

SECTION 212

INSTALLATION OF NEW AND RENEWAL OF EXISTING PERMANENT WAY

General

- 1** Installation of new track and renewal of existing track shall be carried out to provide the Permanent Way construction standards specified in Section 217: Construction Standards for Permanent Way.

The type, and extent of the renewal of existing track and the location of each renewal shall be in accordance with the relevant Particular Specification.

The length of track to be renewed at each Site, including lengths of rail and number of sleepers where applicable shall be confirmed to the Employer's Representative by the Contractor.

Requirements for track drainage shall be in accordance with Section 185: Track Drainage.

(212.001)

Maintenance of the track during renewals

- 2** Track inspections and maintenance of the existing track affected by the work, and the renewed track until Final Handback to Railtrack's maintenance contractor shall be carried out by the Contractor in accordance with in accordance with Section 214: Inspection of Permanent Way, and Section 215: Maintenance of Permanent Way, respectively.

Railtrack's maintenance contractor for the track at each renewal location is as detailed in the relevant Particular Specification.

(212.002)

Track gauge tolerances and track geometry irregularities

- 3** If during the installation or renewal, the track gauge tolerances or track geometry irregularities exceed the limits specified in Section 215: Maintenance of Permanent Way, applicable to the track category, an emergency speed restriction shall be applied such that the track gauge tolerances or track geometry irregularities are within the limits applicable to the speed restriction.

No further work affecting the existing or installed track shall be carried out until measures for controlling the work and removing the ESR have been agreed with the Employer's Representative.

Track geometry irregularities in excess of the limits specified in Railtrack Line Standard RT/CE/S104 shall be actioned as specified in Railtrack Line Standard RT/CE/S104.

(212.003)

Method of working

- 4** A method statement appertaining to each location shall be provided for acceptance by the Employer's Representative not less than the minimum period before each renewal is scheduled to be carried out specified in the relevant Particular Specification.

Further to Railtrack Line Standard RT/LS/S008, the method statement shall be determined following hazard identification by the Contractor, and shall include as applicable, but shall not be limited to:

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- (i) method and procedures to inspect and maintain the track in accordance with Clause 212.002,
- (ii) details of absolute possessions, protection (TII) and isolations of electrical traction supply equipment required to be taken,
- (iii) details of speed restrictions required to be applied,
- (iv) details of all temporary disconnections, alterations and relocation of signalling, telecommunications and electrification equipment,
- (v) method of materials delivery including unloading, storage, and loading and removal from Site of redundant materials including where applicable details of materials trains,
- (vi) method of setting out track geometry,
- (vii) details of Contractor's Equipment including if applicable rail mounted vehicles to be used on the Site,
- (viii) method of materials recovery and transportation to stacking location or material disposal,
- (ix) method of excavation and disposal of excavated material,
- (x) method to be adopted for attainment of specified compaction and level of subgrade, formation and ballast below sleeper level,
- (xi) method of installation of track components including rail welding and stressing, with procedures for inspection and testing of rail welds,
- (xii) method of track consolidation and adjustment to line and level,
- (xiii) safety procedures,
- (xiv) details of competency standards to be applied to Contractor's personnel employed on the Site.

(212.004)

**Dismantling
existing tracks and
recovery of
materials**

- 5** Existing Permanent Way materials as listed in the relevant Particular Specification shall remain the property of Railtrack and shall be stacked for reuse on the Site.

Before any tracks are dismantled, all signalling, electrification or any other affected lineside equipment shall be disconnected in accordance with Clauses 212.024, 212.025, 212.026 and 212.027 as applicable.

Rail shall be recovered in accordance with Section 210: Permanent Way General.

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Rail joints shall be numbered before dismantling and so far as possible when re-laid, the rail joints shall be matched.

Existing track to be recovered for re-use on the Site, shall be removed to an agreed stacking area.

Existing concrete sleepers specified to be reused in the relevant Particular Specification shall be checked for compliance with Railtrack Line Standard RT/CE/S062. Where compliance is obtained the sleepers shall be recovered for reuse and transported to and off loaded at the locations as listed in the relevant Particular Specification. Non-compliant sleepers recovered from the tracks shall be removed from the Site.

Other Permanent Way materials as listed in the relevant Particular Specification shall remain the property of Railtrack. Such materials shall be recovered for reuse and shall be transported to and unloaded at the locations listed in the relevant Particular Specification.

Materials recovered for reuse shall be carefully loaded to avoid such materials being damaged in transit and shall be stacked as directed.

Glued insulated joints and track bolts shall not be reused and shall be removed from the Site.

