TRANSNET ENGINEERING

SPECIFICATION FOR TESTING WELDED TEST PIECES

Date of release

02 March 2017

Doc. No. PD_WE_NAT_SPEC_002

Revision: 02

SUMMARY OF REVISIONS

First issue – 02 March 2017 Document No: PD_WE_NAT_SPEC_002

Second issue – 26 April 2017 Document No: PD_WE_NAT_SPEC_002

Third issue – 03 July 2019 Document No: PD_WE_NAT_SPEC_002

The following revisions have been made in this version:

Change	Description
089 836 548	Table 1: Scope of work – Item 089 836 548 added to scope of work.
089 841 451	Table 1: Scope of work – Item 089 841 451 added to scope of work.
089 841 460	Table 1: Scope of work – Item 089 841 460 added to scope of work.
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089 841 453	Table 1: Scope of work – Item 089 841 453 added to scope of work.
089 841 452	Table 1: Scope of work – Item 089 841 452 added to scope of work.
Document Authorities	Document authorities signatories amended

Document Control

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Supporting Procedure	

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1. SCOPE

A testing facility is required to conduct non-destructive and destructive tests on welded specimens. The details of these tests are given in the 'Scope of work' section. The testing facility should be SANAS accredited. The specimens will be delivered to the testing facility in the 'as-welded' condition. The testing facility will be required to:

- Prepare the samples for testing
- Conduct the testing
- Issue the test report
- Preserve the tested samples for future collection
- Additionally offer engineering services post testing and provide guidance on reducing or eliminating defects or non-conformance on tested samples.

2. SCOPE OF WORK

Table 1 provides the scope of work.

Table 1: Scope of work

SAP Material number	Service Identification	Service Description
089 835 402	PQR full pen < 12 mm	Standard: EN ISO 15614-1 Thickness : < 12 mm Extent of testing: 100% visual testing Transverse tensile test – 2 specimens Transverse bend test – 4 specimens (two root and two face bends) Impact tests – Not required Hardness test – Required Macroscopic examination – 1 specimen
089 835 403	PQR full pen ≥ 12 mm	Standard: EN ISO 15614-1 Thickness : ≥ 12 mm Extent of testing: 100% visual testing Transverse tensile test – 2 specimens Transverse bend test – 4 specimens (two root and two face bends) Impact tests – Required (2 sets) Hardness test – Required Macroscopic examination – 1 specimen
089 835 404	PQR T-joint/branch connection full pen < 12 mm	Standard: EN ISO 15614-1 Thickness : < 12 mm Extent of testing: 100% visual testing Hardness test – Required Macroscopic examination – 2 specimens

089 835 405	PQR T-joint/branch connection full pen ≥ 12 mm	Standard: EN ISO 15614-1 Thickness : ≥ 12 mm Extent of testing: 100% visual testing Hardness test – Required Macroscopic examination – 2 specimens
089 835 406	PQR Fillet welds < 12 mm	Standard: EN ISO 15614-1 Thickness : < 12 mm Extent of testing: 100% visual testing Hardness test – Required Macroscopic examination – 2 specimens
089 835 407	PQR Fillet welds ≥ 12 mm	Standard: EN ISO 15614-1 Thickness : ≥ 12 mm Extent of testing: 100% visual testing Hardness test – Required Macroscopic examination – 2 specimens
089 835 408	Butt weld (Plate or pipe)	Standard: EN ISO 9606-1 Extent of testing: 100% visual testing according to ISO 17637 Bend test according to ISO 5173 – 4 Specimens
089 835 409	Fillet weld and branch joint	Standard: EN ISO 9606-1 Extent of testing: 100% visual testing according to ISO 17637 Macroscopic examination according to ISO 17639 – 2 Specimens
089 835 410	Pre-production samples	Standard: EN ISO 5817 Extent of testing: 100% visual testing according to ISO 17637 Macroscopic examination according to ISO 5817-B

