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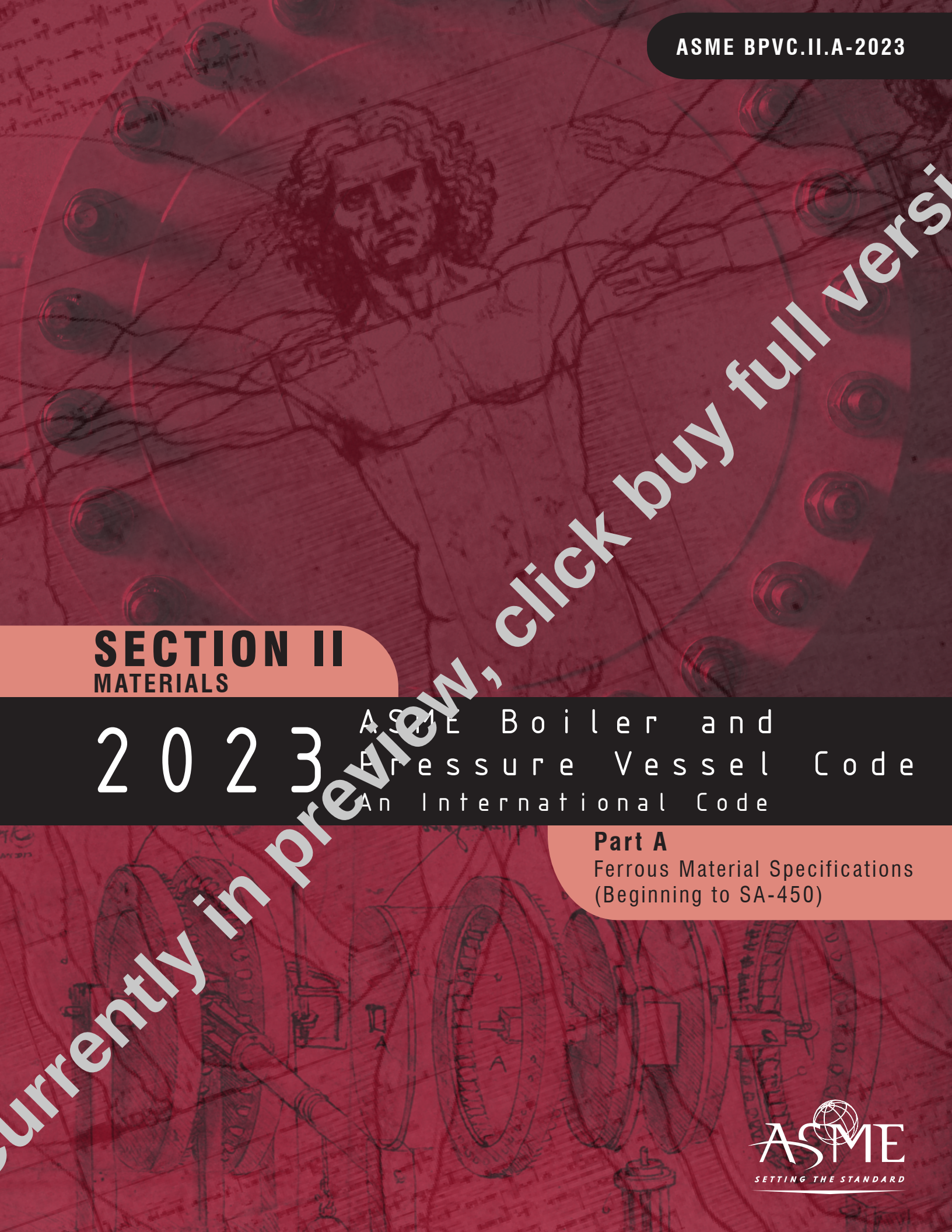

SECTION II
MATERIALS

2023 ASME Boiler and Pressure Vessel Code
An International Code

Part A
Ferrous Material Specifications
(Beginning to SA-450)

ASME
SETTING THE STANDARD

AN INTERNATIONAL CODE

2023 ASME Boiler & Pressure Vessel Code

2023 Edition July 1, 2023

II

MATERIALS

Part A

Ferrous Material Specifications (Beginning to SA-450)

ASME Boiler and Pressure Vessel Committee
on Materials

The American Society of Mechanical Engineers

Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: July 1, 2023

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ASME Collective Membership Mark

ASME Single Certification Mark

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FOREWORD[*]

