



## Data Sheet for Line Pipe (22% and 25% Chromium Duplex Stainless Steel Seamless)

|    |                                                                                      |                                                             |                                                             |             |                  |
|----|--------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------|------------------|
| 1  | Project:                                                                             | DS Ref No.                                                  |                                                             |             |                  |
| 2  | Pipeline Section:                                                                    |                                                             |                                                             |             |                  |
|    | <b>Property</b>                                                                      | <b>Units</b>                                                | <b>Item</b>                                                 | <b>Item</b> | <b>Item</b>      |
| 3  | Nominal Pipe Outside Diameter                                                        | <input type="checkbox"/> mm <input type="checkbox"/> in     |                                                             |             |                  |
| 4  | Nominal Pipe Inside Diameter                                                         | <input type="checkbox"/> mm <input type="checkbox"/> in     |                                                             |             |                  |
| 5  | Nominal Pipe Wall Thickness                                                          | <input type="checkbox"/> mm <input type="checkbox"/> in     |                                                             |             |                  |
| 6  | Minimum Pipe Wall Thickness                                                          | <input type="checkbox"/> mm <input type="checkbox"/> in     |                                                             |             |                  |
| 7  | Ambient Temp SMYS – Long/Trans                                                       | <input type="checkbox"/> MPa <input type="checkbox"/> ksi   | /                                                           | /           | /                |
| 8  | Ambient Temp SMTS – Long/Trans                                                       | <input type="checkbox"/> MPa <input type="checkbox"/> ksi   | /                                                           | /           | /                |
| 9  | Quantity                                                                             | <input type="checkbox"/> m <input type="checkbox"/> ft      |                                                             |             |                  |
| 10 | Design Pressure                                                                      | <input type="checkbox"/> kPag <input type="checkbox"/> psig |                                                             |             |                  |
| 11 | Normal Operating Pressure                                                            | <input type="checkbox"/> kPag <input type="checkbox"/> psig |                                                             |             |                  |
| 12 | Bubble Point Pressure (Oil Systems)                                                  | <input type="checkbox"/> kPag <input type="checkbox"/> psig |                                                             |             |                  |
| 13 | Mill Hydrotest Pressure                                                              | <input type="checkbox"/> kPag <input type="checkbox"/> psig |                                                             |             |                  |
| 14 | Maximum Field Hydrotest Pressure                                                     | <input type="checkbox"/> kPag <input type="checkbox"/> psig |                                                             |             |                  |
| 15 | Maximum Design Temperature                                                           | <input type="checkbox"/> °C <input type="checkbox"/> °F     |                                                             |             |                  |
| 16 | Minimum Design Temperature                                                           | <input type="checkbox"/> °C <input type="checkbox"/> °F     |                                                             |             |                  |
| 17 | Normal Operating Temperature                                                         | <input type="checkbox"/> °C <input type="checkbox"/> °F     |                                                             |             |                  |
| 18 | Elevated Temperature Tensile Testing                                                 | <input type="checkbox"/> @ °C <input type="checkbox"/> @ °F | @                                                           | @           | @                |
| 19 | Minimum Yield Strength                                                               | <input type="checkbox"/> MPa <input type="checkbox"/> ksi   |                                                             |             |                  |
| 20 | Minimum Tensile Strength                                                             | <input type="checkbox"/> MPa <input type="checkbox"/> ksi   |                                                             |             |                  |
| 21 | Maximum Pipe Length                                                                  | <input type="checkbox"/> m <input type="checkbox"/> ft      |                                                             |             |                  |
| 22 | Minimum Pipe Length                                                                  | <input type="checkbox"/> m <input type="checkbox"/> ft      |                                                             |             |                  |
| 23 | Minimum Average Pipe Length                                                          | <input type="checkbox"/> m <input type="checkbox"/> ft      |                                                             |             |                  |
| 24 | End Finish (Plain or Square)                                                         | -                                                           |                                                             |             |                  |
| 25 | Bevel Protectors Required?                                                           | -                                                           |                                                             |             |                  |
| 26 | Design Code (BS, ASME, DnV, etc.)                                                    | -                                                           |                                                             |             |                  |
| 27 | Additional Requirements                                                              | -                                                           |                                                             |             |                  |
|    | <b>Charpy V-notch Impact Tests</b>                                                   |                                                             |                                                             |             |                  |
| 28 | Test Temperature                                                                     | <input type="checkbox"/> °C <input type="checkbox"/> °F     |                                                             |             |                  |
| 29 | Energy Requirement - Pipe Body                                                       | J max                                                       |                                                             |             |                  |
| 30 |                                                                                      | J min                                                       |                                                             |             |                  |
| 31 | Specimen Size & Orientation                                                          | -                                                           |                                                             |             |                  |
|    | <b>Coating Requirements:</b>                                                         |                                                             |                                                             |             |                  |
| 32 | Internal                                                                             | Type                                                        |                                                             |             |                  |
| 33 |                                                                                      | Thickness                                                   | <input type="checkbox"/> mm <input type="checkbox"/> mils   |             |                  |
| 34 | External                                                                             | Type                                                        |                                                             |             |                  |
| 35 |                                                                                      | Thickness                                                   | <input type="checkbox"/> mm <input type="checkbox"/> mils   |             |                  |
|    | <b>Pipeline Contents/Water Chemistries (PW=Produced Water, CW=Condensing Water):</b> |                                                             |                                                             |             |                  |
|    | Product                                                                              |                                                             | Product                                                     |             | Product          |
| 36 | Cl (PW)                                                                              | mg/L                                                        | Sr                                                          | mg/L        | HCO <sub>3</sub> |
| 37 | Cl (CW)                                                                              | Mg/L                                                        | Mg                                                          | mg/L        | Fe               |
| 38 | SO <sub>4</sub>                                                                      | mg/L                                                        | Na (PW)                                                     | mg/L        | Fatty Acids      |
| 39 | Ba                                                                                   | mg/L                                                        | Na (CW)                                                     | Mg/L        | Water Content    |
| 40 | Ca                                                                                   | mg/L                                                        | K                                                           | mg/L        | Other            |
| 41 | Partial Pressure CO <sub>2</sub> (at Normal Operating Conditions)                    |                                                             | <input type="checkbox"/> kPaa <input type="checkbox"/> psia |             |                  |
| 42 | Partial Pressure CO <sub>2</sub> (at Design Conditions)                              |                                                             | <input type="checkbox"/> kPaa <input type="checkbox"/> psia |             |                  |
| 43 | Partial Pressure H <sub>2</sub> S (at Normal Operating Conditions)                   |                                                             | <input type="checkbox"/> kPaa <input type="checkbox"/> psia |             |                  |
| 44 | Partial Pressure H <sub>2</sub> S (at Design Conditions)                             |                                                             | <input type="checkbox"/> kPaa <input type="checkbox"/> psia |             |                  |
| 45 | In situ pH                                                                           | Produced Water                                              | -                                                           |             |                  |
| 46 | (at Pressure and Temperature)                                                        | Condensed Water                                             | -                                                           |             |                  |



