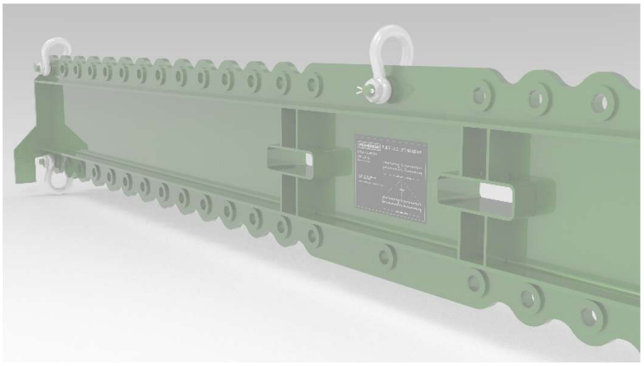
LGH
THE LIFTING EXPERTS
OPERATION MANUAL
(1800) 407-712 Enquiries@LGH.au LGH.au

UG LIFTING BEAM

OPERATION & MANUAL

Project No.: 311213-1 / 311213-2



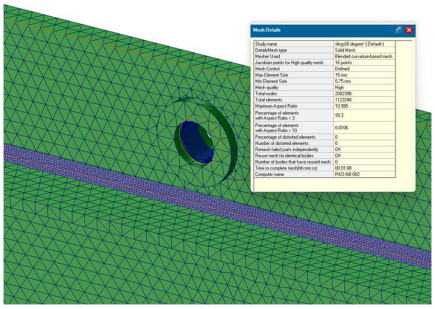
Contents

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9	Load Charts & Approved Configurations
10	General Operation
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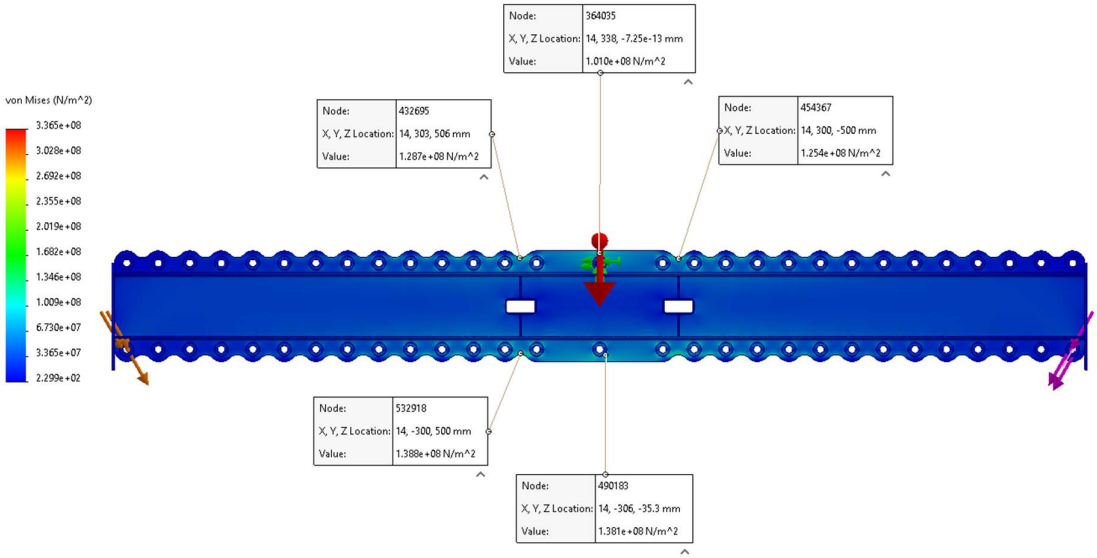
FEA Assessment

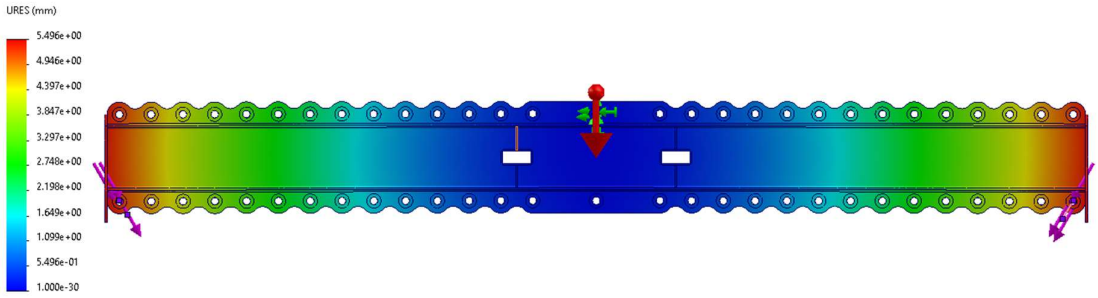
Structural design calculations and Finite Element Analysis (FEA) have been completed to verify compliance with the specified Working Load Limit (WLL). Design verification has been undertaken in accordance with the requirements of AS 4991:2004 Clause 12.3(b)(i).

