Specification for Ancillary Equipment for Flexible Pipes and Subsea Umbilicals

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Contents

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Contents

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Contents

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Contents

currently in preview, click buy full versi

Contents

Figures

currently in preview, click buy full versi

Contents

Tables

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Contents

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Specification for Ancillary Equipment for Flexible Pipes and Subsea Umbilicals

1 Scope

This specification defines the technical requirements for safe, dimensionally and functionally interchangeable ancillary equipment that is designed and manufactured to uniform standards and criteria.

Minimum requirements are specified for the design, material selection, manufacture, testing, documentation, marking, and packaging of ancillary equipment used in flexible pipe systems and subsea umbilical systems, with reference to existing codes and standards where applicable. See API 17L2 for guidelines on the use of ancillary equipment.

The applicability relating to a specific item of ancillary equipment is stated at the beginning of the particular section for the ancillary equipment in question.

This specification applies to the following ancillary equipment:

— bend stiffeners;

— bend restrictors;

— bellmouths;

— buoyancy modules and ballast modules;

— subsea buoys;

— tethers for subsea buoys and tether clamps;

— riser and tether bases;

— subsea buoy clamps;

— tether clamps;

— piggy-back systems;

— repair clamps;

— I/J-tube seals;

— pull-in heads/installation aids;

— connectors;

— load-transfer devices;

— mechanical protection;

— fire protection;

— VIV (vortex-induced vibration) suppression strakes.

This specification does not cover flexible pipe and umbilical ancillary equipment beyond the connector, with the exception of riser bases and load-transfer devices. Therefore this document does not cover turret structures or

I-tubes and J-tubes for example. In addition, this document does not cover storage devices such as reels, for example.

This specification is intended to cover ancillary equipment made from several material types, including metallic, polymer, and composite materials.

This specification applies to ancillary equipment used in association with the flexible pipe and umbilical applications listed in API 17B, API 17J, API 17E, and API 17K.

Annexes to this specification are not mandatory and are intended to be used as informative guidelines.

2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any addenda) applies.

API Recommended Practice 2A-WSD, *Planning, Designing, and Constructing Fixed Offshore Platforms—Working Stress Design*

API Specification 2F, *Specification for Mooring Chain*

API Recommended Practice 2RD:1998, *Design of Risers for Floating Production Systems (FPSs) and Tension-Leg Platforms (TLPs)*

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

API Specification 9A, *Specification for Wire Rope*

API Recommended Practice 17B, *Recommended Practice for Flexible Pipe*

API Specification 17D, *Design and Operation of Subsea Production Systems—Subsea Wellhead and Tree Equipment*

API Specification 17E, *Specification for Subsea Umbilicals*

API Specification 17J:2014, *Specification for Unbonded Flexible Pipe*

API Specification 17K, *Specification for Bonded Flexible Pipe*

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

API Recommended Practice 17R, *Recommended Practice for Flowline Connectors and Jumpers*

API Recommended Practice 17P, *Recommended Practice for Subsea Structures and Manifolds*

AISC,[1] *Steel Construction Manual*

ASME *Boiler and Pressure Vessel Code*,[2] *Section VIII: Rules for Construction of Pressure Vessels*

ASTM C177,[3] *Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus*

[1] American Institute of Steel Construction, One East Wacker Drive, Suite 700, Chicago, Illinois 60601, www.aisc.org.
[2] ASME International, Two Park Avenue, New York, New York 10016–5990, www.asme.org.
[3] ASTM International, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, www.astm.org.