

Track – Grind Rails

Scope Includes: Hand grinding of plain rails and adjustment switches to restore profile or for defect and/or RCF removal.
Excludes: Grinding of S&C and train borne grinding

Preparation

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

- Approved grinding machine
- Angle Grinder
- KV3A Generator
- Magnetic Particle Testing (MPT) Equipment
- Bar Gauges & Templates
- Fire Extinguishers
- Consumables for all the above mentioned machinery

Work planning considerations:

- Rail depth – ensure that adequate fishplate clearances and minimum rail depths can be maintained after grinding works are completed
- Twist faults – ensure that twist faults are not made worse by only grinding on one rail
- Length of site to be ground – hand grinding will only be practical on short lengths of RCF and lipping on longer lengths if resources are available
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Method

1. Inspect site and assess work required, ensuring extent of works is suitable for hand grinding. Consider the following:
 - Care must be taken to ensure that an adequate transverse and longitudinal profile is achieved after grinding
 - Depth of defects or cracks to be removed
 - Rails containing RCF with cracks that have propagated to a vertical depth greater than 5mm shall not be treated by hand grinding and shall be replaced
 - Rail depth, sidewear, condition and profile and components when assessing the suitability of a site for hand grinding
2. Clear worksite of all debris and flammable materials
3. Remove all lipping from rail.
4. Undertake MPT on ground section to identify crack size and location
5. Scope worksite and break up into manageable area (s) if required depending on the depth of defect/severity of RCF.
6. Remove cracking with multiple passes of grinding equipment over individual defects/sites as identified above.

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7. The Bar Gauge with the correct templates should be used throughout the grinding process to achieve the correct railhead profile.
8. Hand grinding shall be undertaken to achieve the same profiles as those specified for train based grinding. The high rail shall be ground to a NRHRI or ATH profile and the low rail and all straight track to a NR113A or ATL profile
9. Undertake MPT on ground section to ensure that all cracks have been removed.
10. Repeat steps 6 to 9 on all defects/sites to be treated by hand grinding.
11. Once all cracks have been removed, undertake final re-profiling works over the whole of the worksite and blend into un-ground section. Where cracks have not been completely removed and the maximum depth of grinding has been undertaken, minimum actions shall be adopted as specified in NR/SP/TRK/001.
12. the transition from ground rail to the adjoining unground rail shall be progressive and over a minimum length of 1 in 600 either side of the area ground
13. Check final profile at every sleeper or support location in the worksite using the Bar Gauge.
14. When working at Adjustment switches; clean and lubricate adjustment switches as required.
15. Clear all debris from worksite.
16. Complete the relevant documentation (TEF 3042).
17. RCF sites that have been ground shall be re-inspected after the passage of traffic so that the contract or running band can be assessed and any corrections to the final profile made as necessary.

References

Supports Ellipse Standard job
- 009082 Track - grind rails

If applicable refer to the following associated documents:

- NR/SP/TRK/001 Inspection and Maintenance Of Permanent Way
- TEF 3042 Hand grinding record form
- Risk Control Sheets:
- NR/L3/MTC/0002/TK000 Generic Track Risks
- NR/L3/MTC/0002/TK203 Grind rails