

Track – Aluminothermic Welding

Scope Includes: Running rails, line side welding.
Excludes: Conductor rails and static or mobile flash butt welding

Preparation

Tools, equipment and plant items required but not limited to:

- Welding equipment as defined in the relevant process supplier's manual and Network Rail's line standard (NR/SP/TRK/0032)
- Rail alignment beam or A frame.
- Stressing equipment.
- Welding tent or umbrella.
- Plant and oxy – fuel gas equipment (shall be maintained in accordance with Network Rail requirements).
- Any tools and equipment that are defined in the appropriate process supplier's manual, and/or other such documents approved by Network Rail.

Work planning considerations:

- Working on 6ft rail when adjacent line is open to traffic
- Weather conditions
- Traction bonding requirement
- Signalling requirements

Method

1. Specifics on each task within the procedure are documented in the Network Rail standard NR/SP/TRK/0032 and relevant process supplier's manual.
2. Identify rail grade and ensure suitability for welding.
3. Check for relevant features to ensure there are no proximity issues
4. Measure rail wear (rail wear depth gauge).
5. All loose debris and combustible material to be removed prior to welding.
6. Prepare rails to be welded together. This includes cutting the rail ends by use of mechanical cutting equipment and/or oxy-fuel gas equipment.
7. Where and when appropriate use non destructive testing (NDT) on rail ends that are to be welded together.
8. Align rails, select, adjust and fit appropriate moulds.
9. Carry out welding activity.
10. Profile finished weld to existing rail profile (grinding).
11. Inspect finished weld (visually) for defects.
12. Check for rail alignment and level.
13. Stamp weld with appropriate stamp (A or R).
14. Check track is fit to allow safe passage of trains.
15. Record all relevant weld details on the relevant welders work return form.

Track – Aluminothermic Welding

16. Inform the engineering supervisor (person in charge) of the status of the finished weld.
17. Arrange fitting of emergency fishplates and clamps if required.
18. Upon completion of the work remove all welding debris materials from site.

References

Supports Ellipse Standard job

- 009065 Track – AL-Thermic Weld – Standard Gap
- 009066 Track – AL-Thermic Weld – Wide Gap

If applicable refer to the following directly associated documents:

- NR/SP/TRK/001 Inspection and Maintenance of Permanent Way
- NR/SP/TRK/0032 Joining of rails by aluminothermic welding
- NR/PRC/MTC/TK0081 Management of rail welding
- TEF/3001 – TEF/3009 Welding Forms
- Thermit Welding (GB) Ltd. Operating Manual
- Railtech UK Ltd. Operating Manual.

- Risk Control Sheets:
 - NR/L3/MTC/0002/TK000 Generic Track Risks
 - NR/L3/MTC/0002/TK601 Aluminothermic welding
 - NR/L3/MTC/0002/TK603 Use of Welding Tents
 - NR/L3/MTC/0002/TK604 Use of Welding Umbrellas