

Welding Filler Metal/Consumables

STD.8015

Scope

This standard identifies filler metal/consumable manufacturers and origin of manufacturing with which Enterprise (Company) has pre-authorized for use in any Company Scope of Work being carried out where welding is involved.

This standard applies to all welding of pipelines, process piping, power piping, all welding of pressure containing components or welding to the pressure boundary for any reason for any piping or vessels that are Engineered To Order (ETO), ETO mechanical equipment (e.g. pumps, towers, heat exchangers, etc.), ETO valves, modification of ETO mechanical equipment and valves, and modification to Original Equipment Manufacturer (OEM) commodity valves.

This standard does not apply to the manufacturing process of OEM commodity valves (e.g. valves that have been manufactured by an OEM that are readily available for a wide variety of applications), structural steel, plate mills or valve castings.

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1.0 REFERENCES

1.1. American Petroleum Institute (API)

API 1104	Welding of Pipelines and Related Facilities, 20th Edition, October 2005, errata/addendum (July 2007), and errata 2 (December 2008)
API 650	Welded Tanks for Oil Storage, 11th edition, June 2007, includes addendum 1 (November 2008), addendum 2 (November 2009), addendum 3 (August 2011), and errata (October 2011)
API 653	Tank Inspection, Repair, Alteration, and Reconstruction, 3rd Edition, December 2001, includes addendum 1 (September 2003), addendum 2 (November 2005), addendum 3 (February 2008), and errata (April 2008)

1.2. American Society of Mechanical Engineers (ASME)

B31.3-2018	Process Piping
B31.4-2019	Pipeline Transportation Systems for Liquids and Slurries
B31.8-2018	Gas Transmission and Distribution Piping Systems
2019 ASME BPVC Boiler and Pressure Vessel Code	Section VIII Div. 1 - Rules for Construction of Pressure Vessels Section IX - Welding and Brazing Qualifications

1.3. American Welding Society (AWS)

AWS D1.1	Structural Welding Code-Steel
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1.4. Company Standards

STD.8001	Enterprise API 1104 Welding Procedures
STD.8008	Welding of Pipeline and Related Facilities, and Nondestructive Examination Requirements

2.0 TERMS AND DEFINITIONS

ASME – American Society of Mechanical Engineers

AWS – American Welding Society

Company – Enterprise (if used in connection with a contract or other agreement, the actual Enterprise entity will be the specific Enterprise entity referenced in the contract)

ETO – Engineered to Order

OEM – Original Equipment Manufacturer

3.0 GENERAL

- (1) The use of consumables on applicable scopes of work and projects specified within the “Scope” of this standard, whose Manufacturer Group, Manufacturer sub-company and country of origin are identified for each of the welding processes in Sections 4.0, 5.0, and 6.0, are authorized for use without additional review and authorization from the Company’s Welding Department.

- (2) This standard does not preclude the use of other manufacturers' products where their performance can be demonstrated to be satisfactory to the Company's Welding Department. Any proposed filler metal / consumables that are not referenced within this standard shall be approved, prior to use in writing to the Company's Welding Department on a per project basis.
- (3) Requirements for Certification:
 - (a) All consumables shall be certified by the AWS A5 Specification and/or ASME Section II Part C.
- (4) Requirements for Packaging:
 - (a) Consumables shall be supplied in original manufacturer's unopened containers. Previously opened or broken packaging of filler metal containers shall not be accepted.
 - (b) All consumables packaging shall have original labeling from manufacturer.
 - (i) Original label to include heat / lot number and classification of consumables / filler metal.

