

<b>NEW EQUIPMENT &amp; SYSTEM APPROVAL PROFORMA</b>		Ref: 13/25228
<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>SkV-Elite welding process using step moulds</b></p>	
2	<p><b>Originator *</b> Name: Paul Radmann Company: Thermit Australia Pty Ltd</p>	
3	<p><b>Introduction *</b> Misaligned and poor-fitting moulds are a common cause of defects within aluminothermic welds and can lead to poor service life of the welds. AS1085.20 does not allow for the welding of worn to new rail but when this is done it often leads to poor mould fit and the corresponding defects and reduced service life. Testing shows that improved weld performance can be achieved using moulds prefabricated to include some of this mismatch, thereby reducing the need for the welder to shape the mould in the field.</p>	
4	<p><b>Determination of Need *</b> Step moulds improve current practice by incorporating the difference in height between new and used rails. This reduces the reliance on the welder to perform this task in the field and leads to better quality welds.</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>• Gary Milligan, Team Manager, Muswellbrook</li> <li>• Bob Taylor, Projects Co-ordinator</li> <li>• Tim Calver, Standards and Technical Services Engineer</li> </ul>	
7	<p><b>Safety and Standards</b> AS 1085.20: Welding of steel rail ETM-01-01: Rail Weld Geometry Standard RTS – 3602 Aluminothermic Welding Manual, as updated May 2013 ETF-01-01: Used Rail and Welding Policy (NSW only)</p>	
8	<p><b>Performance and Suitability</b> See attached report: Welding Worn Rails by Paul Radmann from Thermit Australia Pty Ltd</p>	
(i)	<p><b>Use in other rail networks</b> Used in the U.K.</p>	
(ii)	<p><b>Use in the ARTC network</b> Not presently used in Australia but factory testing, field trials and strength testing carried out in conjunction with ARTC in the Hunter Valley. See attached reports from Bureau Veritas (13-2715878-2) and Thermit dated 15/3/13 for 60 kg/m rail with 13 mm step</p>	
(iii)	<p><b>Issues arising from usage of the equipment/system</b> There should be no issues as the moulds fit existing SkV-Elite equipment and procedures.</p>	
(iv)	<p><b>Changes required to infrastructure or systems for use of the equipment</b> Purchasing and logistics will need to control additional items of stock where these moulds are used. See attached list of specific Thermit item numbers.</p>	
9	<p><b>Reliability</b> Test results show welds strength is similar to standard aluminothermic welds.</p>	
10	<p><b>Maintainability</b> No different to other aluminothermic welds in this regard.</p>	
11	<p><b>Approval *</b> Thermit Australia, SkV-Elite Step Welds, for use across ARTC – subject to the conditions below. Specifically - 2 piece welding kits as listed on the attached Thermit list of item numbers for steps of 5, 9 and 13 mm.</p>	

12	<b>Conditions of Approval *</b>	<ul style="list-style-type: none"> <li>Welds to be set up in accordance with manufacture's specification and only to be completed by aluminothermic welders qualified in these processes</li> <li>Max vertical step to be 15 mm.</li> <li>Moulds are for use on rail with predominately high vertical wear.</li> <li>Only to be used where lateral head wear is moderate and finished gauge face and vertical alignment can be kept within the limits specified in ETM – 01 – 01.</li> <li>Thermit Australia to liaise with ARTC Procurement and Maintenance staff to ensure that there is clear identification and traceability of these specialised moulds/kits.</li> </ul>					
13	<b>Does the Originator accept the additional Conditions of Approval as set by the Review Panel:</b>	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>

14	<b>Sign off</b>	<i>ARTC office use only</i>			
	<b>Review Panel:</b>				
	J Furness	ON FILE		Date:	07/06/2013
	G Milligan	ON FILE		Date:	07/06/2013
	B Taylor	ON FILE		Date:	07/06/2013
	T Calver	ON FILE		Date:	07/06/2013