Where specified in the relevant Particular Specification, that components other than rail are to be recovered for reuse, the following shall apply:

- (i) components shall be carefully dismantled,
- (ii) adhering ballast, earth, etc shall be removed,
- (iii) fishplates and other small components shall be sorted, bagged and labelled,
- (iv) components shall not be damaged.

All ballast and spoil shall be removed from the sleepers and rails prior to track panels being loaded onto rail vehicles, and being transported off Site.

(212.005)

Setting out track geometry

- 6** The designed line and level of the track shall be set out using offset marker pegs or other suitable means acceptable to the Employer's Representative. Where offset markers are used, such markers shall not be more than 50 metres apart on straight track and 15.0 metres apart on curved track.

It is expected that the use of laser-controlled equipment will be necessary to achieve the tolerances specified for levels of subgrade, formation and bottom ballast. If the Contractor proposes to use another method, details showing that such methods can achieve the specified tolerances shall be included in the method statement submitted to the Employer's Representative for acceptance in accordance with Clause 212.004.

(212.006)

Excavation of existing ballast

- 7** Before any new ballast or blanketing material is placed, spent or fouled ballast or other material shall be excavated and removed.

Excavation shall be for the full width of the existing ballast bed including shoulders, except where an adjacent track is not to be renewed, when the excavation shall be to the centre line of the 'six foot' or 'ten foot' as applicable unless specified otherwise in the relevant Particular Specification.

Excavations in the vicinity of existing structures shall be carried out such that the foundations to such structures are not undermined. Excavations for Permanent Way works shall not be taken down below invert of the foundation to an adjacent structure unless adequately designed Temporary Works to support the structure have been installed prior to the excavation.

Where no information is available, trial holes shall be taken to determine:

- (i) existing ballast depths and formation construction,
- (ii) foundation positions, dimensions, invert depth and any other relevant conditions, adjacent to bridge piers and abutments, tunnel walls, retaining walls, platforms and other structures,
- (iii) safe lengths of continuous dig adjacent to structures,
- (iv) any Temporary Works necessary to maintain stability of adjacent structures.

Trial holes shall be excavated and reinstated in accordance with Section 215: Maintenance of Permanent Way.

The method and programme of ballast excavation shall include adequate precautions against track instability, including instability of the adjacent track(s). Ballast shall not be removed from ballast shoulders, or sleeper ends without an applicable speed restriction being applied.

(212.007)

**Scarification of
existing ballast**

- 8** Where specified in the relevant Particular Specification, existing ballast in the track to be renewed shall be scarified by loosening and breaking up any solidly compacted lumps to a minimum depth of 150 mm below the underside of the existing sleepers and to a minimum width of 3.6 metres central to the track centreline except where an adjacent track is not to be renewed, when the scarifying shall be to the centre line of the 'six foot' or 'ten foot' as applicable unless specified otherwise in the relevant Particular Specification.

The scarified ballast shall be compacted and the surface graded to the requirements of Railtrack Line Standard RT/CE/S102.

(212.008)

**Preparation of
subgrade and
formation**

- 9** Where specified in the relevant Particular Specification, that the existing blanketing or ballast is to be completely removed, the surface of the subgrade and formation shall be trimmed to a crossfall not less than 1 in 30 or more than 1 in 25 towards the cess or track drainage as applicable, unless specified otherwise in the relevant Particular Specification, without disturbing the underlying material, and to allow for a constant ballast depth at any longitudinal section throughout the renewed track.

The surface of the subgrade or formation shall be reduced in level if necessary to achieve the design ballast depth, trimmed to the specified crossfall and compacted. The finished levels shall be to a tolerance of +0, - 20 mm of the design level in any 5.0 metre length.

The discovery of poor soil, obstructions or other unforeseen ground conditions during the work shall be reported to the Employer's Representative immediately.

Where so directed by the Employer's Representative, pockets of soft material and obstructions shall be removed and replaced with compacted spent ballast or other accepted fill.

The trimmed surface of the subgrade or formation shall not be disturbed during subsequent activities. Vehicles other than rollers and tracked vehicles shall not run directly on the trimmed surface.

(212.009)

**Laying of
blanketing sand**

- 10** Blanketing sand in accordance with Railtrack Line Standard RT/CE/S033 shall be provided where specified in the relevant Particular Specification. Blanketing sand shall be laid and spread upon the graded subgrade without disturbing the surface of the subgrade. Pneumatic tyred vehicles shall not run over the subgrade during placing of blanketing sand.

Blanketing sand shall be laid, spread and compacted to the same crossfall as the formation for the full width of the subgrade. The minimum compacted thickness shall be 100 mm. Each layer shall be compacted evenly with a minimum of four passes of a 1400-1800 kg vibrating plate compactor or equivalent.

The final layer shall be regulated to a tolerance of +0 to -25 mm to the specified finished levels.

(212.010)