



Ministry of Mines and Energy

**NATIONAL OIL STORAGE FACILITIES PROJECT:  
WALVIS BAY, NAMIBIA**



**STAGE: BEP**

**DOC. NO.: F1/7-36/2013-00-PI-SPC-0008-00**

**REV.: D01**

**PAGE 1 OF 22**

**DOC. TITLE: Specification for Piping Support Design**

**UNIT: GENERAL**

**SPECIFICATION  
FOR  
PIPING SUPPORT DESIGN**

|             |                            |               |              |              |              |             |
|-------------|----------------------------|---------------|--------------|--------------|--------------|-------------|
| D01         | Issued for Client Review   | YQ Zhong      | FH You       | FX Wu/H Chen |              | 29/Apr/15   |
| C01         | Issued for IDRE Review     | YQ Zhong      | FH You       | H Chen       |              | 22/Apr/15   |
| B01         | Issued for Internal Review | YQ Zhong      | FH You       | H Chen       |              | 10/Apr/15   |
| A02         | Re-issued for Squad Check  | YQ Zhong      | FH You       | H Chen       |              | 31/Mar/15   |
| A01         | Issued for Squad Check     | YQ Zhong      | FH You       | H Chen       |              | 17/Mar/15   |
| <b>REV.</b> | <b>DESCRIPTION</b>         | <b>PREP'D</b> | <b>CHK'D</b> | <b>REV'D</b> | <b>APP'D</b> | <b>DATE</b> |



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### Change Log

| REV | SECTION | CHANGE DESCRIPTION |
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| <br>Ministry of Mines and Energy | <b>NATIONAL OIL STORAGE FACILITIES PROJECT:<br/>WALVIS BAY, NAMIBIA</b> |                      |  |
| <b>STAGE:BEP</b>                                                                                                  | <b>DOC. NO.:</b> F1/7-36/2013-00-PI-SPC-0008-00                         | <b>REV.:</b> D01     | <b>PAGE 3 OF 22</b>                                                                 |
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| <br>Ministry of Mines and Energy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>NATIONAL OIL STORAGE FACILITIES PROJECT:<br/>WALVIS BAY, NAMIBIA</b> |                      |     <br> <br>your future starts with us |
| <b>STAGE:BEP</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>DOC. NO.:</b> F1/7-36/2013-00-PI-SPC-0008-00                         | <b>REV.:</b> D01     | <b>PAGE 4 OF 22</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>DOC. TITLE:</b> Specification for Pipe Stress Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                         | <b>UNIT:</b> GENERAL |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <div><h2>1.0 PURPOSE OR OBJECTIVE</h2><h3>1.1 Scope</h3><p>This specification covers the general requirements for the selection and design of all pipe supports. To make the content and depth of the piping support design for THE FIDIC EPC CONSTRUCTION OF NATIONAL OIL (PETROLEUM) STORAGE, OIL TANKER JETTY, ON-SHORE SITE, AND PIPELINES FACILITIES FOR THE PORT OF WALVIS BAY, NAMIBIA meet the basic requirements for piping support design in all the design stages, this prescript is prepared specially.</p><p>This specification does not cover the structural support to be designed by structural department.</p><h3>1.2 Project Description</h3><p>The Government of Republic of Namibia (GRN) has mandated the National Petroleum Corporation of Namibia (Pty) Ltd (NAMCOR) to import 50% of all imported fuel products into Namibia. In order to optimise and streamline the activities of NAMCOR, and to enable the storage of strategic fuel reserves for Namibia, a bulk fuel storage facility is proposed by NAMCOR in Walvis Bay. This will also enable cost effective import, storage and distribution of fuel in Namibia as well as export of fuel. Construction of the new bulk fuel storage facility will provide Namibia with a facility, complying with world standards, to enhance the import/export of strategic fuel reserves for Namibia.</p><p>This loading / offloading oil terminal contains Oil Storage (Tank Farm), Oil Tanker Jetty, Onshore Site and Pipelines Facilities.</p><h3>1.3 Project Definitions</h3><p>Within this document the following definitions shall apply.</p><p><b>Owner:</b> Namibia Ministry of Mines and Energy</p><p><b>Project:</b> The FIDIC EPC Construction of National Oil (Petroleum) Storage, Oil Tanker Jetty, On-Shore Site, and Pipelines Facilities for the Port of Walvis Bay, Namibia</p><p><b>EPC Contractor:</b> Party, which carries out all or part of the Detail Design, Engineering, Procurement, Construction, Installation and Commissioning for the Project. The term EPC CONTRACTOR incorporates its approved Vendors and Sub-Vendors.</p><p><b>Vendor:</b> Selected provider of the Elements, Equipment, Subsystems or Systems. This term includes also “Vendor” and “Manufacturer”. The Owner shall approve Vendors proposed by EPC CONTRACTORS</p></div> |                                                                         |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| <b>STAGE:BEP</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>DOC. NO.:</b> F1/7-36/2013-00-PI-SPC-0008-00                         | <b>REV.:</b> D01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>PAGE 5 OF 22</b>                                                                 |
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| <p><b>Sub-Vendor:</b></p> <p><b>Field Proven:</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                         | <p>Party, which performs specific works or services for the Project, on behalf and under supervision and responsibility of any of the EPC Contractors. The Owner shall approve Subvendors proposed by EPC Contractors</p> <p>Extended continuous satisfactory operation on sufficient number of similar applications as referenced by major end-users. The Owner reserves its right to accept as valid, for the Project purpose, the supporting documentation provided versus the terms “sufficient” and “referenced”</p> |                                                                                     |
| <p><b>Abbreviations</b></p> <p>API            American Petroleum Institute</p> <p>ASCE          American Society of Civil Engineers</p> <p>ASME         American Society of Mechanical Engineering</p> <p>ASTM         American Society for Testing and Materials</p> <p>CE             Carbon Equivalent</p> <p>DN             Nominal Diameter</p> <p>FEED          Front End Engineering Design</p> <p>HSE           Health Safety &amp; Environment</p> <p>ISO            International Organisation for Standardisation</p> <p>ITP            Inspection and Test Plan</p> <p>NDT           Non Destructive Testing</p> <p>NDE           Non Destructive Examination</p> <p>PQR           Procedure qualification record</p> <p>PWHT         Post Weld Heat Treatment</p> <p>SDRS          Contractor/Subcontractor Documentation Requirements Schedule</p> <p>WPS           Welding procedure specification</p> |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |

