Recommended Practice for Flexible Pipe Ancillary Equipment

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This standard is under the jurisdiction of the API Subcommittee on Subsea Production Systems. API Subcommittee 17 documents consists of the following:

— RP 17A, *Design and Operation of Subsea Production Systems—General Requirements and Recommendations*
— RP 17B, *Recommended Practice for Flexible Pipe*
— RP 17C, *Recommended Practice on TFL (Through Flowline) Systems*
— Spec 17D, *Design and Operation of Subsea Production Systems—Subsea Wellhead and Tree Equipment*
— Spec 17E, *Specification for Subsea Umbilicals*
— Spec 17F, *Specification for Subsea Production Control Systems*
— RP 17G, *Recommended Practice for Completion/Workover Risers*
— RP 17H, *Remotely Operated Vehicle (ROV) Interfaces on Subsea Production Systems*
— Spec 17J, *Specification for Unbonded Flexible Pipe*
— Spec 17K, *Specification for Bonded Flexible Pipe*
— Spec 17L1, *Specification for Flexible Pipe Ancillary Equipment*
— RP 17L2, *Recommended Practice for Flexible Pipe Ancillary Equipment*
— RP 17M, *Recommended Practice on Remotely Operated Tool (ROT) Intervention Systems*
— RP 17N, *Recommended Practice for Subsea Production System Reliability and Technical Risk Management*
— RP 17O, *Recommended Practice for Subsea High Integrity Pressure Protection Systems (HIPPS)*
— RP 17P, *Subsea Structures and Manifolds* (in press)
— RP 17Q, *Subsea Equipment Qualification–Standardized Process for Documentation*

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Introduction

This Recommended Practice is the result of a Joint Industry Project to develop a worldwide industry standard for the design, material selection, analysis, testing, manufacture, handling, transportation, installation and integrity management of flexible pipe ancillary equipment. The objective of this Recommended Practice is to provide an integrated approach, together with API 17B, API 17J and API 17L1, to the design of flexible pipe systems. Therefore it is intended that this Recommended Practice be used in close conjunction with these documents.

The majority of ancillary equipment is custom-built and can be designed and manufactured in a variety of methods. It is not the intent of this Recommended Practice to discourage novel or new developments in ancillary equipment. On the contrary, it is recognized that a variety of designs and methods are possible. For this reason, some topics are presented in general terms to provide guidance to the user while still leaving open the possibility of using alternative approaches. The reader should be aware that ancillary equipment technology (concepts, design and analysis methodologies and criteria, components manufacturing and testing, operational roles and demands, maintenance and inspection, etc.) is in a state of rapid and continuing evolution. Potential users therefore need to apply care in their application of the recommendations herein.

Within this document, “shall” is used to state that a provision is mandatory; “should” is used to state that a provision is not mandatory, but is recommended as good practice; “may” is used to state that a provision is optional.

Systeme Internationale (SI) units are identified first when cited in the document. United States Customary (USC) units may be given in brackets after the SI units.

Recommended Practice for Flexible Pipe Ancillary Equipment

1 Scope

This Recommended Practice provides guidelines for the design, materials selection, analysis, testing, manufacture, handling, transportation, installation and integrity management of flexible pipe ancillary equipment. It supplements API 17L1, which specifies minimum requirements for the design, material selection, manufacture, documentation, testing, marking and packaging of flexible pipe ancillary equipment.

This Recommended Practice presents the current best practice for design and procurement of ancillary equipment, and gives guidance on the implementation of the specification for standard flexible pipe ancillary products. In addition, this Recommended Practice presents guidelines on the qualification of prototype products.

The applicability relating to a specific item of ancillary equipment within this Recommended Practice is stated at the beginning of the section dedicated to that item of ancillary equipment.

This Recommended Practice applies to the following flexible pipe 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;

— clamping devices;

— piggy-back clamps;

— repair clamps;

— I/J-tube seals;

— pull-in heads/installation aids;

— connectors;

— load-transfer devices;

— mechanical protection;

— fire protection.

This document may be used for bonded flexible pipe ancillary equipment, though any requirements specific to these applications are not addressed.