Mesh quality:

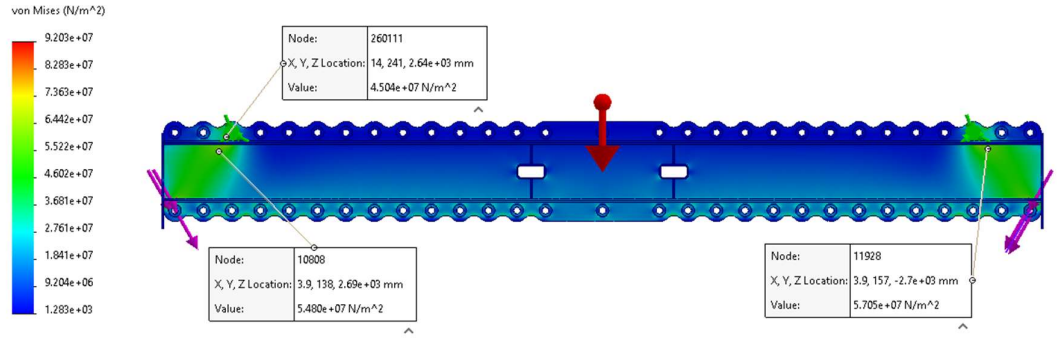


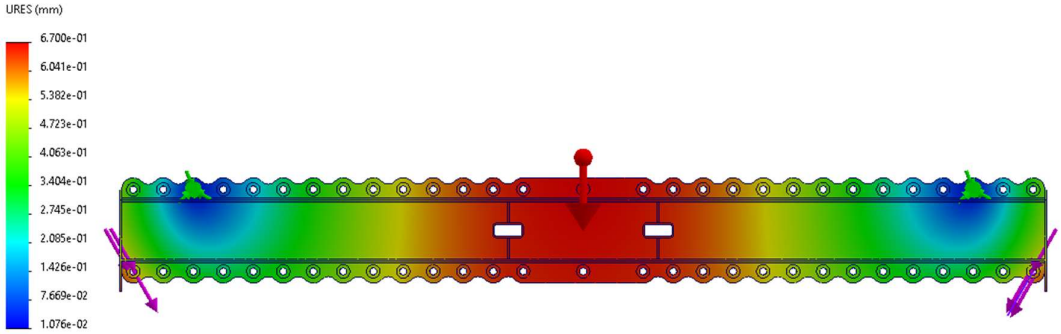
Lifting configuration: 15 t Lifting Mode





Lifting configuration: 25t Spreader (60° sling angle) Mode





Welding inspection report:

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

Magnetic particle test report

Validate this report

Report number	LS26-2014-02 MT
Customer name	PROCIFIC ENGINEERING PTY LTD
Address	51 powers road Seven Hills NSW Australia 2147
Requested by	Ali Salehian
Purchase Order	38430
Accredited laboratory	LMATS Sydney Laboratory
Test date	07/08/2026
Job address	51 powers road Seven Hills NSW Australia 2147
Job description	Beam
Identification	PK-311213-01
Material grade	Carbon steel
Test specification	AS/NZS 1554.1:2014 - Cl.6.2.2 Cat SP - NDT on welds
Acceptance criteria	AS/NZS 1554.1:2014 - Cl.6.2.2 Cat SP - NDT on welds
Test method	AS 1171 - 1998 (Reconfirmed 2022)-MT - colour contrast
Test procedure	TP-MT-01 (I1, R9)
Test type	Wet colour contrast (visible)
Viewing condition	Visible colour contrast (non-fluorescent)
Magnetization	Magnetic flow method - AC yoke
Test area	Weld zone & associated HAZ (Refer Table 1 for identification)
Surface condition	As welded
Equipment	L007046 Huatec HCDX-Y2 MT Yoke, L0001 LMATS L001 MT Calibration block, L003717 Digital GY0006110 Light meter
Lighting conditions	White light illuminance 1200 lx

