Date of Issue: October 2017
Affected Publication: API Specification 17J, *Specification for Unbonded Flexible Pipe*, Fourth Edition, May 2014

Addendum 1

Page 2, Section 2, the following shall be added:

ASTM D1141, *Standard Practice of the Preparation of Substitute Ocean Water*

Page 53, Section 6.2.4.6, change:

The tensile armors shall be subject to testing to confirm that the potential hydrogen evolution resulting from cathodic charging does not result in hydrogen embrittlement. The testing shall be conducted on degreased wire samples immersed in deaerated seawater (minimum 3 % NaCl) with the maximum negative cathodic potential applied. The wire shall be stressed to at least the maximum utilization level expected in service. The cathodic charging shall be applied for a minimum duration of 150 h. Post-test examination shall be conducted to confirm that no blistering or cracking of the wire sample has occurred.

to:

The tensile armor wires shall be tested to confirm that the potential hydrogen evolution resulting from cathodic charging does not result in hydrogen embrittlement. The testing shall be conducted on degreased wire samples immersed in aerated synthetic seawater that conforms to ASTM D1141, with a maximum negative cathodic potential applied per the manufacturer's specification.

NOTE The default value of the maximum negative potential is –1100 mV measured against the Ag/AgCl reference electrode.

The wire shall be stressed to its maximum utilization level expected in service. The cathodic charging shall be applied for a minimum duration of 150 h. Post-test examination shall be conducted, and the acceptance criterion shall be that no blistering or cracking of the wire sample has occurred.

Specification for Unbonded Flexible Pipe

API SPECIFICATION 17J
FOURTH EDITION, MAY 2014

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ERRATA 1, SEPTEMBER 2016
ERRATA 2, MAY 2017
ADDENDUM 1, OCTOBER 2017

REAFFIRMED, MARCH 2021

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Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001, standards@api.org.

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Specification for Unbonded Flexible Pipe

1 Scope

API 17J defines the technical requirements for safe, dimensionally and functionally interchangeable flexible pipes that are designed and manufactured to uniform standards and criteria. Minimum requirements are specified for the design, material selection, manufacture, testing, marking, and packaging of flexible pipes, with reference to existing codes and standards where applicable. See API 17B for guidelines on the use of flexible pipes.

API 17J applies to unbonded flexible pipe assemblies, consisting of segments of flexible pipe body with end fittings attached to both ends. API 17J does not cover flexible pipes of bonded structure. API 17J does not apply to flexible pipe ancillary components. Guidelines on flexible pipe ancillary components are given in API 17L1, API 17L2, and other API documents.

API 17J does not apply to flexible pipes that include nonmetallic tensile and pressure armor wires.

The applications addressed by API 17J are sweet and sour service production, including export and injection applications. Production products include oil, gas, water, and injection chemicals. API 17J applies to both static and dynamic flexible pipes used as flowlines, risers, and jumpers. API 17J does not apply to flexible pipes for use in choke and kill line applications. Annex H of API 17B provides recommendations for the application of fiber reinforced polymer materials for pressure armor and tensile armor in unbonded flexible pipe.

NOTE 1 See API 16C for choke and kill line applications.

NOTE 2 API 17K provides guidelines for bonded flexible pipe.

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.

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

API Specification 17D, *Specification for Subsea Wellhead and Christmas Tree Equipment*

API Recommended Practice 17L2, *Recommended Practice for Flexible Pipe Ancillary Equipment*

API Technical Report 17TR1, *Evaluation Standard for Internal Pressure Sheath Polymers for High Temperature Flexible Pipes*

API Technical Report 17TR2, *The Ageing of PA-11 in Flexible Pipes*

ASME *Boiler and Pressure Vessel Code* [1], *Section IX: Welding and Brazing Qualifications*

ASTM A29 [2], *Standard Specification for Steel Bars, Carbon and Alloy, Hot-Wrought, General Requirements for*

[1] ASME International, 2 Park Avenue, New York, New York 10016-5990, www.asme.org.
[2] ASTM International, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, www.astm.org.

