Carbon Steel, Alloy Steel, Stainless Steel, and Nickel Base Alloy Castings for Use in the Petroleum and Natural Gas Industry

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1 Scope

This specification identifies requirements for the foundry qualification, production, design, marking and documentation of carbon steel, alloy steel, stainless steel, and nickel-base alloy castings used in the petroleum and natural gas industries when referenced by an applicable API product standard or otherwise specified as a requirement for compliance.

This specification applies to castings used in the manufacture of pressure containing, pressure-controlling, and primary load-bearing components. Castings manufactured in accordance with this API Standard may be produced using any industry standard casting method.

This specification provides manufacturers with a fixed methodology to examine a qualification casting and to compare the results of that examination to a defined set of acceptance criteria. The results of the qualification testing by material grouping are then used to establish a baseline Casting Specification Level (CSL) for subsequently produced castings.

This specification also provides manufacturers with a fixed production testing methodology to determine if subsequently produced castings conform to the minimum requirements for the intended CSL. The intent is that the production castings meet the minimum CSL requirements established during qualification testing by material grouping and/or the minimum CSL specified by the purchaser.

If product is supplied bearing the API Monogram and manufactured at a facility licensed by API, the requirements of Annex A apply.

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, except that new editions may be used on issue and shall become mandatory upon the effective date specified by the publisher or six months from the date of the revision (where no effective date is specified).

API Specification Q1, *Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry*

API Specification 6A, *Specification for Wellhead and Christmas Tree Equipment*

API Standard 20H, *Heat Treatment Services – Batch Type for Equipment Used in the Petroleum and Natural Gas Industry*

ANSI/NACE MR0175[1]/ISO 15156, *Materials for use in H2S-containing environments in oil and gas production*

ASME Boiler and Pressure Vessel Code (BPVC)[2], Section VIII, Division 1, *Pressure Vessels ASME Boiler and Pressure Vessel Code (BPVC), Section IX, Welding and Brazing Qualifications*

ASME Boiler and Pressure Vessel Code (BPVC), Section V, *Nondestructive Examination*

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[1] NACE International (formerly the National Association of Corrosion Engineers), 1440 South Creek Drive, Houston, Texas 77084-4906, www.nace.org.
[2] ASME International, 2 Park Avenue, New York, New York 10016-5990, www.asme.org.