

An increasing number of ASME Certificate Holders have expressed the desire to be able to use a single design standard for all pressure equipment, regardless of whether it is destined for the US, Europe, or anywhere around the world. Some of our efforts to allow the ASME Boiler and Pressure Vessel Code to fulfill that goal are described in this issue of *The Mark*.

The difficulty in using local materials to comply with The Code had once been an impediment to its use outside of North America – that has changed with the ability to adopt international specifications (see page 4). The lead article also describes the initiative we are taking to avoid having the European Community's Pressure Equipment Directive create other constraints in the choice of materials. Future additions of The Mark will provide information on other activities, such as a comparison of Section VIII, Division 1 with the essential safety requirements of the PED.

As always, ASME looks for your input on these and other developments in order to guide the work being done in the direction that best suits its certificate holders.

David Wizda, Managing Director,
Conformity Assessment
wizdad@asme.org
1-212-591-8590

CONTENTS

Approval of Materials.....	1
Ron Berberich Retires.....	4
Certification of NDT Personnel....	4
Adjusting the Boiler Code.....	4
ASME Conformity Assessment Programs.....	5

Approval of Materials for Use Under the EC Pressure Equipment Directive

In the last issue of *The Mark*, there was an introductory article on the EC Pressure Equipment Directive (PED). From the responses we received on that article, it is clear that one of the most critical aspects of compliance with the PED is that of approval of materials. Ideally, manufacturers would be able to use the same materials to comply with both the PED and the ASME Code. This can be accomplished in two ways: by having European materials approved for use in the ASME Code; or by having ASME materials accepted under the PED. The following provides an update on the work being done to assist ASME Certificate Holders in this area.

There are three different methods for gaining approval for the use of a material in the construction of pressure equipment under the PED. The first is the concept of presumption of conformity, which is bestowed upon EuroNorms (standards) that comply with the required template of the PED. Another method for approval of materials is particular material approval. This is the process by which a manufacturer works with a Notified Body to gain approval of a material by demonstrating that it meets the essential requirements for materials under the PED. The use of materials approved in this manner is

limited to a single application by a single manufacturer. The third process is European Approval of Materials (EAM). Once a material is approved under the EAM process, it may be used by any pressure equipment manufacturer for construction under the PED.

Presumption of Conformity for EuroNorms

There is an extensive effort underway within the European Committee for Standardization (CEN) to identify those EN material specifications currently used for pressure equipment that contain all the essential requirements of the PED, and to revise those that do not. EuroNorms that have been identified as having a presumption of conformity are also eligible for adoption by the ASME Boiler and Pressure Vessel Committee for use in construction under the ASME Boiler and Pressure Vessel Code. Any manufacturer who wishes to use an EN material would need to submit a request to the Boiler and Pressure Vessel Committee. See the companion article, "Adoption of International Material Specifications in the ASME Boiler and Pressure Vessel Code" in this issue of *The Mark* for more information.

Particular Material Approval
Particular material approval provides an avenue for ASME Certificate

Holder to use the ASME Boiler and Pressure Vessel Code as the basis for compliance with the PED. Although manufacturers could use this method for approval of any material they want to use, it could be quite cumbersome. Because this method only applies to a particular material for a single application, the approval process would have to be repeated for each material

and product produced. There is an advantage to this process, and that lies in the similarities of ASME and EN materials. One Notified Body has identified a list of ASME material specifications and grades that could be harmonized with EN material specifications and grades. This list of ASME material specifications and grades is shown in Table 1 of this article. The harmoniza-

tion process would involve a manufacturer demonstrating to a Notified Body that an ASME material specification is equivalent to a corresponding EN material specification that has been accepted under the presumption of conformity process. This administrative process should be relatively simple and could easily be repeated for each application.