Consumables

Background	Batch no.	Particle type	Batch no.
MR Chemie MR72	2509049	MR Chemie MR76S	2311072

Demagnetised	No
Approved tester	Lewis Henry
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
Mir Mominul Ahasan
(Asset Integrity Tech, AINDT L2 MT/PT/UT/ET)

Report issued on 11/08/2026

LMATS

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

Identification	Drawing No.	Description	Quantity	Test area	Weld type	Discontinuities	Result
PK-311213-01	A-PK-312746-00 rev 00	Beam	1	50%of welds and haz	Fillet	NUSID	C

Test restrictions
Nil

Comments
Nil

Test, inspection process specific notes
- According to the guidelines in international standards, Magnetic Particle Testing is not preferred for detecting surface porosity. Clients are advised to consider alternative methods such as Penetrant Testing to detect surface porosity on an uncoated surface.

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*	*XC - Crater crack*	*X1 - Longitudinal crack*
XT - 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*

Design Capacity

The Multi-Lug Lifting Beam is designed for use in the following approved configurations:

Spreader Beam Configuration:
Maximum WLL: 25 TONNES

- Top lifting slings shall be used at an angle of 60° to 90° from the horizontal.
- Load slings shall not exceed 30° from the vertical.
- The selected lifting lugs, sling arrangement and load position shall comply with the applicable load chart and approved lifting configuration.

Lifting Beam Configuration:
Maximum WLL: 15 TONNES

- The load shall be connected only to the designated lifting points.
- The applicable lug positions and rigging arrangement shall be selected in accordance with the approved load chart.
- Load slings shall not exceed 30° from the vertical, unless otherwise specifically verified by engineering analysis.

Refer to the approved load charts and lifting configuration drawings before use.

Permissible Uses

This device is designed for lifting and supporting loads through the designated lifting lugs and approved rigging arrangements.

The beam may be used in either the 15 tonne lifting beam configuration or the 25 tonne spreader beam configuration, subject to the applicable WLL, sling angles, lug positions and load configuration.

The equipment shall NOT be used:

- For lifting or transporting personnel.
- Above the rated capacity of the selected configuration.
- With sling angles outside the approved limits.
- Using lifting points or lug combinations not identified in the approved load chart.
- Where the load arrangement introduces unintended side loading, twisting or impact loading.
- If any cracking, deformation, excessive wear, damaged welds, corrosion or other structural damage is identified.

If the beam is damaged during use, transport or storage, it shall be removed from service and assessed by a competent person before being used again.

Sling Angle Requirements

The following angular limits apply to the approved lifting configurations:

Top Lifting Sling Angle:
60°–90° from the horizontal

Load Sling Angle:
Maximum 30° from the vertical

Angles shall be measured from the nominated reference direction shown on the applicable lifting arrangement drawing.

Operation outside these limits requires separate engineering assessment and approval prior to use.

Rigging Equipment

17 t WLL Grade S Safety Bow shackles complying with AS 2741 shall be used at the designated lifting points. Shackles shall be selected, inspected and used in accordance with AS 2741 and the manufacturer’s instructions.

Forklift Handling

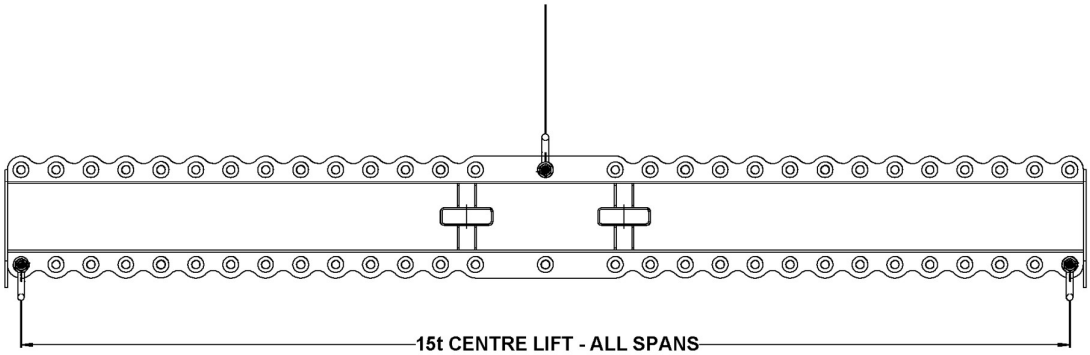
Forklift tine pockets are provided for handling and positioning the beam only.

