LMATS
Laboratories for Materials Advanced Testing Services

- ✓ NDT & Inspection
- ✓ Hydrostatic testing
- ✓ Weld qualification
- ✓ Concrete testing
- ✓ Mechanical testing
- ✓ Metallurgical services
- ✓ Chemical analysis & PMI
- ✓ Pressure plant inspection

Penetrant test report

Validate this report

Report number	LW26-0253-07 PT Rev. 1 (This report supersedes LW26-0253-07 PT)
Customer name	AAS STEEL PTY LTD
Address	9 Trade Place Pakenham VIC Australia 3810
Requested by	Shan Senn
Purchase Order	01000824
Accredited laboratory	LMATS Melbourne Laboratory
Test date	06/03/2026
Job address	13 Paramount Road West Footscray
Job description	Visible dye penetrant testing on 350NB header weldments
Identification	Job: VMM00120 NEXT DC M3 STAGE 2; Drawing: SDRG-B-0201-8241
Material grade	Stainless Steel- Grade not specified
Test specification	Client's requirement - Report findings
Test method	AS ISO 3452.1:2021-PT - colour contrast
Test designation	ISO 3452-2, IICeL2-Colour contrast (visible), solvent removal & developer, L2 sensitivity
Test procedure	TP-PT-15 (I2, R1)
Production Stage	After fabrication, in-situ
Test area	Weld zone & associated HAZ (Refer Table 1 for identification)
Test temperature	18°C to 21 °C approximate range
Equipment	L004715 Light meter Hold Peak 881D
Lighting conditions	White light illuminance >1200 lx
Surface condition	As welded, blended intermittently
Surface preparation	Solvent flushed and wiped. Natural evaporation.

Chemicals details	**Brand name**	**Batch No.**	**Dwell time (Mins.)**
Precleaner	MR Chemie MR85	85/2005	Not applicable
Penetrant	MR Chemie MR311-R	221108	20
Developer	MR Chemie MR70I	70I/2003	15
Remover	Not Applicable	Not Applicable	Not applicable

Approved tester	Lachlan Hooppell (SNT-TC-1A and AINDT L2 - RT MT PT)
Other testers	Mark Borg (AINDT L2 - MT ET / SNT-TC-1A L2 - RT MT & L1 UTT)
Test results	Refer to Table 1 for test area identification and results

ilac-MRA NATA
Accreditation No. 15840

Accredited for compliance with ISO / IEC 17025 - Testing

Signatory
Lachlan Hooppell
(SNT-TC-1A and AINDT L2 - RT MT PT)

Report issued on 11/03/2026

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Table 1: Test items identification (provided by the client) and results (All dimensions in mm unless stated otherwise)

Identification	Spool No.	Weld No.	Description	Test area	Discontinuities
South end	Spool 4	1	Bottom header	7-5 o'clock Facing north	LS35 @ 12ocl, CC5 @ 2ocl, LS20 @ 4ocl, LS50 @ 6ocl, LS15 @ 7ocl, uniform porosity
South end	Spool 4	2	Bottom header	7-5 o'clock Facing east	LS30 @ 6ocl, LS25 @ 1ocl, LS15 @ 3ocl, uniform porosity
South end	Spool 4	3	Bottom header	7-5 o'clock Facing west	CC5 @ 10ocl, LS25 @ 10ocl, LS15 @ 12ocl, CC10 @ 3ocl, LS10 @ 3ocl, uniform porosity
South end	Spool 4	4	Bottom header	7-5 o'clock Facing east	CC10 @ 7ocl, LS10 @ 11ocl, LS30 @ 9ocl, LS25 @ 6ocl, uniform porosity
South end	Spool 4	5	Bottom header	7-5 o'clock Facing west	CC3 @ 12ocl, CC10 @ 12ocl, LS25 @ 12ocl, LS15 @ 3ocl, LS30 @ 5ocl, LS40 @ 8ocl, uniform porosity
South end	Spool 4	6	Bottom header	7-5 o'clock Facing south	Uniform porosity
South end	Spool 4	7	Bottom header	7-5 o'clock Facing east	CC10 @ 1ocl, LS10 @ 12ocl, GP1 @ 3ocl, GP1 @ 3ocl, LS40 @ 4ocl
South end	Spool 4	8	Bottom header	7-5 o'clock Facing west	LS60 @ 6ocl, LS50 @ 7ocl, LS15 @ 3ocl, LS20 @ 1ocl, LS35 @ 9ocl
South end	Spool 4	9	Bottom header	7-5 o'clock Facing east	LS15 @11ocl, LS20 @ 6ocl, CC15 @ 7ocl
South end	Spool 4	10	Bottom header	7-5 o'clock Facing west	CC5 @12ocl, CC5 @ 12ocl, LS30 @ 3ocl, LS80 @ 6ocl, LS60 @ 7ocl, LS20 @ 9ocl
South end	Spool 4	11	Bottom header	7-5 o'clock Facing south	LS20 @ 3ocl, uniform porosity
South end	Spool 4	1	Top header	6-12 o'clock Facing north	LS35 @ 9ocl, LS20 @ 8ocl, LS25 @ 7ocl, random blob of weld in PM @ position 7 possible hole repair
South end	Spool 4	2	Top header	Entire facing east	CC5 @ 1ocl, LS15 @ 9ocl, LS20 @ 8ocl, LS20 @ 6ocl, LS10 @ 7ocl
South end	Spool 4	3	Top header	Entire facing west	LS5 @ 11ocl, LS20 @ 3ocl
South end	Spool 4	4	Top header	Entire facing east	LS10 @ 2ocl, SSX15 @ 3ocl, LS15 @ 5ocl, LS15 @ 8ocl, LS20 @ 9ocl, LS20 @ 9ocl
South end	Spool 4	5	Top header	Entire facing west	LS25 @ 9ocl, LS20 @ 6ocl, LS15 @ 3ocl
South end	Spool 4	6	Top header	12-7 facing south	LS15 @ 12ocl, LS30 @ 3ocl, LS30 @ 5ocl, LS100 @ 6ocl, spatter