011 835 411	Ultrasonic testing (UT)	Standard: ISO 17640 Extent of testing: 100% Size of sample: 350 mm x 150 mm x t NDT Personnel: Must be in possession of a valid ISO 9712 UT Level II qualification
089 835 412	Radiographic testing (RT)	Standard: ISO 17636 Extent of testing: 100% Size of sample: 350 mm x 150 mm x t NDT Personnel: Must be in possession of a valid ISO 9712 RT Level II qualification
089 835 413	Magnetic particle testing (MT)	Standard: ISO 17638 Extent of testing: 100% Size of sample: 350 mm x 150 mm x t NDT Personnel: Must be in possession of a valid ISO 9712 MT Level II qualification
089 835 414	Penetrant testing (PT)	Standard: ISO 3452-1 Extent of testing: 100% Size of sample: 350 mm x 150 mm x t NDT Personnel: Must be in possession of a valid ISO 9712 PT Level II qualification
089 835 416	Visual testing (VT)	Standard: ISO 17637 Extent of testing: 100% Size of sample: 350 mm x 150 mm x t NDT Personnel: Must be in possession of a valid ISO 9712 VT Level II qualification
089 835 417	Chemical analysis	Standard: ISO 17637 Extent of testing: 1 specimen
089 835 418	Tensile testing	Standard: ISO 6892-1 Extent of testing: 1 specimen
089 835 419	Impact testing	Standard: ISO 148-1 Extent of testing: 1 set of specimen
089 835 420	Hardness testing	Standard: ISO 6506-1 Extent of testing: 1 specimen
089 835 421	Macroscopic examination	Standard: ISO 17639 Extent of testing: 1 specimen
089 835 422	Microscopic examination	Standard: ISO 17639

		Extent of testing: 1 specimen
089 835 423	Diffusible hydrogen test	Standard: AWS Specifications Extent of testing: 1 specimen
089 835 424	Witnessing of welding at a Transnet facility	An independent examination body registered with an authorised body with hourly rate and travel rate well defined.
089 835 425	Witnessing of testing at the lab	An independent examination body registered with an authorised body with hourly rate clearly defined.
089 836 548	NDT Level 3 ISO 9712	NDT personnel with Level 3 Qualification in VT, PT, MT, UT and RT in accordance with ISO 9712.
089 841 451	Post Weld Heat Treatment (PWHT)	Tests should be in accordance of EN ISO 14745, AWS and ASME based on whichever code is required.
089 841 460	Filler Weld and branch joint (Welder Qualification)	Tests should be performed in accordance of ASME IX: 2017
089 841 459	Butt weld (Plate or pipe) (Welder Qualification)	Tests should be performed in accordance of ASME IX: 2017
089 841 458	Chemical Wet Analysis	Tests should be in accordance of EN ISO, AWS and ASME based on whichever code is required.
089 841 457	PQR – Fillet weld	Tests should be performed in accordance of ASME IX: 2017
089 841 456	PQR – Butt weld	Tests should be performed in accordance of ASME IX: 2017
089 841 455	PQR – Filler Weld	Tests should be performed in accordance of AWS D15.1
089 841 454	PQR – Butt weld	Tests should be performed in accordance of AWS D15.1
089 841 453	Filler Weld and branch joint (Welder Qualification)	Tests should be performed in accordance of AWS D15.1
089 841 452	Butt weld (Plate or pipe) (Welder Qualification)	Tests should be performed in accordance of AWS D15.1
068019631/2	AIA inspection	AIA inspection

3. ACKNOWLEDGEMENT AND ACCEPTANCE OF SPECIFICATION

It is hereby acknowledged that the bidder has read and understood all the contents of this specification. Furthermore, the bidder certifies and guarantees acceptance and compliance with this specification.

SIGNED THIS DAY _____ AT_____

BY_____ (Full name in block letters)

IN MY CAPACITY AS _____ (Official designation)

FOR THE COMPANY _____

SIGNED _____

DOCUMENT AUTHORITIES

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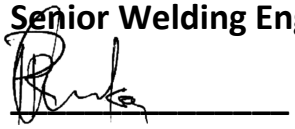
SIGNATURE	
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