

<b>NEW EQUIPMENT &amp; SYSTEM APPROVAL – Junction Weld UIC 60 to 60 AS</b>		<b>Ref: 11/52010</b>
<p>Note: the prompts given below are only a guide to the information required for approval. Dependent on the type of equipment or system that requires approval delete any section that is not applicable or include additional information if necessary. <b>Mandatory</b> fields are marked with an asterisk (*).</p>		
1	<p><b>Equipment or System to be approved *</b> <b>AS60 to UIC60 Junction Weld Kit</b></p>	
2	<p><b>Originator *</b> Name: Paul Radmann Company: Thermit Australia</p>	
3	<p><b>Introduction *</b> Weld kits with moulds specifically accommodating the profile differences between AS60 and UIC60 rail have been produced to facilitate the welding together of these two rail types. This eliminates the need for the welder to hand shape the moulds on site by rubbing AS60 moulds to suit UIC60 rail when the welder may not have the tools or may be under time constraints to perform the process. With a specially formed mould the distribution of stress in the transition between the rails is more controlled and should give welds with improved strength and fatigue properties.</p>	
4	<p><b>Determination of Need *</b> The specially formed moulds replace the current process where AS60 moulds are rubbed to suit UIC60 rail. It improves the fit of the mould to the rail giving improved surface finish and stress distribution which in turn should reduce the likelihood of defects in the weld and give an improvement in service life.</p>	
5	<p><b>Significant Change or Not *</b> This change in equipment or system is assessed as Minor</p>	
6	<p><b>Review Panel *</b></p> <ul style="list-style-type: none"> <li>John Furness, Manager Standards</li> <li>Rodney Reinertsen, Reliability Manager, Transfield Services</li> <li>Tim Calver, Standards and Technical Services Engineer</li> </ul>	
7	<p><b>Safety</b> Waiver 900/TR/230608/185 allowing junctions of AS 60 to UIC60 to be achieved by rubbing moulds from May 2008 until Feb 2010 without evidence of any major issues. This proposal with specially designed junction moulds must be a significant improvement on simply rubbing moulds.</p>	
8	<p><b>Performance and Suitability</b> The attached test results to AS 1085.20 confirm these aspects.</p>	
(i)	<p><b>Use in other rail networks</b> ARTC, QR and RailCorp have all approved the basic SkV – Elite Single use processes for joining rails of similar sizes. ARTC has only had need to use the AS60 to UIC60 junctions since 2008, when we first used imported turnouts from Vossloh Cogifer which were made with UIC 60 rail. Standards have no knowledge of any other rail systems in Australia using turnouts with UIC 60 rail in them. So they wouldn't have any need for AS60 to UIC 60 junctions. It is almost certain that no overseas railways would be using AS 60 kg/m rail, so junction welds with UIC 60 would not be required there.</p>	
(ii)	<p><b>Use in the ARTC network</b> Only rubbed moulds have been used to date. These manufactured junction moulds will be a marked improvement on this method.</p>	
(iii)	<p><b>Issues arising from usage of the equipment/system</b> New stock item. Qualified welders will need to be advised that they are now available</p>	
(iv)	<p><b>Changes required to infrastructure or systems for use of the equipment</b> New stock item.</p>	
9	<p><b>Reliability</b> The attached test results to AS 1085.20 confirm these aspects</p>	
10	<p><b>Maintainability</b> The attached test results to AS 1085.20 confirm these aspects</p>	
11	<p><b>Approval *</b></p>	

Thermit Australia - AS 60 to UIC60 SKV - Elite Single Use Junction Aluminothermic welding processes

12 **Conditions of Approval** \*

- Welds to be installed as per Thermit Australia procedures.
- ARTC Procurement section and ARTC welding staff to be advised that the former waiver is now closed and these moulds must now be used for UIC60 to AS60 junction welds.

13 **Does the Originator accept the additional Conditions of Approval as set by the Review Panel:**

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
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14 **Sign off**




**ARTC office use only**

**Review Panel:**

John Furness

Rodney Reinertsen

Tim Calver

Date: 16-8-2011

Date: 15-8-11

Date: 15/8/11