

NEW EQUIPMENT AND SYSTEM  
APPROVAL CERTIFICATE**Certificate No. NESA-T099 Version No: 1.1**

**Approval date** 01/04/2019  
**Approved by** Review Panel  
**Report no.** 16/36471

*This certificate is issued to*

**Supplier** Solid Technologies Pty Ltd  
PO Box 426 Maroubra,  
NSW 2035

*In respect of*

**Manufacturer** Solid Technologies Pty Ltd  
**Product description** Solid Technologies Total Rail Repair Solutions  
For the repair and maintenance of surface defects using wire feed welding process to:

- Build up fabricated and welded crossings manufactured from standard carbon rail.
- Repair wheel burns, Squats, dips/surface damage in standard carbon rail.
- Build up crossing manufactured from austenitic manganese steel components
- Build up Aluminothermic welds in standard carbon and head hardened rails

**Item identification**

Process	Consumable	Application
WPS R3016L2R40016L1	<ul style="list-style-type: none"><li>• Solid R30, 1.6 mm P/N:1430B7D1615</li><li>• Solid R400, 1.6 mm, PN:1440B7D1615;</li></ul>	Head Hardened rail Aluminothermic weld
WPS R3511L2R3516L1	<ul style="list-style-type: none"><li>• Solid R35, 1.1 mm, PN:1430B7P1115;</li><li>• Solid R35, 1.6 mm, PN:1435B7P1615;</li></ul>	Standard Carbon Aluminothermic weld, crossing and rail
WPS AuMn 1408- 24-25-16	<ul style="list-style-type: none"><li>• RBM 24, 1.6 mm, P/N:1220B7D1603; 1220B7D1605; 1220B7D1613</li><li>• RBM 25, 1.6 mm, P/N:1725B7D1603; 1725B7D1605; 1725B7D1613</li></ul>	Austenitic Manganese monoblock and RBM crossings

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WPS AuMn 1408-24-25-12	<ul style="list-style-type: none"> <li>RBM 24, 1,2 mm, P/N:1220B7D1203; 1220B7D1205; 1220B7D1213</li> <li>RBM 25, 1.2 mm, P/N:1725B7D1203; 1725B7D1205; 1725B7D1213</li> </ul>	Austenitic Manganese monoblock and RBM crossings
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Machines:

- Vantage 580 engine drive, P/N: K2963-1
- Ranger 305 D engine drive, P/N: K2922-1
- LN 25 PRO wire feeder, P/N: KA2613-5A

Trial locations in Hunter Valley corridor to be advised by the Project Manager

## Application

### Trial description:

Austenitic fully cast manganese crossing  
(Monoblock)

Austenitic Rail bound manganese crossing (RBM)

Austenitic manganese nose compound crossing

Standard carbon fabricated or welded crossing

Wheel burns/ squats / rail surface damage in standard carbon rail.

## Relevant Standards

AS 1085.1, AS1085.20, ETM-01-01, ETM-01-04 and ETE-01-03

Application: 47kg/m, 53 kg/m, 60 kg/m standard carbon rails and Austenitic manganese steel

## Conditions of Approval

1. Applicable to rail surface head build up and repairs (NOT to be used for joining of the rails).
2. Only to be applied by operators trained, experienced and qualified to AS1085.20 and Solid Technologies TRRS and certified to the requirements listed in ST document: 2a Solid Technologies Document List ST-DL-1603 Rev 1: Solid technologies operators certification/training satisfying ST 41 ST-TP-1407.
3. Each weld shall be assessed and ultrasonically tested within the first 24 hours of repair and then performance assessed once every 2 weeks for the first month and then once every 2 months for up to 6 months, subject to the performance of the build-up repair.

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4. A performance assessment report is to be provided to ARTC within 2 days of each assessment. Initial ultrasonic inspection of the welds are to record any defects in the weld including defects that is found to be undersize (as per ETM-01-04).
5. An inspection and test plan including performance criteria is to be provided prior to commencing any trial at ARTC.
6. The welds including hardness shall comply with AS1085.20 and Solid Technology test reports supporting this approval. The welds are also to comply with the requirements as set out in ARTC standards ETM-01-01, ETM-01-04 and ETE-01-03
7. A wire feed welding return form shall be completed for every weld with the record handed to ARTC representative for acceptance.
8. An installation risk assessment must be completed and accepted by the Manager Maintenance Hunter Valley or a nominated representative.
9. Solid Technologies must prepare a detailed final report clearly stating type of process and consumable used to form the basis of the full Type Approval. The report shall include welds that comply and/or do not comply with condition #6.
10. Supplier to provide a welding manual including Safe work method and quality control process.

***Any subsequent change to the design, materials or manufacturing process is not covered by this approval. The manufacturer (Solid Technologies) should notify ARTC of any modification or changes in order to obtain a valid certificate.***

**Note/Comments****Issue date****Expiry  
date**

End of trial at each location

**Issued by****Nick Petticrew****Acting ARTC Manager Standards**

1/4/19