In 1911, The American Society of Mechanical Engineers established the Boiler and Pressure Vessel Committee to formulate standard rules for the construction of steam boilers and other pressure vessels. In 2009, the Boiler and Pressure Vessel Committee was superseded by the following committees:

(a) Committee on Power Boilers (I)
(b) Committee on Materials (II)
(c) Committee on Construction of Nuclear Facility Components (III)
(d) Committee on Heating Boilers (IV)
(e) Committee on Nondestructive Examination (V)
(f) Committee on Pressure Vessels (VIII)
(g) Committee on Welding, Brazing, and Fusing (IX)
(h) Committee on Fiber-Reinforced Plastic Pressure Vessels (X)
(i) Committee on Nuclear Inservice Inspection (XI)
(j) Committee on Transport Tanks (XII)
(k) Committee on Overpressure Protection (XIII)
(l) Technical Oversight Management Committee (TOMC)

Where reference is made to "the Committee" in this Foreword, each of these committees is included individually and collectively.

The Committee's function is to establish rules of safety relating only to pressure integrity, which govern the construction[**] of boilers, pressure vessels, transport tanks, and nuclear components, and the inservice inspection of nuclear components and transport tanks. The Committee also interprets these rules when questions arise regarding their intent. The technical consistency of the Sections of the Code and coordination of standards development activities of the Committees is supported and guided by the Technical Oversight Management Committee. This Code does not address other safety issues relating to the construction of boilers, pressure vessels, transport tanks, or nuclear components, or the inservice inspection of nuclear components or transport tanks. Users of the Code should refer to the pertinent codes, standards, laws, regulations, or other relevant documents for safety issues other than those relating to pressure integrity. Except for Sections XI and XII, and with a few other exceptions, the rules do not, of practical necessity, reflect the likelihood and consequences of deterioration in service related to specific service fluids or external operating environments. In formulating the rules, the Committee considers the needs of users, manufacturers, and inspectors of pressure vessels. The objective of the rules is to afford reasonably certain protection of life and property, and to provide a margin for deterioration in service to give a reasonably long, safe period of usefulness. Advancements in design and materials and evidence of experience have been recognized.

This Code contains mandatory requirements, specific prohibitions, and nonmandatory guidance for construction activities and inservice inspection and testing activities. The Code does not address all aspects of these activities and those aspects that are not specifically addressed should not be considered prohibited. The Code is not a handbook and cannot replace education, experience, and the use of engineering judgment. The phrase *engineering judgment* refers to technical judgments made by knowledgeable engineers experienced in the application of the Code. Engineering judgments must be consistent with Code philosophy, and such judgments must never be used to overrule mandatory requirements or specific prohibitions of the Code.

The Committee recognizes that tools and techniques used for design and analysis change as technology progresses and expects engineers to use good judgment in the application of these tools. The designer is responsible for complying with Code rules and demonstrating compliance with Code equations when such equations are mandatory. The Code neither requires nor prohibits the use of computers for the design or analysis of components constructed to the

[*] The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. Therefore, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Code.

[**] *Construction*, as used in this Foreword, is an all-inclusive term comprising materials, design, fabrication, examination, inspection, testing, certification, and overpressure protection.

requirements of the Code. However, designers and engineers using computer programs for design or analysis are cautioned that they are responsible for all technical assumptions inherent in the programs they use and the application of these programs to their design.

The rules established by the Committee are not to be interpreted as approving, recommending, or endorsing any proprietary or specific design, or as limiting in any way the manufacturer's freedom to choose any method of design or any form of construction that conforms to the Code rules.

The Committee meets regularly to consider revisions of the rules, new rules as dictated by technological development, Code Cases, and requests for interpretations. Only the Committee has the authority to provide official interpretations of this Code. Requests for revisions, new rules, Code Cases, or interpretations shall be addressed to the Secretary in writing and shall give full particulars in order to receive consideration and action (see Submittal of Technical Inquiries to the Boiler and Pressure Vessel Standards Committees). Proposed revisions to the Code resulting from inquiries will be presented to the Committee for appropriate action. The action of the Committee becomes effective only after confirmation by ballot of the Committee and approval by ASME. Proposed revisions to the Code approved by the Committee are submitted to the American National Standards Institute (ANSI) and published at http://go.asme.org/BPVCPublicReview to invite comments from all interested persons. After public review and final approval by ASME, revisions are published at regular intervals in Editions of the Code.

