Recommended Practice for Ancillary Equipment for Flexible Pipes and Subsea Umbilicals

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Introduction

This recommended practice (RP) 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 RP 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 RP be used in 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 RP 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. Therefore, potential users need to apply care in their application of the recommendations herein.

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 Ancillary Equipment for Flexible Pipes and Subsea Umbilicals

1 Scope

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

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

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

This RP 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;

— clamping devices;

— subsea buoy clamps

— piggy-back clamps;

— repair clamps;

— I/J-tube seals;

— pull-in heads/installation aids;

— connectors;

— load-transfer devices;

— mechanical protection;

— fire protection;

— VIV suppression strakes.