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| <b>STAGE:BEP</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>DOC. NO.:</b> F1/7-36/2013-00-PI-SPC-0008-00                                                      | <b>REV.:</b> D01     | <b>PAGE 6 OF 22</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                                                    |           |                                                                                                      |
| <b>DOC. TITLE:</b> Specification for Pipe Stress Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                      | <b>UNIT:</b> GENERAL |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                    |           |                                                                                                      |
| <div><h2>2.0 CODES, STANDARDS, REGULATIONS AND PROJECT DOCUMENTS</h2><h3>2.1 General</h3><p>The standard piping support shall be in accordance with the requirements of this specification, the relevant BOD Data Sheets, the following project specifications, other project specifications where referenced in the Contract, and the latest editions of the following codes, standards and regulations and other documents referenced therein.</p><h3>2.2 Regulations</h3><p>Where SA Regulations exist, the requirements of these shall apply.</p><p>Other country’s codes or manufacturer standards may be applied, if the code is more conservative, any conflicts to be discussed with Owner.</p><h3>2.3 Codes and Standards</h3><p>The requirements of the latest editions of the following Codes and Standards shall be complied with:</p><table><tr><td>ASME B31.4</td><td>Pipeline Transport Systems for Liquid Hydrocarbons</td></tr><tr><td>MSS SP-58</td><td>Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application, and Installation</td></tr></table><p>Spring Hangers and Special Supports will be designed and fabricated in accordance with the design draft and spring hangers data sheet.</p><p>Any divergence between any of the Contractual Reference Documents or between this specification and any other Contractual Reference Document should be reported to Owner for decision. In such a case, and unless otherwise agreed or decided by Owner it is understood that the more stringent requirement shall apply.</p></div> |                                                                                                      |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ASME B31.4 | Pipeline Transport Systems for Liquid Hydrocarbons | MSS SP-58 | Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application, and Installation |
| ASME B31.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Pipeline Transport Systems for Liquid Hydrocarbons                                                   |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                    |           |                                                                                                      |
| MSS SP-58                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application, and Installation |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                    |           |                                                                                                      |

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