Identification	Spool No.	Weld No.	Description	Test area	Discontinuities
South end	Spool 4	7	Top header	NA	No access due to building edge
South end	Spool 4	8	Top header	NA	No access due to building edge
South end	Spool 4	9	Top header	NA	No access due to building edge
South end	Spool 4	10	Top header	NA	No access due to building edge
South end	Spool 4	11	Top header	NA	No access due to building edge

Test restrictions

Restricted access to 5-7 o'clock position of weld between header and grating, could not adequately apply dye and developer in these positions in-situ. Bolts at flanges also limiting access

Comments

Refer to attached images

Test, inspection process specific notes

- This test method cannot detect sub-surface discontinuities or surface opening discontinuities covered with coating.

Normative general notes

1. Test and inspection items may be discarded after 6 weeks, unless alternative arrangements are made with LMATS.

2. Samples, identification of samples and all job specific details were supplied by the client. The test results relate only to the items tested or sampled.

3. Any stated nominal pipe sizes and nominal thickness of the material were provided by the client.

4. Where applicable, the Measurement Uncertainty (MU) applies to the test results as per LMATS procedure. MU can be obtained by contacting one of LMATS ISO 17025 accredited laboratories.

5. Acceptance criteria is applied from the test specification. If the test specification does not include acceptance criteria, then the test or inspection results should be referred to a competent authority for further action.

6. Refer to the attached revision notes if this report has been revised. This report shall not be reproduced except in full without approval of the issuing laboratory to ensure that parts of a report are not taken out of context. The client or their representatives shall not edit this report.

7. LMATS or its professional indemnity insurance provider do not indemnify the contents within this report or the conformity of a tested product unless the invoice for the reported work is paid in full within the agreed credit terms. Reports will be revoked if the invoice for the completed work is not paid in full.

Abbreviations used in this report

A - No discontinuities detected
BT - Burn (melt) Through
C - Comply
CP - Crater Pipe
DNC - Does Not Comply
EC - Elongated Cavity (hollow bead)
F - Failed
GP - Gas Pore
HiLo - Linear misalignment
IC - Copper Inclusion
IL - Linear Inclusion (slag line)
IN - Inclusion
IO - Oxide Inclusion (wagon tracks)
IT - Tungsten Inclusion
KC - Crater crack
KL - Longitudinal crack
KT - Transverse crack
LI - lack of Inter-run fusion
LP - Incomplete root Penetration
LR - lack of Root fusion (missed edge)
LS - lack of Side fusion
NRRD - No Recordable Reflections Detected
NUSID - No unacceptable Surface Indications Detected
P - Passed
p.d. - Processing / film Defects
PG - Localized Porosity
PL - Linear Porosity
PU - Uniform Porosity
RP - Report findings
SED - Excessive Dressing (underflushing)
SGI - Incompletely filled Groove
SGS - Shrinkage Groove
SMG - Grinding Mark
SMH - Hammer Mark
SMT - Tool Mark (chipping mark)
SRC - Root Concavity (Suck back)
SSP - Spatter
SUC(e) - Undercut External
SUC(i) - Undercut Internal
SXP - Excessive Penetration
WH - Worm Hole