ASTM A182, *Standard Specification for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service*

ASTM A480, *Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip*

ASTM A668, *Standard Specification for Steel Forgings, Carbon and Alloy, for General Industrial Use*

ASTM A751, *Standard Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products*

ASTM C177, *Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus*

ASTM C518, *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*

ASTM D256-10, *Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics*

ASTM D570, *Standard Test Method for Water Absorption of Plastics*

ASTM D638-10, *Standard Test Method for Tensile Properties of Plastics*

ASTM D664-09a, *Standard Test Method for Acid Number of Petroleum Products by Potentiometric Titration*

ASTM D695, *Standard Test Method for Compressive Properties of Rigid Plastics*

ASTM D789, *Standard Test Methods for Determination of Relative Viscosity of Polyamide (PA)*

ASTM D792-08, *Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement*

ASTM D974-08e1, *Standard Test Method for Acid and Base Number by Color-Indicator Titration*

ASTM D1044-08, *Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion*

ASTM D1141, *Standard Practice of the Preparation of Substitute Ocean Water*

ASTM D1238, *Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer*

ASTM D1418, *Standard Practice for Rubber and Rubber Latices—Nomenclature*

ASTM D1505, *Standard Test Method for Density of Plastics by the Density-Gradient Technique*

ASTM D2990, *Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics*

ASTM D4060, *Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser*

ASTM D5028, *Standard Test Method for Curing Properties of Pultrusion Resins by Thermal Analysis*

ASTM D6869, *Standard Test Method for Coulometric and Volumetric Determination of Moisture in Plastics Using the Karl Fischer Reaction (the Reaction of Iodine with Water)*

ASTM E328, *Standard Test Methods for Stress Relaxation Tests for Materials and Structures*

ASTM E384, *Standard Test Method for Microindentation Hardness of Materials*

ASTM E831, *Standard Test Method for Linear Thermal Expansion of Solid Materials by Thermomechanical Analysis*

ASTM E1269, *Standard Test Method for Determining Specific Heat Capacity by Differential Scanning Calorimetry*

ASTM E1356, *Standard Test Method for Assignment of the Glass Transition Temperatures by Differential Scanning Calorimetry*

ASTM G48-03, *Standard Test Methods for Pitting and Crevice Corrosion Resistance of Stainless Steels and Related Alloys by Use of Ferric Chloride Solution*

DNV [3], *GL IMO Resolution A 753 (18)* (Recommended by DNV-GL3 in lieu of withdrawn DNV Classification Note 6.1.)

EN 287-1 [4], *Qualification test of welders—Fusion welding—Part 1: Steels*

EN 10204:2004, *Metallic products—Types of inspection documents*

ISO 62 [5], *Plastics—Determination of water absorption*

ISO 148-1, *Metallic materials—Charpy pendulum impact test—Part 1: Test method*

ISO 178, *Plastics—Determination of flexural properties*

ISO 179 (all parts), *Plastics—Determination of Charpy impact properties*

ISO 307, *Plastics—Polyamides—Determination of viscosity number*

ISO 527-1, *Plastics—Determination of tensile properties—Part 1: General principles*

ISO 527-2, *Plastics—Determination of tensile properties—Part 2: Test conditions for moulding and extrusion plastics*

ISO 604, *Plastics—Determination of compressive properties*

ISO 899-1, *Plastics—Determination of creep behaviour—Part 1: Tensile creep*

ISO 1133, *Plastics—Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics*

ISO 1183 (all parts), *Plastics—Methods for determining the density of non-cellular plastics*

ISO 3384, *Rubber, vulcanized or thermoplastic—Determination of stress relaxation in compression at ambient and at elevated temperatures*

ISO 6506-1, *Metallic materials—Brinell hardness test—Part 1: Test method*

ISO 6507-1, *Metallic materials—Vickers hardness test—Part 1: Test method*

ISO 6508-1, *Metallic materials—Rockwell hardness test—Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 6892, *Metallic materials—Tensile testing at ambient temperature*

ISO 8301, *Thermal insulation—Determination of steady-state thermal resistance and related properties—Heat flow meter apparatus*

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3 Det Norske Veritas GL, Veritasveien 1, 1322 Høvik, Oslo, Norway, www.dnvgl.com.

4 European Committee for Standardization, CEN Management Centre, Rue de Stassart 36, B-1050 Brussels, Belgium, www.cenorm.be.

5 International Organization for Standardization, 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, www.iso.org.