They shall NOT be used as lifting points for suspended load operations.

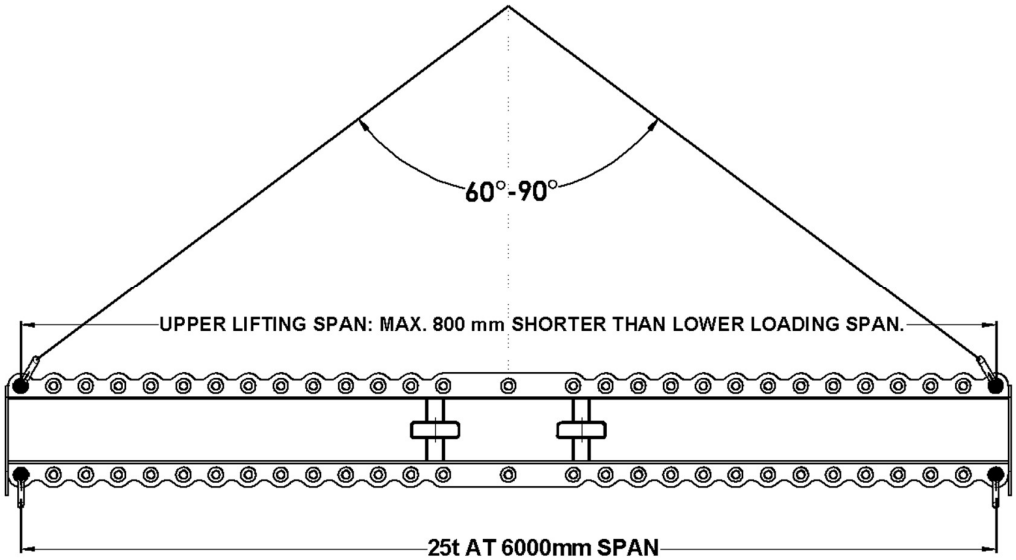
The beam shall be unloaded before being transported or repositioned using the forklift tine pockets.

Load chart

Lifting configuration:



Spreader configuration:



General Operation

1. Take up the load gradually to avoid sudden or shock loading.
2. Perform a short trial lift to confirm the load is stable and balanced.
3. Keep all personnel clear of the suspended load and lifting area.
4. Raise, move and lower the load in a smooth and controlled manner.
5. Ensure the load is fully supported before releasing sling tension.
6. Remove the rigging only when the load and beam are stable.

After lifting, place the beam on a stable support and store it in a manner that prevents damage to the beam, lifting lugs and identification plate.

Any use outside the approved configuration requires engineering review prior to lifting.

Inspection & Testing

The Multi-Lug Lifting Beam shall be inspected at intervals appropriate to its service conditions and in accordance with the applicable requirements of AS 4991.

Periodic inspection shall include:

1. Examine the beam body for deformation, dents, cracking, corrosion or other damage.
2. Inspect all lifting lugs for wear, distortion, cracking or elongation of the lug holes.
3. Inspect structural welds for visible cracking, damage or deterioration.
4. Check the beam for abnormal bending, twist or permanent deformation.
5. Confirm that the identification plate and WLL markings remain securely attached and legible.
6. Where required, conduct NDT of critical welds in accordance with the nominated inspection procedure and acceptance criteria.

Inspection frequency shall be reduced where the beam is exposed to frequent use, severe loading or harsh environmental conditions.

Any beam showing structural damage or unacceptable deterioration shall be removed from service pending assessment by a competent person.

Repairs

Minor coating or surface repairs may be carried out provided they do not affect the structural integrity or identification markings of the beam.

Any repair involving welding, heating, straightening, modification of lifting lugs or other structural work shall require engineering review and an approved repair procedure before the beam is returned to service.

Pre-Use Checklist

Check	YES	NO
Beam body is free from visible damage or deformation	☐	☐
Lifting lugs are free from cracks, distortion or excessive wear	☐	☐
Lug holes show no abnormal elongation or damage	☐	☐
Welds show no visible cracking or deterioration	☐	☐
No significant corrosion or surface damage is present	☐	☐
Identification plate and WLL markings are present and legible	☐	☐
Beam has a current inspection status	☐	☐
No unauthorised repair or modification has been made	☐	☐
Are the personnel involved in the lift suitably trained, competent and authorised?	☐	☐

If any item is marked "NO", the beam shall not be used until assessed and cleared by a competent person.

General Arrangement