Table 1

LIST OF MATERIALS THAT ARE CANDIDATES FOR HARMONIZATION WITH EN NORMS

SA-515 Gr 60	SA-240 TYPE 348 H	SA-312 TYPE 321	SA-182 Gr F22	SA-352 Gr LC 3
SA-515 Gr 65	SA-240 TYPE 309 S	SA-312 TYPE 321 H	CDA 613 CA 636	SA-352 Gr LC 1
SA-515 Gr 70	SA-240 TYPE 309 H	SA-312 TYPE 347	SA-182 Gr F51	SA-352 Gr LC 2
SA-240 TYPE 304	SA-240 TYPE 310 S	SA-312 TYPE 347H	SA-182 Gr F304	SA-351 Gr CF3
SA-240 TYPE 316	SA-240 TYPE 310 H	SA-312 TYPE 316 T1	SA-182 Gr F316	SA-351 Gr CF8
SA-240 TYPE 316L	SA-240 TYPE S 31254	SA-312 TYPE 348	SA-182 Gr F321	SA-351 Gr CF8M
SA-240 TYPE 304L	SA-240 TYPE S 31803	SA-312 TYPE 348 H	SA-182 Gr F321H	SA-351 Gr CF8C
SA-240 TYPE 304H	SA-240 TYPE S 32750	SA-312 TYPE 309 S	SA-182 Gr F347	SA-494 Gr CY 40
SA-240 TYPE 316H	API 5L GrB	SA-312 TYPE 309 H	SA-182 Gr F5	SA-744 Gr CN 7 M
SA-240 TYPE 317	SA-312 TYPE 304	SA-312 TYPE 310 S	SA-182 Gr F6	SA-216 Gr G5
SA-240 TYPE 321	SA-312 TYPE 316	SA-312 TYPE 310 H	SA-182 Gr F1	SA-216 GrW 69
SA-240 TYPE 321 H	SA-312 TYPE 316L	SA-105	SA-182 Gr F2	SA-395
SA-240 TYPE 347	SA-312 TYPE 304L	SA-350 Gr LF2	SA-182 Gr F5A	SA-395 Gr M
SA-240 TYPE 347 H	SA-312 TYPE 304H	SA-350 Gr LF3	SA-182 Gr F12	SA-48 Gr 35 A
SA-240 TYPE 316 TI	SA-312 TYPE 316H	SA-182 Gr F316L	SA-182 Gr F7	SA-48 Fr 35 B
SA-240 TYPE 348	SA-312 TYPE 317	SA-182 Gr F304L	SA-564 Gr 630	SA-48 Gr 35 C

Table 2

PARTIAL LIST OF ASME MATERIALS BEING SUBMITTED FOR EUROPEAN APPROVAL OF MATERIALS

SA-516 Gr 60	SA-217 Gr C12	SB-166 No 6600	SA-320 Gr B8M c12	SA-479 Gr S32750
SA-516 Gr 70	SA-351 Gr CN 7 M	SB-408 No 6800	SA-536 Gr 60	SA-479 Gr 431
SA-333 Gr 6	SA-351 Gr CF 10 M	SB-408 No 8800	SA-536 Gr 40	SA-479 Gr S31803
SA-106 GrB	SA-351 Gr CK3M CuN	SB-160 No 2200	SA-536 Gr 18	SA-479 Gr 347H
SA-350 Gr LF1	SA-351 Gr CK3M	SB-160 No 2201	SA-217 Gr C 5	SA-479 Gr 348
SA-182 Gr F44	WCuN	SB-574 No 10276	SA-217 Gr WC 6	SA-479 Gr 348H
SA-182 Gr F316H	SA-494 Gr CW 2 M	SB-164 No 4400	SA-217 Gr WC 5	SA-479 Gr 310S
SA-182 Gr F6A	SA-494 Gr N 12 MV	MONEL 800	SA-217 Gr WC 9	SA-479 Gr 310H
SA-182 Gr F9	SA-494 Gr N 7M	SA-479 Gr 316H	SA-217 Gr WC 1	SA-193 Gr B7M
SB-649 No 8904	SA-494 Gr CX 2MW	SA-193 Gr B7	SA-217 Gr WC 4	SA-193 Gr B8
SB-564 No 6600	SA-494 Gr CW 12 MW	SA-193 Gr B16	SA-479 Gr 304	SA-193 Gr B8 cl1
SB-564 No 10276	SA-494 Gr CW 6 MC	SA-193 Gr B8M	SA-479 Gr 304L	SA-193 Gr B8 cl2
SB-564 No 8800	SA-494 Gr CU 5 MC UC	SA-193 Gr B8M cl1	SA-479 Gr 304H	SA-194 Gr 2HM
SB-564 No 8810	SB-148 UNSC 95800	SA-193 Gr B8M cl2	SA-479 Gr 316	SA-194 Gr 8
SB-564 No 4400	SA-216 Gr WCC	SA-194 Gr 2H	SA-479 Gr 316L	SA-320 Gr L7M
SB-462 No 8020	SA-216 Gr WCB	SA-194 Gr 4	SA-479 Gr 321	SA-320 Gr B8 m
SA-182 Gr F304 H	SA-352 Gr LCB	SA-194 Gr 8M	SA-479 Gr 321H	SA-320 Gr B8 cl1
SA-351 Gr CD4 MCU	SA-352 Gr LCC	SA-320 Gr L7	SA-479 Gr 316TI	SA-320 Gr B8 cl2
SA-494 Gr M 35-1	SA-351 Gr CF3M	SA-320 Gr B8M	SA-479 Gr 347	
SA-217 Gr CA 15	MONEL 400	SA-320 Gr B8M cl1	SA-479 Gr S32550	

