



## Inspection and Test Plan

Document No.: HUNANSTEELITP-Z  
110328

Page 1 of 6

Rev 00

### Inspection and Test Plan For SSAW steel pipe

Client:

Specification: EN 10224 S275 & contract specification

Grade: S275

Size: As below



## Inspection and Test Plan

Document No.: HUNANSTEELITP-Z  
110328

Page 2 of 6

Rev 00

### Related terms are defined as follow:

- |                |   |
|----------------|---|
| <b>HOLD</b>    | The relevant inspectors shall be informed of time and location of testing and witnessing is required for each unit. Witnessing is mandatory the cycle and written notice through a registered check advice at least 2 week in advance for special inspection or important stages and 24hours in advance for regular inspection. Customer representative shall sign and seal the reports.  |
| <b>Witness</b> | The relevant inspectors shall be informed of time and location of testing through a registered check advice or other kind of official letter which shall be submitted to related parties at least 2 week in advance for special inspection or important stages and 24 hours in advance for regular inspection. However, work may proceed without the presence of the inspector discretion. Customer representative shall sign and seal the reports. |
| <b>Monitor</b> | Work proceeds without the presence and special information of the test. Inspectors reserve the right to attend this activity at any time.   |
| <b>Review</b>  | Check of certifications and /or documents, with approved procedures, specification and acceptance criteria. Documents reviewed by Customer representative, shall be signed and sealed as reviewed.  |
| <b>Perform</b> | Mill performs.  |



## Inspection and Test Plan

Document No.: HUNANSTEELITP-Z  
110328

Page 3 of 6

Rev 00

No.	Quality control action	Inspection item	Acceptance criterion.	Relevant documents	Shinestar inspection	Owner inspection
1.0	Control prior to production					
1.1	Welder qualification	<ul style="list-style-type: none"> <li>Welder qualification certificate</li> </ul>		<ul style="list-style-type: none"> <li>Welder qualification certificate</li> </ul>	Submittal	R
1.2	NDT operator qualification	<ul style="list-style-type: none"> <li>NDT personnel certificate</li> </ul>		<ul style="list-style-type: none"> <li>NDT personnel certificate</li> </ul>	Submittal	R
1.3	Calibration of test or inspection equipment and instrument	<ul style="list-style-type: none"> <li>Calibration certificate</li> </ul>		<ul style="list-style-type: none"> <li>Calibration certificate</li> </ul>	Submittal	R
1.4	Strips steel control	<ul style="list-style-type: none"> <li>Strips steel incoming check</li> <li>Strips steel storage</li> </ul>	<ul style="list-style-type: none"> <li>Purchase order</li> <li>Product tracking procedure</li> </ul>	<ul style="list-style-type: none"> <li>strips steel mill certificate</li> </ul>	Submittal	M/R
1.5	Welding consumables control	<ul style="list-style-type: none"> <li>Incoming check</li> <li>Mill certificate</li> <li>Handling and storage</li> <li>Drying record</li> </ul>	<ul style="list-style-type: none"> <li>Welding material spec.</li> <li>Relevant national standard</li> </ul>	<ul style="list-style-type: none"> <li>Incoming check record</li> <li>Flux certificate</li> <li>Wire certificate</li> <li>Electrode mill certificate</li> <li>Drying record</li> </ul>	Submittal	M/R
1.6	Spiral Welding Procedure Qualification Test	<ul style="list-style-type: none"> <li>Tensile test</li> <li>Impact test</li> <li>Guided bend test</li> <li>Weld seam macrograph test</li> <li>Hardness test</li> </ul>	<ul style="list-style-type: none"> <li>EN10224 S275</li> <li>contract specification</li> </ul>	<ul style="list-style-type: none"> <li>MPQT test report</li> </ul>	P	M/R
1.7	Repair Welding Procedure Qualification Test	<ul style="list-style-type: none"> <li>Tensile test</li> <li>Impact test</li> <li>Guided bend test</li> <li>Weld seam macrograph test</li> <li>Hardness test</li> </ul>	<ul style="list-style-type: none"> <li>EN10224 S275</li> <li>contract specification</li> </ul>	<ul style="list-style-type: none"> <li>PQR</li> </ul>	P	M/R
1.8	Repair Welder Qualification Test	<ul style="list-style-type: none"> <li>Guided bend test</li> </ul>	<ul style="list-style-type: none"> <li>EN10224 S275</li> <li>contract specification</li> </ul>	<ul style="list-style-type: none"> <li>WPQR</li> </ul>	P	M/R