The Committee does not rule on whether a component shall or shall not be constructed to the provisions of the Code. The scope of each Section has been established to identify the components and parameters considered by the Committee in formulating the Code rules.

Questions or issues regarding compliance of a specific component with the Code rules are to be directed to the ASME Certificate Holder (Manufacturer). Inquiries concerning the interpretation of the Code are to be directed to the Committee. ASME is to be notified should questions arise concerning improper use of the ASME Single Certification Mark.

When required by context in this Section, the singular shall be interpreted as the plural, and vice versa, and the feminine, masculine, or neuter gender shall be treated as such other gender as appropriate.

The words "shall," "should," and "may" are used in this Standard as follows:

- *Shall* is used to denote a requirement.
- *Should* is used to denote a recommendation.
- *May* is used to denote permission, neither a requirement nor a recommendation.

STATEMENT OF POLICY ON THE USE OF THE ASME SINGLE CERTIFICATION MARK AND CODE AUTHORIZATION IN ADVERTISING

ASME has established procedures to authorize qualified organizations to perform various activities in accordance with the requirements of the ASME Boiler and Pressure Vessel Code. It is the aim of the Society to provide recognition of organizations so authorized. An organization holding authorization to perform various activities in accordance with the requirements of the Code may state this capability in its advertising literature.

Organizations that are authorized to use the ASME Single Certification Mark for marking items or constructions that have been constructed and inspected in compliance with the ASME Boiler and Pressure Vessel Code are issued Certificates of Authorization. It is the aim of the Society to maintain the standing of the ASME Single Certification Mark for the benefit of the users, the enforcement jurisdictions, and the holders of the ASME Single Certification Mark who comply with all requirements.

Based on these objectives, the following policy has been established on the usage in advertising of facsimiles of the ASME Single Certification Mark, Certificates of Authorization, and reference to Code construction. The American Society of Mechanical Engineers does not "approve," "certify," "rate," or "endorse" any item, construction, or activity and there shall be no statements or implications that might so indicate. An organization holding the ASME Single Certification Mark and/or a Certificate of Authorization may state in advertising literature that items, constructions, or activities "are built (produced or performed) or activities conducted in accordance with the requirements of the ASME Boiler and Pressure Vessel Code," or "meet the requirements of the ASME Boiler and Pressure Vessel Code." An ASME corporate logo shall not be used by any organization other than ASME.

The ASME Single Certification Mark shall be used only for stamping and nameplates as specifically provided in the Code. However, facsimiles may be used for the purpose of fostering the use of such construction. Such usage may be by an association or a society, or by a holder of the ASME Single Certification Mark who may also use the facsimile in advertising to show that clearly specified items will carry the ASME Single Certification Mark.

STATEMENT OF POLICY ON THE USE OF ASME MARKING TO IDENTIFY MANUFACTURED ITEMS

The ASME Boiler and Pressure Vessel Code provides rules for the construction of boilers, pressure vessels, and nuclear components. This includes requirements for materials, design, fabrication, examination, inspection, and stamping. Items constructed in accordance with all of the applicable rules of the Code are identified with the ASME Single Certification Mark described in the governing Section of the Code.

Markings such as "ASME," "ASME Standard," or any other marking including "ASME" or the ASME Single Certification Mark shall not be used on any item that is not constructed in accordance with all of the applicable requirements of the Code.

Items shall not be described on ASME Data Report Forms nor on similar forms referring to ASME that tend to imply that all Code requirements have been met when, in fact, they have not been. Data Report Forms covering items not fully complying with ASME requirements should not refer to ASME or they should clearly identify all exceptions to the ASME requirements.

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CORRESPONDENCE WITH THE COMMITTEE

General

ASME codes and standards are developed and maintained by committees with the intent to represent the consensus of concerned interests. Users of ASME codes and standards may correspond with the committees to propose revisions or cases, report errata, or request interpretations. Correspondence for this Section of the ASME Boiler and Pressure Vessel Code (BPVC) should be sent to the staff secretary noted on the Section's committee web page, accessible at https://go.asme.org/CSCommittees.

NOTE: See ASME BPVC Section II, Part D for guidelines on requesting approval of new materials. See Section II, Part C for guidelines on requesting approval of new welding and brazing materials ("consumables").

Revisions and Errata

The committee processes revisions to this Code on a continuous basis to incorporate changes that appear necessary or desirable as demonstrated by the experience gained from the application of the Code. Approved revisions will be published in the next edition of the Code.