European Approval of Materials

In the EAM process, a material manufacturer or a pressure equipment manufacturer submits a material specification to a Notified Body for approval by the European Commission. The biggest advantage of this process is that once a material is approved and published in the Official Journal of the European Commission, that material can be used by any manufacturer in the construction of equipment under the PED. One significant disadvantage is the amount of time it takes to process the approval.

There are two separate comment periods and the total time involved could be as much as four to six months. With that in mind, one Notified Body has begun to take steps to submit a list of ASME material specifications and grades for EAM (see Table 2). This list represents many of the materials most commonly used by ASME Certificate Holders, some of which cannot be easily harmonized as described under the particular material approval process above. Data sheets for each material listed in Table 2 have been drafted and

the submittal process has begun.

Additional Information

Taking advantage of these opportunities requires the Certificate Holder to initiate the action. ASME stands ready to assist in gaining approval of materials under the PED. For more information, please contact Mark Sheehan, Director, ASME Pressure Technology Codes and Standards (Tel. 1-212-591-8530, Fax 1-212-591-8501, Email sheehanm@asme.org). ■

Table 3
PHYSICAL PROPERTIES DATA

Item	Description
Type of material	Ferrous or nonferrous
Application	Product forms, size range, and specification
Range of temperature application	Maximum and minimum
Mechanical property data	Ultimate tensile strength, yield strength, reduction of area, and elongation at 100F or 50C intervals, from room temperature to 100F or 50C above the maximum intended use temperature for three heats of appropriate product forms and sizes
Time-dependent property data for base metal, weld metal, and weldments	Must be submitted if the requested temperatures of coverage are above those at which time-dependent properties begin to govern design values
Mechanical property data below room temperature	Must be submitted if the coverage is below room temperature is requested, the appropriate
Toughness considerations required by the construction Code	Must be defined and the appropriate data submitted
External pressure considerations	Must be defined and stress-strain curves submitted for the establishment of external pressure charts.
Cyclic service considerations and service limits	Must be defined and the appropriate fatigue data submitted
Physical property data	Coefficient of thermal expansion, thermal conductivity, thermal diffusivity, Young's modulus, shear modulus, Poisson's ratio
Welding requirements	Must be defined and procedure qualification test data submitted
Fabrication practices	Influence of fabrication practices on material properties

Adjusting the Boiler Code

by *Domenic A. Canonico*

Domenic A. Canonico is the Chair of the Main Committee for the ASME Boiler and Pressure Vessel Code. He is also the 1999 recipient of ASME's Melvin R. Green Codes and Standards Medal.

A recent change in the ASME Boiler and Pressure Vessel Code has lowered the material design factor that is used in calculating allowable stress values under the Code's Section I (power boilers) and Section VIII Division 1 (pressure vessels).

The new figure, found in the 1999 Addenda to the 1998 Edition of the Code issued on July 1, 1999, contains allowable stress values based on a material design factor of 3.5, rather than 4 (the figure in use for more than a half-century). *[For the complete text of this article please refer to the February 2000 issue of Mechanical Engineering magazine which is available on ASME's website at www.asme.org].*



Ron Berberich during one of his final weeks at ASME.

Ron Berberich Retires

Ron Berberich, staff member of ASME International for over 47 years, retired in December.

