

NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: <<office use only>>

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. Mandatory fields are marked with an asterisk (*).

1 Equipment or System to be approved *

Thermit SkV-Elite Junction welding process

2 Originator *

Name: Paul Radmann

Company: Thermit

3 Introduction *

The SkV-Elite SU Welding process has been approved for use in the ARTC network (Ref 08-08-11-087), this approval covers the welding of junctions between rails of different profiles using the same mould, portion and single use crucible system.

4 Determination of Need *

The SkV-Elite SU welding process will ultimately replace the SkV-F welding process as it offers the benefit of a lightweight, disposable crucible, simplified equipment and easier luting for the welders. It is necessary to have the junction welds approved so that these benefits can be realised irrespective of the rail being welded.

5 Significant Change or Not *

This change in equipment or system is assessed as Select

6 Review Panel *

- John Furness - Manager Standards
- Steve Cooper
- Tim Calver

7 Safety

To comply with AS 1085.20-2006 Welding of Steel Rail
ARTC Code of Practice
ETM-01-01 Rail Weld Geometry Standard
RTS 3602 Aluminothermic Welding Manual

8 Performance and Suitability

As these sections have Type Approval as standard welds – see 8(ii) below, AS1085.20-2006 N3.5 provides for automatic qualification. See explanatory drafting notes attached.
See attached copy of Thermit Australia Report February 2009: SKV-Elite Single Use Junction Welding Process Rev 1 and Appendices A to I
Some hardness tests were slightly outside AS1085.20-2006 specification (table N3 attached), but these are considered marginal – see drafting notes attached.

(i) Use in other rail networks

The SkV-Elite SU welding process is approved for use in Australia by ARTC, RailCorp and Queensland Rail. Queensland Rail has approved the SkV-Elite SU junction weld and RailCorp has approved the tests performed to allow in field trials which are currently underway.
Attachments:
Acceptance Certificate RailCorp 3 January 2008 – 47kg Z90, 53 kg Z90, 60kg Z110; 47kg Z90 and 60kg Z90 subject to satisfactory field tests.
Acceptance Certificate Queensland Rail 23 May 2008 41, 47, 50,53 & 60kg rolled sections, 50 & 60kg HH

(ii) Use in the ARTC network

All the Junction welds submitted have ARTC approval as standard welds
See attached ARTC Type Approval 08-08-11-087 for AS60, 53, 50, 47, 41, Z90SU; AS60, 50 Z110SU; AS60, 50 Z100SU; AS41 Z70SU. Dated 19/10/2007

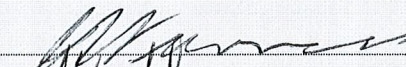

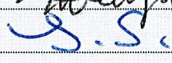
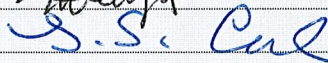
(iii) Issues arising from usage of the equipment/system

This system will be used in a manner similar to the existing SkV-F process. Process conversion training from SkV-F to SkV-Elite welding is recommended.

(iv) Changes required to infrastructure or systems for use of the equipment

Item numbers will need to be added to the system.

9	Reliability	Thermit have been providing welding equipment to the rail industry worldwide for many years.			
10	Maintainability	This process is similar to existing processes currently in use			
11	Approval *	<p>SkV-Elite welding portions, moulds and associated equipment for the following junctions:</p> <p>AS41-AS47 AS47-AS50 AS47-AS53 AS50-AS53 AS50-AS60 (plain carbon and head hardened) AS53-AS60</p> <p>This approval does not include AS53-UIC60 or AS60-UIC60 junction welds.</p>			
12	Conditions of Approval *	Welders will need to be trained in the SkV-Elite SU welding process if not already trained.			
13	Does the Originator accept the additional Conditions of Approval as set by the Review Panel:	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; text-align: center;">Yes <input type="checkbox"/></td> <td style="width: 33%; text-align: center;">No <input type="checkbox"/></td> <td style="width: 33%; text-align: center;">N/A <input type="checkbox"/></td> </tr> </table>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>			

14	Sign off	ARTC office use only
Review Panel:		
John Furness		Date: 20/5/09
Alice Woodford		Date: 25/05/09
Steve Cooper		Date: 20/5/09
Tim Calver		

Attachments:

- Drafting Notes
- SKV- Elite Single Use Junction Welding Process Thermit Australia Report Rev 1 February 2009
- ARTC Type Approval 08-08-11-087 for AS60, 53, 50, 47, 41, Z90SU; AS60, 50 Z110SU; AS60, 50 Z100SU; AS41 Z70SU. Dated 19/10/2007
- AS 1085.20 – 2006 Table N2: Aluminothermic Welding – Number of tests required for qualification.
- AS 1085.20 – 2006 Table N3: Test Requirements for qualification of Aluminothermic Welding