In addition, the committee may post errata and Special Notices at http://go.asme.org/BPVCerrata. Errata and Special Notices become effective on the date posted. Users can register on the committee web page to receive e-mail notifications of posted errata and Special Notices.

This Code is always open for comment, and the committee welcomes proposals for revisions. 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 background information and supporting documentation.

Cases

(a) The most common applications for cases are

(1) to permit early implementation of a revision based on an urgent need

(2) to provide alternative requirements

(3) to allow users to gain experience with alternative or potential additional requirements prior to incorporation directly into the Code

(4) to permit use of a new material or process

(b) Users are cautioned that not all jurisdictions or owners automatically accept cases. Cases are not to be considered as approving, recommending, certifying, or endorsing any proprietary or specific design, or as limiting in any way the freedom of manufacturers, constructors, or owners to choose any method of design or any form of construction that conforms to the Code.

(c) The committee will consider proposed cases concerning the following topics only:

(1) equipment to be marked with the ASME Single Certification Mark, or

(2) equipment to be constructed as a repair/replacement activity under the requirements of Section XI

(d) A proposed case shall be written as a question and reply in the same format as existing cases. The proposal shall also include the following information:

(1) a statement of need and background information

(2) the urgency of the case (e.g., the case concerns a project that is underway or imminent)

(3) the Code Section and the paragraph, figure, or table number(s) to which the proposed case applies

(4) the edition(s) of the Code to which the proposed case applies

(e) A case is effective for use when the public review process has been completed and it is approved by the cognizant supervisory board. Cases that have been approved will appear in the next edition or supplement of the Code Cases books, "Boilers and Pressure Vessels" or "Nuclear Components." Each Code Cases book is updated with seven Supplements. Supplements will be sent or made available automatically to the purchasers of the Code Cases books until the next edition of the Code. Annulments of Code Cases become effective six months after the first announcement of the annulment in a Code Case Supplement or Edition of the appropriate Code Case book. The status of any case is available at http://go.asme.org/BPVCCDatabase. An index of the complete list of Boiler and Pressure Vessel Code Cases and Nuclear Code Cases is available at http://go.asme.org/BPVCC.

Interpretations

(a) Interpretations clarify existing Code requirements and are written as a question and reply. Interpretations do not introduce new requirements. If a revision to resolve conflicting or incorrect wording is required to support the interpretation, the committee will issue an intent interpretation in parallel with a revision to the Code.

(b) Upon request, the committee will render an interpretation of any requirement of the Code. An interpretation can be rendered only in response to a request submitted through the online Interpretation Submittal Form at http://go.asme.org/InterpretationRequest. Upon submitting the form, the inquirer will receive an automatic e-mail confirming receipt.

(c) ASME does not act as a consultant for specific engineering problems or for the general application or understanding of the Code requirements. If, based on the information submitted, it is the opinion of the committee that the inquirer should seek assistance, the request will be returned with the recommendation that such assistance be obtained. Inquirers may track the status of their requests at http://go.asme.org/Interpretations.

(d) 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 or subcommittee. ASME does not “approve,” “certify,” “rate,” or “endorse” any item, construction, proprietary device, or activity.

(e) Interpretations are published in the ASME Interpretations Database at http://go.asme.org/Interpretations as they are issued.

Committee Meetings

The ASME BPVC committees regularly hold meetings that are open to the public. Persons wishing to attend any meeting should contact the secretary of the applicable committee. Information on future committee meetings can be found at http://go.asme.org/BCW.

PREFACE

The American Society of Mechanical Engineers (ASME) and the American Society for Testing and Materials (ASTM) have cooperated for more than fifty years in the preparation of material specifications adequate for safety in the field of pressure equipment for ferrous and nonferrous materials, contained in Section II (Part A — Ferrous and Part B — Nonferrous) of the ASME Boiler and Pressure Vessel Code.

The evolution of this cooperative effort is contained in Professor A. M. Greene's "History of the ASME Boiler Code," which was published as a series of articles in *Mechanical Engineering* from July 1952 through August 1953 and is now available from ASME in a special bound edition. The following quotations from this history, which was based upon the minutes of the ASME Boiler and Pressure Vessel Committee, will help focus on the cooperative nature of the specifications found in Section II, Material Specifications.

"General discussion of material specifications comprising Paragraphs 1 to 112 of Part 2 and the advisability of having them agree with ASTM specifications," (1914).