Berberich, manager of the Boiler and Pressure Vessel Accreditation department for Codes and Standards when he retired, started his tenure with ASME on Sept. 2, 1952.

His work with Codes and Standards is what he has valued most professionally. In his last position, Berberich read

scores of daily reports on companies that hold ASME Boiler and Pressure Vessel certificates.

"Ron became an expert in Boiler and Pressure Vessel accreditation," said June Ling, associate executive director of Codes and Standards. His work has been an important part of what ASME does. "He's a wonderful example of how a person can come to ASME and grow," Ling said.

Adoption of International Material Specifications in the ASME Boiler and Pressure Vessel Code

Many Certificate Holders may be unaware that the requirements have changed for the materials they use in their ASME construction. At one time, materials needed to be covered by an ASTM specification before they could be adopted by the ASME Boiler and Pressure Vessel Code. Now, manufacturers can use materials made to specifications developed by other recognized national,

regional or international organizations such as those of the German Institute for Standardization (DIN), the Japan Standards Association (JSA), the International Organization for Standardization (ISO), or the European Committee for Standardization (CEN), without having to invoke the processes described in PG 10 (Section I) or UG-10 (Section VIII, Div. 1). The end result is that ASME Certificate Holders will

have a wider choice of materials for ASME construction.

The procedure for submittal of these types of material specifications to the Boiler and Pressure Vessel Committee is described in Section II, but there is more that goes on behind the scenes that ASME Certificate Holders should know about. The following description will provide not only a step-by-step guide to submitting material specifications for

continued on page 5

approval, but also information on how the decision to adopt is made by the Committee.

The request must be from a manufacturer of pressure equipment, not from a material manufacturer or supplier. The type of request being made must be stated, in this case the adoption of non-ASTM specification. The specification must be provided in English, but the units may be either US or SI/metric units. The specification must also be developed by a recognized national, regional or international organizations, such as, but not limited to ASTM, DIN, JSA, ISO, or CEN. The Section(s) and Division(s) of the Boiler and Pressure Vessel Code in which the inquirer wants the material to be incorporated needs to be stated. Examples would be Section I or Section VIII, Division 1.

At this point, the ASME Boiler and Pressure Vessel Committee will make a

determination on whether the candidate specification closely resembles a material specification currently listed in Section II. The determination will be made on the basis of similarities in chemical and physical properties of the material. If so, allowable stresses will be assigned to the candidate material based on its tensile strength at room temperature, using the same trend curves as the material currently listed in Section II.

If the candidate material does not closely resemble a material specification currently listed in Section II, the additional information shown in Table 3 must be submitted. The physical properties data list in this table is the same type of data that has always been required for new materials whether they are covered by an ASTM specification or not. This data is needed to establish allowable stresses and service limitations commensurate with the design philosophy of the ASME Boiler and Pressure Vessel Code.

The above information should be sent to the Secretary/Secretaries of the Section(s) that you would like the material to be adopted by. For inquiries/requests you can contact the following ASME staff representatives:

Section I - Paul Stumpf
at (212) 591-8536 or
via e-mail at stumpfpa@asme.org

Section II - Noel Lobo
at (212) 591-8540 or
via e-mail at lobon@asme.org

Section III - Chris Sanna
at (212) 591-8513 or
via e-mail at sannac@asme.org

Section IV - Mike Argenziano
at (212) 591-8534 or
via e-mail at argenzianom@asme.org

Section VIII - Alan Roby
at (212) 591-8538 or
via e-mail at robya@asme.org ■

Certification of NDT Personnel

The American Society for Nondestructive Testing (ASNT), and Rheinisch-Westfälischer Technischer Überwachungsverein (RWTUV) of Essen, Germany, have entered into an agreement to offer NDT personnel certifications which can satisfy the requirements of both the European Pressure Equipment Directive (PED) and the ASME Boiler and Pressure Vessel Code. The PED specifies NDT personnel certification in accordance with European Standard EN 473.

RWTUV and ASNT have incorporated minor modifications to bring ASNT's Central Certification Program (ACCP) into compliance with EN 473. Serving as an accredited organization within the European Union, RWTUV will issue EN 473 certifications upon successful completion of qualification and examination requirements, while ASNT will simultaneously issue ACCP certification.

