Title: Errata to correct publication errors in B31.8 - 2022 edition

1) In approved item # 21-40, para. 842.5 was added to the Code. In the "B31-8_2022_QC_1st Proof_to Engineer" document, the ASME editor made a comment saying that the terms MAOP and NPR should be in Time New Roman font instead of italics and that this should be fixed throughout the paragraph, including the formula. However, this was not done in the formula in para. 842.5.1(b).

2) In the 2010-2018 Editions of the Code, para. A843.3.4(c) Venting was included in the Offshore Chapter. For no apparent reason, the publishers deleted the “(c)” in the 2020 Edition. Since the Offshore Chapter is organized to follow the numbering and content of the first six chapters of the Code, this needs to be changed back to the way it was. This was shown in approved errata item #21-1357 and the subparagraph title was revised to say "Vent Piping" in approved item #20-1377. This was correctly shown in the "B31-8_2022_rough proofs_to Engineer" document and in the "B31-8_2022_QC_1st Proof_to Engineer" document, but for no apparent reason, the publishers incorrectly revised this in the published 2022 Edition.
be tested. The tie-in joints, however, shall be tested for leaks at line pressure.

(22) **842.4.2 Test Requirements**

(a) The test procedure used, including the duration of the test, shall be capable of disclosing all leaks in the section being tested and shall be selected after giving due consideration to the volumetric content of the section and its location.

(b) Thermoplastic piping shall not be tested at material temperatures above 140°F (60°C), and reinforced thermosetting plastic piping shall not be tested at material temperatures above 150°F (66°C). The duration of the test of thermoplastic piping above 100°F (38°C), however, shall not exceed 96 hr.

(c) Sufficient time for joints to “set” properly must be allowed before the test is initiated.

(d) Plastic pipelines and mains shall be tested at a pressure not less than 1.5 times the maximum operating pressure or 50 psig (340 kPa), whichever is greater, except that

1. the test pressure for reinforced thermosetting plastic piping shall not exceed 3.0 times the design pressure of the pipe
2. the test pressure for thermoplastic piping shall not exceed 3.0 times the design pressure of the pipe at temperatures up to and including 100°F (38°C) or 2.0 times the design pressure at temperatures exceeding 100°F (38°C)

(e) Testing may be pneumatic or hydrostatic.

**842.4.3 Safety During Tests.** All testing after construction shall be done with due regard for the safety of employees and the public during the test.

(22) **842.5 Multilayered Reinforced Thermoplastic Piping Systems (MRTPS)**

The requirements of this section pertain to MRTPS that are composed of pipes with a thermoplastic liner and a distinct reinforcing layer as defined in ASME NM.1, Chapter 8. The manufacturing and qualification of MRTPS, including the joints or couplings, shall meet the requirements of API Spec 15S.

**842.5.1 Design of MRTPS**

(a) **General Provisions.** The design shall meet the requirements of ASME NM.1 with the following limitations:

1. MRTPS shall not be used outside of Class 1 Locations unless a more rigorous analysis in accordance with the provisions of para. 802.2.2(a) is used to define the appropriate design factor for the intended location class.
2. MRTPS that carry potentially flammable or explosive fluids that can accumulate static electrical charge shall be designed to prevent the buildup of static electric charge. API RP 2003 should be consulted for recommended practices on the prevention methods.

**842.5.2 Installation of MRTPS.** The installation of MRTPS shall follow the MRTPS manufacturer’s recommendations, including the fabrication, assembly, and erection requirements of ASME NM.1, Chapter 8, in addition to the requirements of this Code.

(a) **Construction Specifications.** All construction work performed on MRTPS shall be performed using written construction specifications incorporating the recommendations of the manufacturer. The construction specifications shall cover the requirements of this Code and shall be in sufficient detail to ensure safe construction of fit for service pipeline components or systems.

(b) **Inspection and Handling Provisions.** MRTPS are susceptible to injurious damage by mishandling during shipment and transportation, offloading at the storage yard or installation location, unspooling, and installation. Care shall be exercised during handling and installation to prevent such damage in accordance with the provisions of para. 842.3.2 and the product manufacturer’s recommendations.

(c) **Unspooling Provisions.** The construction specifications shall provide sufficient details for unspooling including, but not limited to, the spooling frame, the unspooling method, the maximum pulling load, the lowest allowable unspooling temperature, and the recommended braking procedure.