"ASME Subcommittee appointed to confer with ASTM," (1916).

"Because of this cooperation the specifications of the 1918 Edition of the ASME Boiler Code were more nearly in agreement with ASTM specifications. In the 1924 Edition of the Code, 10 specifications were in complete agreement with ASTM specifications, 4 in substantial agreement and 2 covered materials for which ASTM had no corresponding specifications."

"In Section II, Material Specifications, the paragraphs were given new numbers beginning with S-1 and extending to S-213," (1925).

"Section II was brought into agreement with changes made in the latest ASTM specifications since 1921," (1932).

"The Subcommittee on Material Specifications arranged for the introduction of the revisions of many of the specifications so that they would agree with the latest form of the earlier ASTM specifications...," (1935).

From the preceding, it is evident that many of the material specifications were prepared by the Boiler and Pressure Vessel Code Committees, then subsequently, by cooperative action, modified and identified as ASTM specifications. Section II, Parts A and B, currently contain many material specifications that are identical with the corresponding ASTM specifications and some that have been modified for Code usage. Many of these specifications are published in dual format. That is, they contain both U.S. Customary units and SI units. The metrication protocols followed in the specifications are those adopted by ASTM, and are usually to the rules of IEEE/ASTM SI 10-1997, Standard for the Use of the International System of Units (SI): The Modern Metric System.

In 1969, the American Welding Society began publication of specifications for welding rods, electrodes, and filler metals, hitherto issued by ASTM. The Boiler and Pressure Vessel Committee has recognized this new arrangement, and is now working with AWS on these specifications. Section II, Part C, contains the welding material specifications approved for Code use.

In 1992, the ASME Board of Pressure Technology Codes and Standards endorsed the use of non-ASTM material for Boiler and Pressure Vessel Code applications. It is the intent to follow the procedures and practices currently in use to implement the adoption of non-ASTM materials.

All identical specifications are indicated by the ASME/originating organization symbols. The specifications prepared and copyrighted by ASTM, AWS, and other originating organizations are reproduced in the Code with the permission of the respective Society. The ASME Boiler and Pressure Vessel Committee has given careful consideration to each new and revised specification, and has made such changes as they deemed necessary to make the specification adaptable for Code usage. In addition, ASME has furnished ASTM with the basic requirements that should govern many proposed new specifications. Joint action will continue an effort to make the ASTM, AWS, and ASME specifications identical.

To assure that there will be a clear understanding on the part of the users of Section II, ASME publishes both the identical specifications and those amended for Code usage every 2 years.

The ASME Boiler and Pressure Vessel Code has been adopted into law by 50 states and many municipalities in the United States and by all of the Canadian provinces.

SPECIFICATIONS LISTED BY MATERIALS

Corrosion-Resisting and Heat-Resisting Steels

Methods

Steel Bars

Steel Billets and Forgings

Steel Bolting Materials

Steel Castings

Steel Flanges, Fittings, Valves, and Parts

Steel Pipe

Steel Plate, Sheet, and Strip

Steel Plates, Sheets, and Strip for Pressure Vessels

Steel Tubes

Structural Steel

Wrought Iron, Cast Iron, and Malleable Iron

SPECIFICATION REMOVAL (23)

From time to time, it becomes necessary to remove specifications from this Part of Section II. This occurs because the sponsoring society (e.g., ASTM, AWS, CEN) has notified ASME that the specification has either been replaced with another specification, or that there is no known use and production of a material. Removal of a specification from this Section also results in concurrent removal of the same specification from Section IX and from all of the ASME Boiler and Pressure Vessel Construction Codes that reference the material. This action effectively prohibits further use of the material in ASME Boiler and Pressure Vessel construction.

The following specifications will be dropped from this Section in the next Edition, unless information concerning current production and use of the material is received before December 1 of this year:

SA-557
SA-731 (withdrawn by ASTM; see SA-268/SA-268M)

If you are currently using and purchasing new material to this specification for ASME Boiler and Pressure Vessel Code construction, and if discontinuance of this specification would present a hardship, please notify the Secretary of the ASME Boiler and Pressure Vessel Committee, at the address shown below:

Secretary
ASME Boiler and Pressure Vessel Committee
Two Park Avenue
New York, NY 10016-5990

SUMMARY OF CHANGES

Changes listed below are identified on the pages by a margin note, **(23)**, placed next to the affected area.