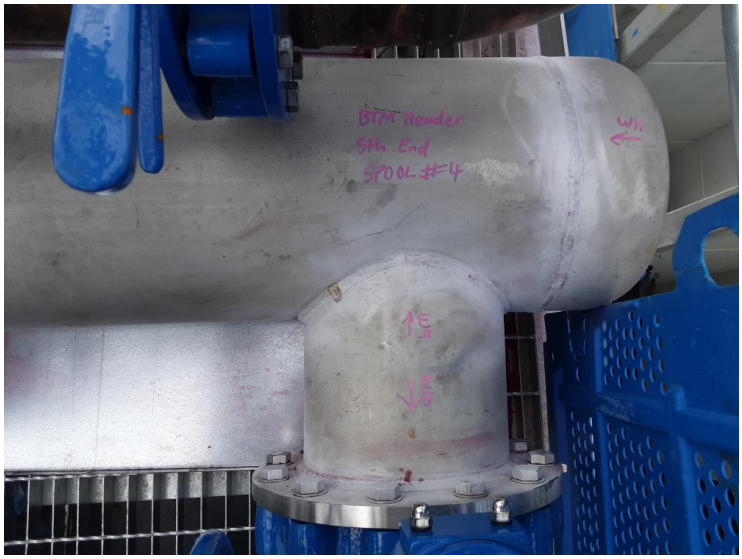


Image 1 of 6 - Bottom header South end spool #4 W9-11

Image 2 of 6 - Bottom header South end spool #4 W7-8

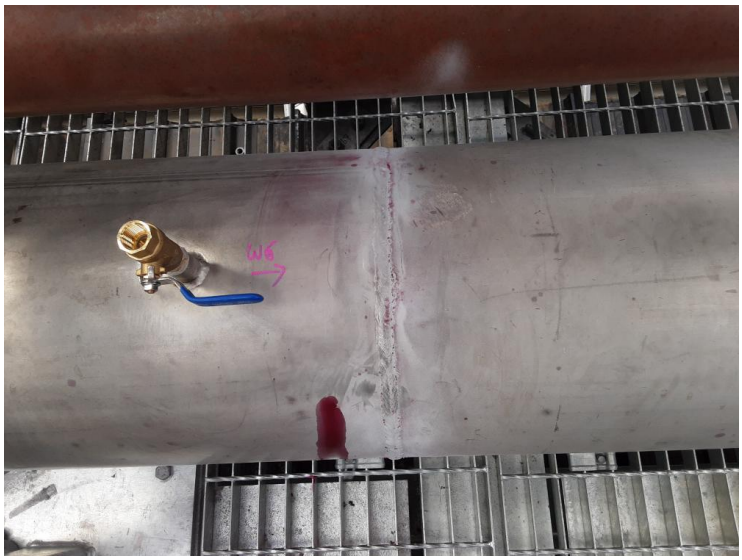


Image 3 of 6 - Bottom header South end spool #4 W6

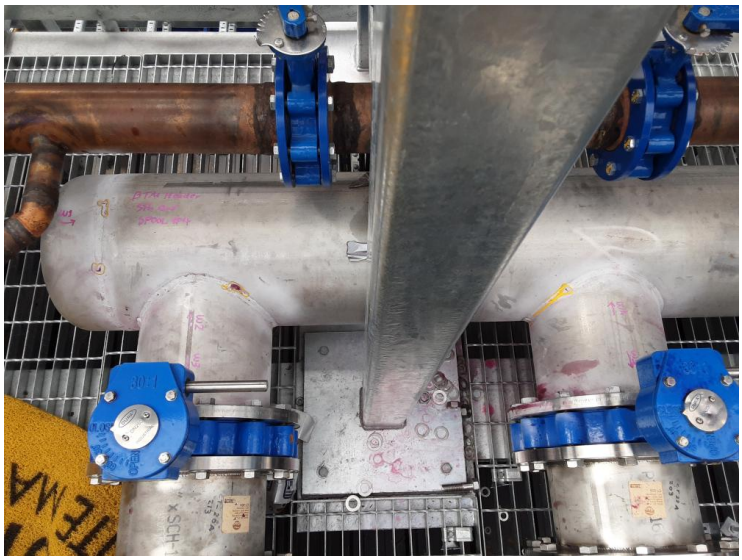
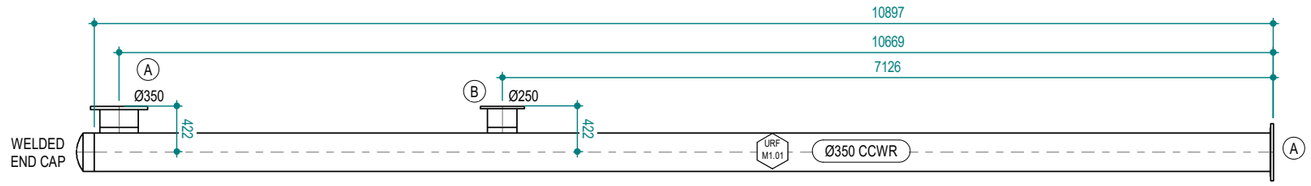