For more information regarding this joint certification, contact:

ASNT, 1711 Arlingate Lane, P.O. Box 28518,
Columbus, OH, USA, 43228-0518
Attention: Jim Houf,
Senior Manager, Technical Services
Phone: 1.800.222.2768 or 614.274.6003,
Fax: 614.274.6899

or

RWTUV, Kurfürstenstrasse 58, D-45138
Essen, Germany,
Attention: Detlef Reichwaldt
Phone: 201.825.2754, Fax: 201.825.2632

Board on Conformity Assessment – Alan Bagner, 1-212-591-8580, bagnera@asme.org

ACCREDITATION PROGRAMS

- AIA Qualification of Authorized Inspection Agencies, nuclear and non-nuclear, based on the ASME QAI-1 Standard (formerly N626.1)
Bibi Rahim, 1-212-591-8465, rahimb@asme.org & Ken Baron, 1-212-591-7019, baronk@asme.org
- FAP Fastener manufacturers, distributors, and laboratories
Bibi Rahim, 1-212-591-8465, rahimb@asme.org & Felicia Zusman, 1-212-591-8586, zusmanf@asme.org
- BPV Boiler and Pressure Vessels
Joseph Pang, 1-212-591-8525, pangj@asme.org & Ken Baron, 1-212-591-7019, baronk@asme.org
- N-type Nuclear component manufacturers and assemblers (vessels, tanks, pressure piping, and pressure relief devices)
Bibi Rahim, 1-212-591-8465, rahimb@asme.org & Felicia Zusman, 1-212-591-8586, zusmanf@asme.org
- PRD Pressure relief device testing laboratories and authorized observers
Joseph Pang, 1-212-591-8525, pangj@asme.org & Ken Baron, 1-212-591-7019, baronk@asme.org

- QEI Elevator Inspector certifying organizations
Bibi Rahim, 1-212-591-8465, rahimb@asme.org & Felicia Zusman, 1-212-591-8586, zusmanf@asme.org
- QSC Nuclear material organization (material manufacturers and suppliers)
Bibi Rahim, 1-212-591-8465, rahimb@asme.org & Felicia Zusman, 1-212-591-8586, zusmanf@asme.org
- RTP Manufacturers of reinforced thermoset plastic corrosion resistant vessels
Bibi Rahim, 1-212-591-8465, rahimb@asme.org & Felicia Zusman, 1-212-591-8586, zusmanf@asme.org

REGISTRATION PROGRAM

- ISO Registration of suppliers of mechanical equipment and related materials, items, and services in the industries and sectors associated with the art, science, and practice of mechanical engineering
Christine Bujal, 1-212-591-8592, bujalc@asme.org & Ken Baron, 1-212-591-7019, baronk@asme.org

**To receive an ISO 9000 proposal contact:
Raj Manchanda, 1-212-591-8033,
Fax 1-212-591-8599
E-mail: accreditation@asme.org**

CERTIFICATION OF PERSONNEL

- QHO Operators of hazardous waste incinerators
Sandra Bridgers, 1-212-591-8465, bridgerss@asme.org & Felicia Zusman, 1-212-591-8586, zusmanf@asme.org
- QMO Operators of medical waste incinerators (MWIs)
Sandra Bridgers, 1-212-591-8465, bridgerss@asme.org & John Millman, 1-212-591-8584, millmanj@asme.org
- QRO Operators of resource recovery facilities processing municipal solid waste (MWCs)
Sandra Bridgers, 1-212-591-8465, bridgerss@asme.org & John Millman, 1-212-591-8584, millmanj@asme.org
- QFO Operators of high capacity fossil fuel fired plants
Sandra Bridgers, 1-212-591-8465, bridgerss@asme.org & John Millman, 1-212-591-8584, millmanj@asme.org
- Y14 Geometric dimensioning and tolerancing professionals (GDTP)
Sandra Bridgers, 1-212-591-8465, bridgerss@asme.org & John Millman, 1-212-591-8584, millmanj@asme.org



The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990
U.S.A.

Non-Profit Org.
U.S. Postage
PAID
New York, NY
Permit No. 2245

**The Mark – a newsletter published for ASME's
Certificate Holders by the ASME Codes and
Standards Conformity Assessment Department**