|                                                                                                                                                     |                                                                                                                                                         |                                      |                  |        |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------|--------|---------|
| Manufacturing Procedure Specifications and Manufacturing Procedure Qualification test results shall be submitted to the undersigned for evaluation. |                                                                                                                                                         |                                      |                  |        |         |
| <b>Signed:</b>                                                                                                                                      |                                                                                                                                                         |                                      |                  |        |         |
| 1                                                                                                                                                   | Authorised Materials Engineer _____                                                                                                                     |                                      | Date: _____      |        |         |
| 2                                                                                                                                                   | Authorised Materials Engineer _____                                                                                                                     |                                      | Date: _____      |        |         |
| <b>Corrosion Test Conditions:</b>                                                                                                                   |                                                                                                                                                         |                                      |                  |        |         |
| Test                                                                                                                                                |                                                                                                                                                         | SSC-PW                               | SSC-CW           | SCC-PW | Pitting |
| 3                                                                                                                                                   | Test Required?                                                                                                                                          |                                      |                  |        |         |
| 4                                                                                                                                                   | Acetic Acid (µL/L (ppmv))                                                                                                                               |                                      |                  |        |         |
| 5                                                                                                                                                   | Water Chemistry<br>(g/L)                                                                                                                                | CaCl <sub>2</sub> .6H <sub>2</sub> O |                  |        |         |
| 6                                                                                                                                                   |                                                                                                                                                         | MgCl <sub>2</sub> .6H <sub>2</sub> O |                  |        |         |
| 7                                                                                                                                                   |                                                                                                                                                         | KCl                                  |                  |        |         |
| 8                                                                                                                                                   |                                                                                                                                                         | SrCl <sub>2</sub> .6H <sub>2</sub> O |                  |        |         |
| 9                                                                                                                                                   |                                                                                                                                                         | BaCl <sub>2</sub> .2H <sub>2</sub> O |                  |        |         |
| 10                                                                                                                                                  |                                                                                                                                                         | NaCl                                 |                  |        |         |
| 11                                                                                                                                                  |                                                                                                                                                         | Na <sub>2</sub> SO <sub>4</sub>      |                  |        |         |
| 12                                                                                                                                                  |                                                                                                                                                         | NaHCO <sub>3</sub>                   |                  |        |         |
| 13                                                                                                                                                  | Gas Partial Pressures <sup>(1)</sup>                                                                                                                    |                                      | H <sub>2</sub> S |        |         |
| 14                                                                                                                                                  | <input type="checkbox"/> kPaa <input type="checkbox"/> psia                                                                                             |                                      | CO <sub>2</sub>  |        |         |
| 15                                                                                                                                                  | Temperature <input type="checkbox"/> °C <input type="checkbox"/> °F                                                                                     |                                      |                  |        |         |
| <b>Notes:</b>                                                                                                                                       |                                                                                                                                                         |                                      |                  |        |         |
| 16                                                                                                                                                  | <sup>(1)</sup> If (H <sub>2</sub> S plus CO <sub>2</sub> ) pressure is less than 14.5 psia (100 kPaa), the test pressure shall be adjusted to 14.5 psia |                                      |                  |        |         |
| 17                                                                                                                                                  | (100 kPaa) using pure Nitrogen.                                                                                                                         |                                      |                  |        |         |
| 18                                                                                                                                                  | <b>Remarks:</b>                                                                                                                                         |                                      |                  |        |         |
| 19                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 20                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 21                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 22                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 23                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 24                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 25                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 26                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 27                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 28                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 29                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 30                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 31                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 32                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 33                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 34                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 35                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 36                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 37                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 38                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 39                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 40                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| No.                                                                                                                                                 |                                                                                                                                                         | DATE                                 | REVISION         | BY     | APP.    |
| 47                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 48                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 49                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |
| 50                                                                                                                                                  |                                                                                                                                                         |                                      |                  |        |         |