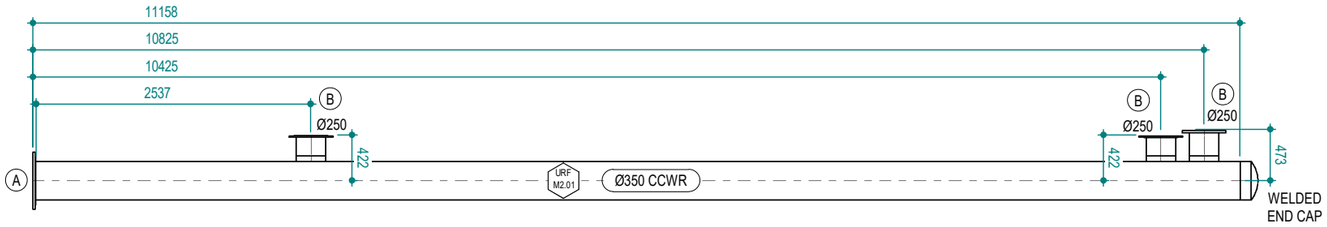
Image 4 of 6 - Bottom header South end spool #4 W1-5

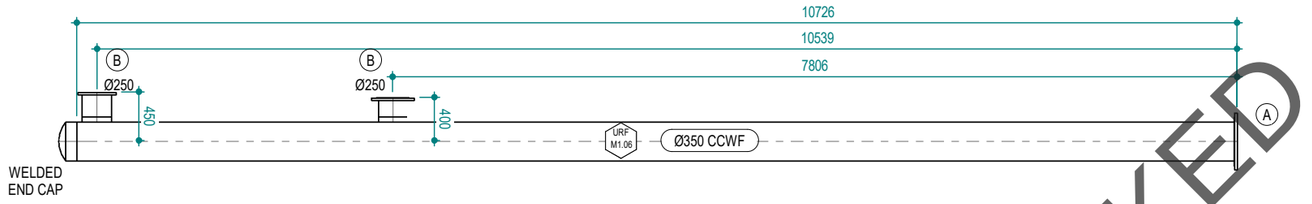
Image 5 of 6 - Top header South end spool #4 W6

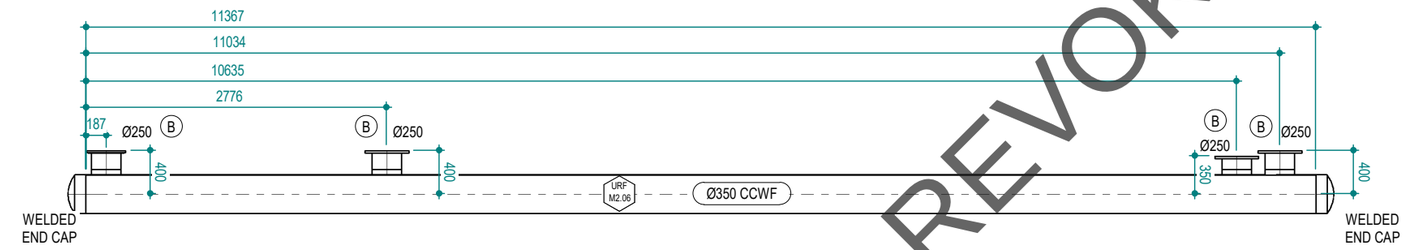
Image 6 of 6 - Top header South end spool #4 W1-5