Page	*Location*	*Change*
xi	List of Sections	*(1)* Under Section III, Division 4 added *(2)* Title of Section XI and subtitle of Section XI, Division 2 revised *(3)* Information on interpretations and Code cases moved to "Correspondence With the Committee"
xv	Personnel	Updated
xxxvii	ASTM Personnel	Updated
xxxviii	Correspondence With the Committee	Added (replaces "Submittal of Technical Inquiries to the Boiler and Pressure Vessel Standards Committees")
xlix	Specification Removal	Updated
liii	Cross-Referencing in the ASME BPVC	Updated
1	Statement of Policy on the Use of ASME Material Specifications	Added
3	SA-6/SA-6M	Revised in its entirety
67	SA-20/SA-20M	Revised in its entirety
101	SA-29/SA-29M	Revised in its entirety
125	SA-36/SA-36M	Revised in its entirety
139	SA-53/SA-53M	Revised in its entirety
163	SA-105/SA-105M	Revised in its entirety
169	SA-106/SA-106M	Revised in its entirety
201	SA-179/SA-179M	Revised in its entirety
211	SA-182/SA-182M	Revised in its entirety
229	SA-192/SA-192M	Revised in its entirety
233	SA-193/SA-193M	Revised in its entirety
247	SA-194/SA-194M	Revised in its entirety
279	SA-213/SA-213M	Revised in its entirety
295	SA-214/SA-214M	Revised in its entirety
355	SA-249/SA-249M	Revised in its entirety
393	SA-266/SA-266M	Revised in its entirety
399	SA-268/SA-268M	Revised in its entirety
407	SA-276/SA-276M	Revised in its entirety
423	SA-283/SA-283M	Revised in its entirety
465	SA-320/SA-320M	Revised in its entirety

Page	*Location*	*Change*
539	SA-351/SA-351M	Revised in its entirety
565	SA-358/SA-358M	Revised in its entirety
581	SA-370	Revised in its entirety
631	SA-372/SA-372M	Revised in its entirety
637	SA-376/SA-376M	Revised in its entirety
665	SA-401/SA-401M	Added
671	SA-403/SA-403M	Revised in its entirety
683	SA-409/SA-409M	Revised in its entirety
691	SA-414/SA-414M	Revised in its entirety
705	SA-423/SA-423M	Revised in its entirety
715	SA-437/SA-437M	Revised in its entirety
719	SA-439/SA-439M	Added
735	SA-450/SA-450M	Revised in its entirety
753	SA-453/SA-453M	Revised in its entirety
773	SA-479/SA-479M	Revised in its entirety
809	SA-484/SA-484M	Revised in its entirety
823	SA-487/SA-487M	Revised in its entirety
831	SA-508/SA-508M	Revised in its entirety
885	SA-524/SA-524M	Revised in its entirety
893	SA-530/SA-530M	Revised in its entirety
911	SA-540/SA-540M	Revised in its entirety
929	SA-542/SA-542M	Revised in its entirety
951	SA-557/SA-557M	Deleted
1017	SA-572/SA-572M	Revised in its entirety
1075	SA-656/SA-656M	Revised in its entirety
1137	SA-691/SA-691M	Revised in its entirety
1159	SA-703/SA-703M	Revised in its entirety
1195	SA-727/SA-727M	Revised in its entirety
1201	SA-731/SA-731M	Deleted
1211	SA-738/SA-738M	Revised in its entirety
1243	SA-751	Revised in its entirety
1319	SA-813/SA-813M	Revised in its entirety
1329	SA-814/SA-814M	Revised in its entirety
1357	SA-836/SA-836M	Revised in its entirety
1381	SA-941	Revised in its entirety
1391	SA-960/SA-960M	Revised in its entirety

Page	*Location*	*Change*
1403	SA-961/SA-961M	Revised in its entirety
1413	SA-962/SA-962M	Revised in its entirety
1427	SA-965/SA-965M	Revised in its entirety
1481	SA-995/SA-995M	Revised in its entirety
1539	SA-1058	Added
1565	SA/CSA-G40.21	Revised in its entirety
1567	SA/EN 10025-2	Revised in its entirety
1571	SA/EN 10028-2	Revised
1575	SA/EN 10028-3	Revised
1577	SA/EN 10028-4	Revised
1593	SA/EN 10222-2	Revised
1597	SA/IS 2062	Revised in its entirety
1599	SA/JIS G3118	Revised in its entirety
1608	Mandatory Appendix II	Revised in its entirety
1610	Table II-200-1	Updated
1619	Table II-200-2	Updated

CROSS-REFERENCING IN THE ASME BPVC (23)

Paragraphs within the ASME BPVC may include subparagraph breakdowns, i.e., nested lists. The following is a guide to the designation and cross-referencing of subparagraph breakdowns:

(a) Hierarchy of Subparagraph Breakdowns

(1) First-level breakdowns are designated as (a), (b), (c), etc.