(d) **Installation Provisions.** MRTPS may be installed aboveground (surface installation) or buried. The piping shall be installed with sufficient slack to provide for possible contraction. Bends in MRTPS shall always be made with a radius greater than the minimum bend radius qualified by the product manufacturer.

1. Aboveground (surface installation) MRTPS shall be resistant to deterioration due to high temperature and ultraviolet radiation, and protected against external damage.

2. Buried MRTPS shall be laid on undisturbed or well-compacted soil. If MRTPS is to be laid in soils that may damage it, the piping shall be protected by suitable rock-free materials before backfilling is completed. Backfilling shall be performed in a manner to provide firm support around the piping. The minimum depth of cover shall be 36 in. (910 mm).
A843.4 Pressure-Relieving and Pressure-Limiting Requirements for Offshore Compression Facilities:

Vent piping that can operate above atmospheric pressure shall be designed, constructed, and tested in accordance with this Code. Pressure relief valves shall be vented to atmosphere such that no hazard is created. Vent piping, common headers, and platform blowdown lines shall have sufficient capacity so that they will not interfere with the performance of the relief device.

A844 ON-BOTTOM STABILITY

Pipeline design for lateral and vertical stability is governed by seafloor bathymetry, soil characteristics, and by hydrodynamic, seismic, and soil behavior events having a significant probability of occurrence during the life of the system. Design conditions to consider are provided in the following subsections.

The pipeline system shall be designed to prevent horizontal and vertical movements, or shall be designed so that any movements will be limited to values not causing allowable stresses to be exceeded (see section A842).

Typical factors to be considered in the stability design include

(a) wave and current forces
(b) scour and resultant spanning
(c) liquefaction
(d) slope failure

Stability may be obtained by such means including, but not limited to, pipe submerged weight, trenching of pipe below grade, and anchoring.

When calculating hydrodynamic forces, the spatial variance of wave forces along the length of the pipeline may be taken into account.

Additional information on hydrostatic stability can be found in API RP 1111, para. 4.4.2.

A844.1 Design Storm Conditions

Design wave and current conditions for portions of a pipeline that will not be trenched shall be based on a storm having a minimum return interval of no less than five times the design life or 100 yr, whichever is smaller. Portions of the pipeline system to be trench ed shall be designed for wave and current conditions based on prudent assessment of the period of pipe exposure. The most unfavorable expected combination of wave and current conditions shall be used. Maximum wave and maximum current conditions do not necessarily occur simultaneously. The most unfavorable condition selection shall account for the timing of occurrence of the wave and current direction and magnitude.

A844.2 Stability Against Waves and Currents

A844.2.1 Submerged Weight. The submerged weight of the pipe may be designed (such as by weight coating) to resist or limit movement to acceptable values. Hydrodynamic forces shall be based on the wave and current values for the design storm condition for the specific location. Wave and current directionality and concurrency shall be considered.

A844.2.2 Bottom Soils. The pipe–soil interaction factors that are used shall be representative of the bottom conditions at the site.

A844.2.3 Trenching. The pipeline and its appurtenances may be trench ed below bottom grade to provide stability. The pipeline must be designed for wave and current stability prior to trenching. Such stability, however, need only be based on environmental conditions expected during the period of pipe exposure.

A844.2.4 Backfilling. Backfilling or other protective coverings, when necessary, shall be accomplished by using such materials and procedures to preclude damage to the pipeline and coatings.

A844.2.5 Anchoring. Anchoring may be used instead of or in conjunction with submerged weight to maintain stability. The anchors shall be designed to withstand lateral and vertical loads expected from the design storm condition. Anchors shall be spaced to prevent excessive stresses in the pipe sections between anchors. The anchoring system and adjacent pipe shall be designed to prevent scour and resultant spanning from overstressing the pipe. The effect of anchors on the cathodic protection system shall be considered.

A844.3 Shore Approaches

Pipe in the shore approach zone shall be trenched or bored to the depth necessary to prevent scouring, spanning, or stability problems that affect integrity and safe operation of the pipeline during its anticipated service life. Seasonal variation in the near shore thickness of seafloor sediments and shoreline erosion over the pipeline service life shall be considered. API RP 1133 may be used for additional guidance.

A844.4 Slope Failure

The pipeline shall be designed for slope failure in zones of known or anticipated occurrence, such as mudslide zones and areas of seismic slumping. The design exposure period shall be no less than the expected life of the pipeline. If it is not practical to design the pipeline system to survive the event, the pipeline shall be designed for controlled breakaway with check valving to prevent blowdown of the pipeline.