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			MARKING AND PACKAGING		

## INDEX OF REVISIONS

REV.	DESCRIPTION AND/OR REVISED SHEETS
0	ORIGINAL
A	Requirements to remove torsion and repair kit packaging added to Section 2.
B	New requirements for packaging lists in Section 2 Packaging

	REV. 0	REV. A	REV. B	REV. C	REV. D	REV. E	REV. F	REV. G
DATE	18/12/2019	01/11/2021	31/07/2023					
PROJECT	SUB/ES/DCT	SUB/ES/DCT	SUB/ES/DCT					
EXECUTION	Walter (UQ9R)	Walter (UQ9R)	Walter (UQ9R)					
CHECK	Eder (CSN8)	Eder (CSN8)	Eder (CSN8) Gasparetto (BEJH)					
APPROVAL	Lancelotti (CXAX)	Lancelotti (CXAX)	Lancelotti (CXAX)					

AS INFORMAÇÕES DESTE DOCUMENTO SÃO PROPRIEDADE DA TRANSPETRO, SENDO PROIBIDA A UTILIZAÇÃO FORA DA SUA FINALIDADE.

FORMULÁRIO PADRONIZADO PELA NORMA PETROBRAS N-381-REV.L.



TECHNICAL SPECIFICATION

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This Technical Specification is part of I-ET-3000.00-1519-291-PAZ-001 – Flexible Pipe Technical Specification. Please refer to the Flexible Pipe Technical Specification for instructions, definitions and abbreviations.

## 1. Marking

The requirements from technical specification I-ET-3000.00-6500-291-PMU-002 – Marking of Flexible Pipes also apply.

Lifting devices such as lifting lugs, padeyes, triplates, pulling heads and handling blind flanges shall have their capacity stamped on their bodies.

For traceability purposes, serial numbers of each end fitting, ancillary component and accessory shall be marked on them. Exception is made to small size accessories such as bolts/nuts.

In order to assure traceability of all products to be supplied, the manufacturer shall define a correlation between the unique codes used in design documentation and the actual marking used in the products. This system shall allow a bi-univocal identification of any product, from the existing marking to the design document and vice-versa. Miscellaneous like fasteners, vent valves, and sealing rings shall have the marking written in the delivery package, for each fabrication run.

## 2. Packaging

All flexible pipes shall be delivered free of torsion. The manufacturer shall have records demonstrating that procedure to remove any residual torsion from the pipes were performed prior to delivery or that the pipe is delivered free of torsion.


The supplier must provide a packaging list containing the description of the components, quantity, dimensions, and weights of each crate.

All *products*, including spare parts, shall be delivered for storage preservation during a period of, at least, four years. This requirement also applies to any reel accessories that are used for packaging of the flexible pipes, including covers, slings, ramps and blocks.

Storage preservation shall consider exposed outdoor conditions under shore environment in the coast of Brazil, including humidity, rain, temperature and sunlight exposure.

The manufacturer shall determine whether specific additional devices, covers, chemicals or coatings are required for onshore storage. The manufacturer shall specify and supply any of these additional required items. Any chemicals proposed shall comply with Brazilian environmental regulations. Also, if needed, the manufacturer shall specify and provide the coatings or chemicals required to preserve the internal and external surfaces of accessories and ancillary components.

The manufacturer shall pack all spare parts, ancillary components and accessories not previously assembled on flexible pipes individually, including seal rings and stud bolts and nuts for installation, in order to avoid damaged during handling and transportation. The material supplied for pipe repair shall also be individually packed and properly labeled for easy identification of each component and/or material.

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In order to define the length of each flexible pipe section, the manufacturer shall consider that the flexible pipes will be transported and stored in standard reels as defined in the project specific data. Therefore, the length of each flexible pipe section shall be compatible with the capacity (in volume or weight) of these reels.

Different reels may be used provided that the reels comply with the onshore base and laying vessel limitations (dimensions, weight, imposed loads) presented in the project specific data.