4.0 AUTHORIZED MANUFACTURERS – SHIELDED METAL ARC WELDING (SMAW) PROCESS

Group	Manufacturer Sub-Company	Country
Böhler Welding Group		Germany
Böhler Welding Group	Avesta Welding AB	Sweden
Böhler Welding Group	Fontargen	Germany
Böhler Welding Group	Phoenix-Union-Thermanit (T-Put)	Germany
Böhler Welding Group	Soudokay	Belgium
Böhler Welding Group	UTP	Germany
Böhler Welding Group	Böhler Schweisstechnik Austria GmbH	Austria
ESAB AB		USA
ESAB AB	Conarco	Argentina
ESAB AB	Conarco	Argentina
ESAB AB	Filarc	Netherlands
Haynes International / Haynes Wire Company		USA
Hyundai Welding Products		S. Korea
Illinois Tool Work		USA
Illinois Tool Work	Mckay	USA
Kobelco - Kobe Steel Group		Japan
Lincoln Electric Company		USA
Lincoln Electric Company	Metrode Products LTD	UK
Lincoln Electric Company	Smitweld B.V.	Germany

Group	Manufacturer Sub-Company	Country
Lincoln Electric Company	Air Liquide Welding Group	France
Lincoln Electric Company	Oerlikon	France
Lincoln Electric Company	Etc Oerlikon S.P.A	Italy
Lincoln Electric Company	Blueshield	Canada
Nippon Welding Rod Co. LTD.		Japan
Sandvik		Sweden
Sandvik	Sandvik	USA
Special Metals Welding Products CO		USA
Special Metals Welding Products CO	Special Metals	UK
Techalloy Welding Products / Central Wire		Canada

5.0 AUTHORIZED MANUFACTURERS – GAS TUNGSTEN ARC WELDING (GTAW) PROCESSES

Group	Manufacturer Sub-Company	Country
Böhler Welding Group		Germany
Böhler Welding Group	Avesta Welding AB	Sweden
Böhler Welding Group	Fontargen	Germany
Böhler Welding Group	Phoenix-Union-Thermanit (T-Put)	Germany
Böhler Welding Group	Soudokay	Belgium
Böhler Welding Group	UTP	Germany
Böhler Welding Group	Böhler Schweisstechnik Austria GmbH	Austria
ESAB AB		USA
ESAB AB	Conarco	Argentina
ESAB AB	Conarco	Argentina
ESAB AB	Filarc	Netherlands
Haynes International / Haynes Wire Company		USA
Hyundai Welding Products		S. Korea
Illinois Tool Work		USA
Illinois Tool Work	Mckay	USA
Kobelco - Kobe Steel Group		Japan
Lincoln Electric Company		USA

Group	Manufacturer Sub-Company	Country
Lincoln Electric Company	Metrode Products LTD	UK
Lincoln Electric Company	Smitweld B.V.	Germany
Lincoln Electric Company	Air Liquide Welding Group	France
Lincoln Electric Company	Oerlikon	France
Lincoln Electric Company	Etc Oerlikon S.p.A	Italy
Lincoln Electric Company	Blueshield	Canada
Nippon Welding Rod Co. LTD.		Japan
Sandvik		Sweden
Sandvik	Sandvik	USA
Select Arc		USA
Select Arc	Arcos	USA
Special Metals Welding Products CO		USA
Special Metals Welding Products CO	Special Metals	UK
Techalloy Welding Products / Central Wire		Canada

6.0 AUTHORIZED MANUFACTURERS – GAS METAL ARC WELDING (GMAW), FLUX CORED ARC WELDING (FCAW), METAL CORED ARC WELDING (MCAW), AND/OR SUBMERGED ARC WELDING (SAW) PROCESSES

Group	Manufacturer Sub-Company	Country
Böhler Welding Group		Germany
Böhler Welding Group	Avesta Welding AB	Sweden
Böhler Welding Group	Fontargen	Germany
Böhler Welding Group	Phoenix-Union-Thermanit (T-Put)	Germany
Böhler Welding Group	Soudokay	Belgium
Böhler Welding Group	UTP	Germany
Böhler Welding Group	Böhler Schweisstechnik Austria GmbH	Austria
Cor-Met Inc.		USA
Hyundai Welding Products		S. Korea
Illinois Tool Work		USA
Illinois Tool Work	Hobart	USA