## Inspection and Test Plan

No.	Quality control action	Inspection item	Acceptance criterion.	Relevant documents	Shinestar inspection	Owner inspection
2.0	Process control					
2.1	Strips steel reception	<ul style="list-style-type: none"> <li>● Strips steel certificate</li> <li>● Marking Amount</li> <li>● Visual check Dimensions</li> <li>● Grade/size</li> <li>● Heat No. Batch No.</li> </ul>	<ul style="list-style-type: none"> <li>● Strips steel purchase spec.</li> <li>● Purchase order</li> </ul>	<ul style="list-style-type: none"> <li>● Reception report</li> <li>● Unacceptable strips steel feedback</li> </ul>	P	R
2.2	Forming	<ul style="list-style-type: none"> <li>● Surface quality</li> <li>● Gap after forming</li> <li>● Circumference ● Bevel dimension</li> </ul>	<ul style="list-style-type: none"> <li>● EN10224 S275</li> <li>● contract specification</li> </ul>	<ul style="list-style-type: none"> <li>● Forming procedure</li> </ul>	P	M
2.3	Welding Control	<ul style="list-style-type: none"> <li>● Weld profile</li> </ul>	<ul style="list-style-type: none"> <li>● EN10224 S275</li> <li>● contract specification</li> </ul>	<ul style="list-style-type: none"> <li>● Tack welding record</li> <li>● Inside and outside welding record</li> <li>● Outside check record</li> </ul>	P	M
2.4	Automatic and manual UT of weld seam	<ul style="list-style-type: none"> <li>● Defects in weld and HAZ of each pipe</li> <li>● Reference calibration</li> </ul>	<ul style="list-style-type: none"> <li>● UT procedure</li> </ul>	<ul style="list-style-type: none"> <li>● UT report</li> <li>● Manual UT report</li> </ul>	P	M/R
2.5	X-ray Real Time Imaging Inspection of Pipe Weld Seam	<ul style="list-style-type: none"> <li>● Defects in weld and HAZ of each pipe</li> </ul>	<ul style="list-style-type: none"> <li>● RT procedure</li> </ul>	<ul style="list-style-type: none"> <li>● RT report</li> </ul>	P	M/R
2.6	Repair welding	<ul style="list-style-type: none"> <li>● Electrode complying requirements</li> <li>● Drying temperature</li> <li>● Holding oven</li> <li>● Welding amount, length, spacing, position</li> <li>● Welding quality</li> </ul>	<ul style="list-style-type: none"> <li>● EN10224 S275</li> <li>● contract specification</li> </ul>	<ul style="list-style-type: none"> <li>● Repair record</li> </ul>	P	M/R
No.	Quality control action	Inspection item	Acceptance criterion.	Relevant documents	Shinestar inspection	Owner inspection



## Inspection and Test Plan

2.10	Hydrostatic test	<ul style="list-style-type: none"> <li>●Gauge calibration</li> <li>●Pressure/duration</li> <li>●Leakage Surface quality</li> </ul>	<ul style="list-style-type: none"> <li>●EN10224 S275</li> <li>●contract specification</li> </ul>	<ul style="list-style-type: none"> <li>●Hydrostatic test record</li> <li>●Pressure chart</li> </ul>	P	M
2.11	Chemical and mechanical test	<ul style="list-style-type: none"> <li>●chemical analysis</li> <li>●Tensile test</li> <li>●Impact test</li> <li>●Guided bend test</li> <li>●Weld seam macrograph test</li> <li>●Hardness test</li> </ul>	<ul style="list-style-type: none"> <li>●EN10224 S275</li> <li>●contract specification</li> </ul>	<ul style="list-style-type: none"> <li>●Test report</li> </ul>	P	M/W
2.12	UT of weld seam after hydro-test	<ul style="list-style-type: none"> <li>●Defects in weld and HAZ of each pipe</li> <li>●Reference calibration</li> </ul>	<ul style="list-style-type: none"> <li>●UT procedure</li> </ul>	<ul style="list-style-type: none"> <li>●UT report</li> <li>●Manual UT report</li> </ul>	P	M/R
2.13	X-ray film radiography inspection of pipe end weld seam	<ul style="list-style-type: none"> <li>●Defects in weld and HAZ of each pipe end</li> </ul>	<ul style="list-style-type: none"> <li>●RT procedure</li> </ul>	<ul style="list-style-type: none"> <li>●RT report</li> </ul>	P	M/R
2.14	X-ray Real Time Imaging Inspection of full length Weld Seam	<ul style="list-style-type: none"> <li>●Defects in weld and HAZ of each pipe</li> </ul>	<ul style="list-style-type: none"> <li>●RT procedure</li> </ul>	<ul style="list-style-type: none"> <li>●RT report</li> </ul>	P	M/R
2.15	End facing inspection	<ul style="list-style-type: none"> <li>●Randomly check</li> <li>●End bevel and root face</li> </ul>	<ul style="list-style-type: none"> <li>●EN10224 S275</li> <li>●contract specification</li> </ul>	<ul style="list-style-type: none"> <li>●Dimension record</li> </ul>	P	M
No.	Quality control action	Inspection item	Acceptance criterion.	Relevant documents	Shinestar inspection	Owner inspection



## Inspection and Test Plan

Document No.: HUNANSTEELITP-Z  
110328

Page 6 of 6

Rev 00

2.17	Finish inspection	<ul style="list-style-type: none"> <li>●Diameter      Out-of-roundness</li> <li>●Wall thickness      Length</li> <li>●Pipe end dimension</li> <li>●Radial offset      Undercut</li> <li>●Dent      Hard spot</li> <li>●Are burns      Weld dimension</li> <li>●Surface quality</li> <li>●Pipes with bracing</li> <li>●Pipes with metal caps</li> </ul>	<ul style="list-style-type: none"> <li>●EN10224 S275</li> <li>●contract specification</li> </ul>	●Dimension record	P	M/R
2.18	Marking	<ul style="list-style-type: none"> <li>●Marking item and position</li> </ul>			P	M
2.19	General check	<ul style="list-style-type: none"> <li>●Check Marks</li> <li>●Pipe stacking</li> <li>●No damage from lifting</li> </ul>	<ul style="list-style-type: none"> <li>●Storage, handling and shipping procedure</li> </ul>	●Inspection record	P	M/R
2.20	Dock shipping	<ul style="list-style-type: none"> <li>●Check pipe end for damage</li> <li>●Check pipe body for damage</li> </ul>	<ul style="list-style-type: none"> <li>●Shipping procedure</li> </ul>	●Dock shipping check record	P	M/R
2.21	Pipe mill certificate review	<ul style="list-style-type: none"> <li>●Review certificate content and form</li> </ul>		●Quality certificate signed by owner	Submittal	H/R