

Track – Stress Monitoring (VERSE)

Scope

Includes: Straight Plain line CWR.
Excludes: Plain line CWR less than 500m radius, S&C and Insulated Rail Joints

Preparation

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

- Pencil/scribe
- Rail wax crayon/marker
- Tape measure
- Note book
- Approved rail thermometers
- Fastening extractors
- Pad scrapers
- Rail jacks
- Rail support blocks
- Generator
- Approved NDT direct measurement equipment

Work planning considerations:

- Possession/isolation requirements
- Signalling requirements
- Site limitations (i.e. near S&C, position of IBJs, changes in rail section, location of bonded connections)
- Potential impact of rail temperature limitations stated in manufacturer's operation manual
- Availability of resource, tools, equipment, plant and materials essential to complete the planned NDT works
- Holder of a certificate of competence for the approved NDT direct measurement system

Method

1. Check equipment, tools, plant and materials are available and move to site.
2. Check rail temperature to determine if rail is likely to be in compression.
3. Disconnect signalling cable bonding as required.
4. Measure and accurately mark up site.
5. Clear ballast from areas likely to be effected by NDT work.
6. Unclip the selected section of rail, ensuring it is not in compression.
7. Accurately install the rail support blocks (+/- 1 cm).
8. Record rail temperature (reviewing against limitations for NDT equipment use).
9. Record the rail type.

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10. Assemble and fit the NDT equipment.
11. Carry out measurement in accordance with manufacturers' operation manual instructions and NR/SP/TRK/0011.
12. Record data.
13. Remove NDT equipment and rail thermometers.
14. Remove rail support blocks and re-fit rail replacing pads/insulators/fastenings as necessary.
15. Restore ballast profiles.
16. Reconnect signalling cable bonding as required.
17. Clear plant, equipment and tools from site.
18. Analyse test results, complete stress certificate form and attach calculation sheet. Pass information to Line Manager for SFT review.
19. Update stress certificate form information in StressRoute NR within 7 working days.

References

Supports Ellipse Standard job

- 009061 Track - stress monitoring (NDT CWR)

If applicable refer to the following associated documents:

- NR/SP/TRK/0011 Continuous Welded Rail (CWR) Track
- NR/PRC/MTC/TK0077 Management of rail stress and critical rail temperatures
- An Operator's Guide to VERSE – A non-destructive Method of Stress Free Temperature (SFT) by Vortok International & AEA Technology plc
- TEF 3013 Record of VERSE Testing
- Risk Control Sheets:
 - NR/L3/MTC/0002/TK000 Generic Track Risks
 - NR/L3/MTC/0002/TK406 Stress Monitoring