(2) Second-level breakdowns are designated as (1), (2), (3), etc.

(3) Third-level breakdowns are designated as (-a), (-b), (-c), etc.

(4) Fourth-level breakdowns are designated as (-1), (-2), (-3), etc.

(5) Fifth-level breakdowns are designated as (+a), (+b), (+c), etc.

(6) Sixth-level breakdowns are designated as (+1), (+2), etc.

(b) Cross-References to Subparagraph Breakdowns. Cross-references within an alphanumerically designated paragraph (e.g., PG-1, UIG-56.1, NCD-3223) do not include the alphanumerical designator of that paragraph. The cross-references to subparagraph breakdowns follow the hierarchy of the designators under which the breakdown appears. The following examples show the format:

(1) If X.1(c)(1)(-a) is referenced in X.1(c)(1), it will be referenced as (-a).

(2) If X.1(c)(1)(-a) is referenced in X.1(c)(2), it will be referenced as (1)(-a).

(3) If X.1(c)(1)(-a) is referenced in X.1(e)(1), it will be referenced as (c)(1)(-a).

(4) If X.1(c)(1)(-a) is referenced in X.2(c)(2), it will be referenced as X.1(c)(1)(-a).

STATEMENT OF POLICY ON THE USE OF ASME MATERIAL SPECIFICATIONS (23)

The material specifications in Section II, Part A or Section II, Part B shall be used when ordering, producing, and certifying materials for ASME BPV Code construction. The use of a specification not in Section II, Part A or Section II, Part B is acceptable only when it is referenced in an approved Code Case.

A complete list of ASME material specifications can be found in Mandatory Appendix II, Tables II-200-1 and II-200-2. Since the framework of ASME material specifications does not originate with the Section II committee (see Mandatory Appendix II, II-100 for more information), the following information is provided to assist the user in understanding and applying the specifications:

(a) Scope. Some specifications contain a statement in the Scope about the uses or service temperatures for alloys within. Such statements are to be viewed as guidance in the corresponding ASME material specification. Alloys approved for ASME BPV Code construction are restricted by maximum design temperatures stipulated in Section II, Part D, and any stipulations of the individual construction Codes.

(b) Units. Specifications often designate one unit (SI or Customary) as the standard for the specification with conversions of the other being cited as for information only. Compliance and acceptance for the purposes of Code usage is not governed by this. Section II, Part D has a U.S. Customary volume and an SI volume for mechanical and physical properties of all materials approved for Code construction.

(c) References. References to other material specifications within the text often carry the original title given to it by the parent organization. The following are two examples:

(1) From 2021 Edition of Section II, Part A, SA-203

4.1 Steelmaking Practice — The steel shall be killed and shall conform to the fine grain size requirement of Specification A20/A20M.

(2) From 2021 Edition of Section II, Part B, SB-98/SB-98M

9.1 Refer to the appropriate paragraphs in Specification B249/B249M with particular reference to the following tables.

Such references shall be interpreted as referring to the corresponding ASME material specification. If no corresponding ASME specification exists, then the user is bound to the latest revision of the cited specification.

(d) Ordering Information. The Ordering Information section of some specifications state that furnishing test reports and certification is optional. This is not valid for ASME BPVC. When alloys are purchased for use in ASME construction, test reports and certifications shall be furnished to the purchaser.

(e) Individual Alloys. To be used for Code construction, any alloy listed in an ASME material specification shall also have either allowable stress values or mechanical properties listed in either a Section II, Part D table or a Code Case.

Material produced to an acceptable material specification is not limited to country of origin. Before the material is ordered, it is the responsibility of the user to ensure that the intended construction Code permits materials certified to the desired specification.

With the exception of ASTM International, ASME has not entered into copyright agreements with publishers of material specifications. Limits on usage appear on the specification's cover sheets. For sources from which an official English-language version of a specification can be purchased, see Nonmandatory Appendix A.