appendices A (Piston Gauges), B (Manometers), and C [Low-Absolute-Pressure (Vacuum) Instruments].

1-3 UNCERTAINTY

The methods provided in this Supplement are designed to assist in the evaluation of measurement uncertainty based on current technology and engineering knowledge, taking into account published instrumentation specifications and measurement and application techniques. This Supplement provides guidance in the use of methods to establish the pressure-measurement uncertainty.