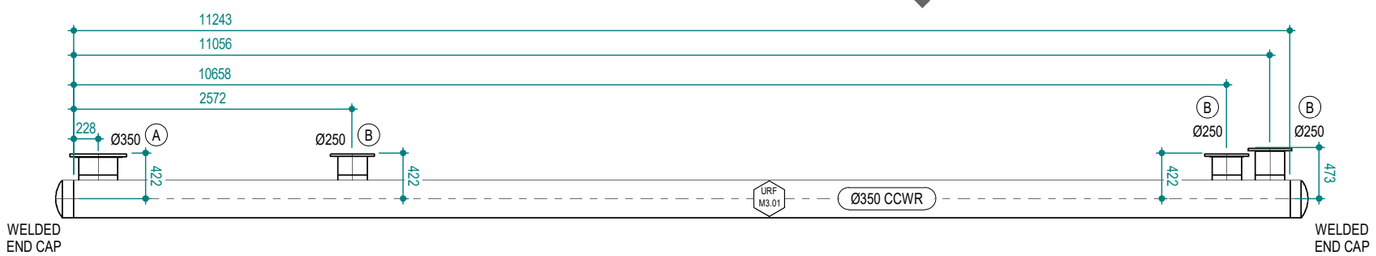
End of this report. The information contained within the subsequent pages (if any), comprises external documents provided by the client.

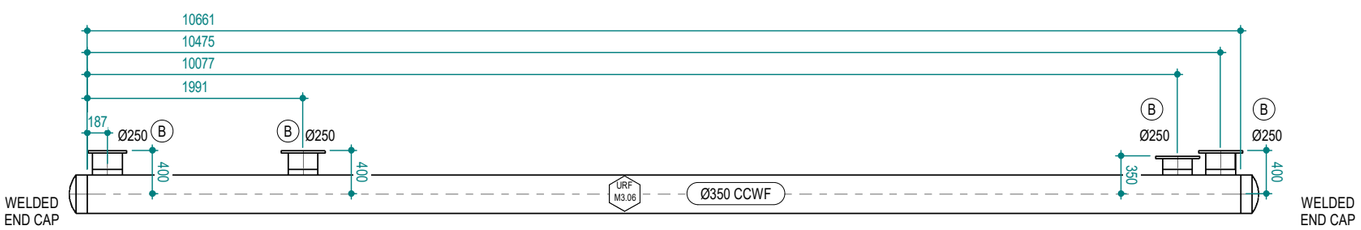




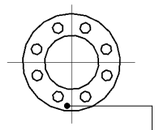








SCALE 1:50 UNLESS NOTED DIFFRENT



NOTE: FLANGE TO BE WELDED 2 HOLE CENTRE OF ELBLOW OR FITTING

MATERIAL LIST

CODE:	QTY:	SIZE:	DESCRIPTION OR CUTTING LENGTH:	END TREAT:
A	5	Ø350	TABLE 'E' FLANGE	
B	17	Ø250	TABLE 'E' FLANGE	

PIPE SPEC: STAINLESS STEEL GRADE 304 SCHEDULE 10

SYMBOL ABBREVIATIONS

WELDER	DATE
MATERIAL AS LISTED	
DIMENSIONS CHECKED	
CHECK FOR SQUARE	
CHECK CONFIGURATION	
IDENTIFICATION CHECK	
MATERIALS ORDERED BY	☐ SITE
	☐ WORKSHOP
DATE REQUIRED	

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JOB: VMM00120 NEXT DC M3 STAGE 2

DATE: 08.09.25	**REF.DRG.NO:** SDRG-B-0201-8241	
DRAWN: T.MOSER	**SKETCH NO:** URF-B1-M-CCW-001	FC-1

External document - 1 - URF-B1-M-CCW-001 [FC-1]

Normative revision notes for Report No. LW26-0253-07 PT Rev. 1

Result table Row No.: 12, Col.: Test area revised from "5-12 o'clock Facing north" to "6-12 o'clock Facing north"

Result table Row No.: 17, Col.: Test area revised from "Entire facing south" to "12-7 facing south"

Result table Row No.: 18, Col.: Test area revised from "Entire facing east" to "NA"

Result table Row No.: 19, Col.: Test area revised from "Entire facing west" to "NA"

Result table Row No.: 20, Col.: Test area revised from "Entire facing east" to "NA"

Result table Row No.: 21, Col.: Test area revised from "Entire facing west" to "NA"

Result table Row No.: 22, Col.: Description revised from "1Top header" to "Top header"

Result table Row No.: 22, Col.: Test area revised from "Entire facing south" to "NA"

Report No. revised from "LW26-0253-07 PT" to "LW26-0253-07 PT Rev. 1"