

TECHNICAL SPECIFICATION

CARBON STEEL PIPE (AMENDMENTS/SUPPLEMENTS TO ASTM A 333)

MESC SPE 74/004

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MESC SPECIFICATION DOCUMENT



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All administrative queries should be directed to the MESC SPE Administrator in Shell GSI.

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PART I INTRODUCTION

1.1 SCOPE

This MESC SPE specifies requirements for carbon steel pipe to ASTM A 333, Grade 6.

This MESC SPE shall apply in addition to the applicable MESC Buying Description, purchase order or requisition sheet.

This MESC SPE is written as amendments and supplements to ASTM A 333:2011, which are covered in Part II of this MESC SPE. The clause numbering of ASTM A 333:2011 has been retained and any amendments are identified as 'Add', 'Modify to read' or 'Delete'. Any clauses of ASTM A 333:2011 that are not amended or supplemented by this MESC SPE shall apply as written.

1.2 DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS

Unless otherwise authorised by Shell GSI, the distribution of this MESC SPE is confined to Shell companies and, where necessary, to Contractors and Manufacturers/Suppliers nominated by them.

This MESC SPE is intended for use in oil refineries, chemical plants, gas plants, exploration and production facilities and, where applicable, supply/distribution installations.

If national and/or local regulations exist in which some of the requirements may be more stringent than in this MESC SPE the Contractor shall determine by careful scrutiny which of the requirements are the more stringent and which combination of requirements will be acceptable with regards to safety, environmental, economic and legal aspects. In all cases the Contractor shall inform the Principal of any deviation from the requirements of this MESC SPE which is considered to be necessary in order to comply with national and/or local regulations. The Principal may then negotiate with the Authorities concerned, the objective being to obtain agreement to follow this MESC SPE as closely as possible.

1.3 DEFINITIONS

The **Contractor** is the party that carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project, or operation or maintenance of a facility. The Principal may undertake all or part of the duties of the Contractor.

The **Manufacturer/Supplier** is the party that manufactures or supplies equipment and services to perform the duties specified by the Contractor.

The **Principal** is the party that initiates the project and ultimately pays for its design and construction. The Principal will generally specify the technical requirements. The Principal may also include an agent or consultant authorised to act for, and on behalf of, the Principal.

The word **shall** indicates a requirement.

The word **should** indicates a recommendation.

1.4 CHANGES SINCE PREVIOUS EDITION

The previous edition of this MESC SPE was dated **May 2010. The only change is to update the version of ASTM A333, to update impact testing requirement, to update section on "Length" for pipes and change of email address for MESC SPE administrator.**

1.5 COMMENTS ON THIS MESC SPE

Comments on this MESC SPE may be sent to the MESC SPE Administrator at MESC@shell.com. Shell staff may also post comments on this MESC SPE on the Surface Global Network (SGN) under the Standards folder.

PART II AMENDMENTS/SUPPLEMENTS TO ASTM A 333:2011

- 4.1 *Modify 1st sentence to read:*
The pipe shall be made by the seamless process.
Add:
Circumferential welded joints are not permitted.
- 5.1 *Add:*
The following amendments to the chemical composition shall apply:
- The carbon content shall not exceed 0.23 %.
 - Supplementary requirement S2.2 and S2.3 shall apply, although CE shall not exceed 0.43 irrespective of the specified wall thickness.
- 5.3 *Add* If sour service is specified, the sulphur content shall not exceed 0.010 %.
- 5.4 *Add* If Hydrofluoric acid service is specified, supplementary requirements S2 shall apply.
- 8.1 *Add:*
Low temperature carbon steel pipes shall be impact tested at a temperature of minus 50 °C (minus 58 °F).
Impact test results as an average of three tests shall be at least 27 J for standard size specimens (10 mm x 10 mm). Only one result may be lower than 27 J, but it shall be at least 21 J. The impact values for sub-size specimens, as defined in Table 4, shall be multiplied by 1.5.
Alternatively, the impact tests may be carried out at minus 46 °C (minus 50 °F) but the impact values shall be at least 33J for standard size specimens.
- 9.1 *Modify to read:*
Unless specified otherwise in the purchase order, the Unit of Length (UoL) for pipe is in meter or feet. The form of delivery shall be in single random length (SRL or double random length (DRL). The specified quantities of random lengths on the purchase order shall be converted to aggregate length on the basis of 6.1 m (20 ft) for single random length and 10.7 m (35 ft) for double random length. Individual pieces of single random lengths may range from 4.8 m to 6.7 m (16 to 22 ft) with less than 5% of the pieces between 3.7 m to 4.8m (12 to 16 ft). Individual pieces of double random lengths may range from 6.7 m (22 ft) with less than 5 % of the pieces between 4.8 m to 6.7 m (16 to 22 ft).
To satisfy the purchase order required pipe length, the delivered quantities of random lengths shall amount to at least the calculated aggregate length.
- 16.2 *Add* In addition, marking shall also include the nominal pipe size (DN), and the pipe schedule number or specified wall thickness (mm).
Marking shall also include the charge number (heat number) and, where applicable, the heat treatment batch number.
- 16.3 *Add* If die stamping is used, the stamps shall be low-stress stamps.
- 16.4 *Add* If sour service is specified, marking shall also include the identification "SOUR" behind the ASTM designation.
- 18 *Add* **Certification**
Unless specified otherwise, inspection and test certificates shall be supplied to the Principal.

PART III REFERENCES

In this MESC SPE, reference is made to the following publications:

NOTES:

1. Unless specifically designated by date, the latest edition of each publication shall be used, together with any amendments/supplements/revisions thereto.
2. Most of the referenced external standards are available to Shell staff on the SWW (Shell Wide Web) at <http://sww.shell.com/standards>.

AMERICAN STANDARDS

Standard Specification for Seamless and Welded Steel
Pipe for Low-Temperature Service

ASTM A 333:2011

Issued by:
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1916 Race Street, Philadelphia
19103, USA