Group	Manufacturer Sub-Company	Country
Illinois Tool Work	Mckay	USA
Illinois Tool Work	Trimark	USA
Illinois Tool Work	Corex	USA
Kobelco - Kobe Steel Group		Japan
Lincoln Electric Company		USA
Lincoln Electric Company	Metrode Products LTD	UK
Lincoln Electric Company	Smitweld B.V.	Germany
Lincoln Electric Company	Air Liquide Welding Group	France
Lincoln Electric Company	Oerlikon	France
Lincoln Electric Company	Etc Oerlikon S.P.A	Italy
Lincoln Electric Company	Blueshield	Canada
Nippon Welding Rod Co. Ltd.		Japan
Sandvik		Sweden
Sandvik	Sandvik	USA
Select Arc		USA
Select Arc	Arcos	USA
Special Metals Welding Products Co		USA
Special Metals Welding Products Co	Special Metals	UK
Techalloy Welding Products / Central Wire		Canada

Attachment Revision Log

Revision No. 0.0		Publish Date: 26 Jan 12
Location of Change	Type of Change	Reason for Change
N/A	N/A	
Revision No. 1.0		Publish Date: 22 Aug 13
Location of Change	Type of Change	Reason for Change
Section 1.0	Addition of Requirements	Provide additional information on Company procedure for obtaining approval of non-preauthorized consumables.
Section 2.0	Removal of Consumables	Removed obsolete welding consumables, as manufacturers have changed trade naming and/or are no longer in the industry.
Section 2.0	Addition of Consumables	Updated existing trade names of consumables and incorporated additional new consumables Company approves.
Throughout document	Update	Updated formatting
Revision No. 2.0		Publish Date: 05 Feb 15
Location of Change	Type of Change	Reason for Change
Section 1.0	Update	Updated department title to "Welding group"
Section 2.1(1)	Addition	Added "Hobart: Pipemaster 60, Pipemaster Pro-60, Hobart 610"
Section 2.1(2)	Deletion/ Addition	Deleted "E7010" and "Shield-Arc 85" Added "Hobart: Pipemaster 70"
Section 2.1(3)	Deletion/ Addition	Deleted "Shield-Arc 70+" Added "Hobart: Pipemaster 80"
Section 2.1(5)	Addition	Added new section and renumbered following sections
Section 2.1(6)	Deletion/ Addition	Renumbered from 2.1(5); Deleted "E7018 H4R, H4R, E7018-A1 H4R, Hoballoy 7018A1, Excalibur 7018-A1, LH 70, LH 72, LH 78, Murex 7018, and Metrode: Mo.B" Added "Atom Arc 7018-1, Soft-Arc 7018-1, Boilermaker 18, 7018 MR, 7018 MRN, and 7018-a MR"
Section 2.1(7)	Deletion/ Addition	Renumbered from 2.1(6); Deleted "H4R" Added "Atom Arc 8018-C1"
Section 2.2(1)	Addition	Added "Oerlikon: Carborod"
Section 2.2(3)	Addition	Added "Oerlikon: Carborod 1"

Section 2.2(4)	Addition	Added "Bohler: Bohler Ni1-1G, Oerlikon: Carborod Ni1"
Section 2.3	Addition	Added new classes in sections (4) (5) and (6)
Revision No. 3.0		Publish Date: 25 Jan 16
Location of Change	Type of Change	Reason for Change
Section 2.0	Addition	Added Pinnacle Alloys as approved manufacturer for various consumable classifications.
Section 2.1(6)	Addition	Added "E7018-A1" classification in description.
Section 2.3(6)	Addition	Added "E71T-12C-J/12M-J" classification in description.
Section 2.3	Addition	Added item (7) as new classification.
Section 3.0	Addition	New section added for approved stainless steel consumables.
Section 4.0	Addition	New section added for approved aluminum consumables.
Revision No. 4.0		Publish Date: 29 Apr 20
Location of Change	Type of Change	Reason for Change
Entire Document	Addition/ Deletion/ Revision	The entire document was totally revised.