

Guidance Document

G1913

Use of Tamping Machines

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1 Purpose

- 1.1 The purpose of this guidance document is to identify the requirements for the use of all On Track Machines in open and subsurface sections.

2 Scope

- 2.1 This document applies to the procedure for preparatory, post-works and the effective use on site of tamping machines. Reference shall be made to G1914 – Planning of On Track Machines when undertaking each section of this document

3 Safety Considerations

- 3.1 Before any tamping machine is used on the tracks of LU an Operational Safety Plan shall be prepared by the person or contractor responsible for the machine and the plan shall be formally approved by LU. The plan shall detail the requirements for the safe operation of the machine and designate each person responsible for ensuring that the requirements are met. Each type of machine shall have an individual plan and shall be worded so that each requirement can be checked off unambiguously.

4 Use of Tamping Machines

4.1 Introduction

- 4.1.1 Tamping shall only be used on sites where the track configuration allows the machine to work unrestrained, where track quality trends and track recording reviews determine it to be the best

method of correction or where design features require track movement to be undertaken, for example the improvement of clearances.

4.1.2 Tamping and lining shall not be used on:

- a) Curves with a tighter radius than the minimum specified for each machine type
- b) Structures, viaducts or ballasted bridges which have been prohibited by a structural engineer;
- c) Track where the ballast depth and designed lift value combined is less than 100mm below the bottom of the sleeper, unless supported by a risk assessment to determine whether adjusting the tine depth can achieve the desired affect without damaging the sleeper or formation construction;
- d) Track where the ballast is severely contaminated;
- e) Sub-surface lines in tunnels without gas monitoring arrangement in place and adequate ventilation;
- f) Embankments which due to the material used during construction could become unstable when subjected to excessive vibration;
- g) Track where the fastening system is not sufficiently configured to allow both rail and sleeper to be lifted uniformly;
- h) Track where rail temperatures fall within the parameters set out in S1177 – Prevention of Buckling.
- i) Track where preparatory works have not been carried out.

4.1.3 The Track Manager shall prepare and keep up to date a list of those sections of line where tamping is not permitted.

4.1.4 Tamping shall not be based on TRV results alone and shall be supplemented by visual inspection including cab riding.

4.2 Preliminary site inspection of tamping Sites

4.2.1 All planned tamping shall undergo a detailed track inspection to identify anything that could potentially hinder the operation of the machine, to highlight any location where significant track movement could limit structure and passing clearances and to identify areas where the use of the machine is prohibited.

4.2.2 Standard form F0159 – Preparatory Work Prior to Tamping shall be used to document the results of this inspection.

4.2.3 The inspection shall be carried out in enough time to ensure all potential preparatory works can be completed prior to the planned date of the tamping operation.

4.2.4 All work identified during the inspection shall be reviewed by the Track Manager.

4.2.5 The person carrying out this inspection shall be aware of the requirements for a planned tamping shift and fully understand the principles of track geometry and design. The specific areas to report on are:

- a) Ballast profile (condition/amount/type) - Notes shall be made specifically in locations where large lifts could expected due to the current condition of the track or the design requirements of the geometry. Wet beds, ballast migration and weak embankments sites shall be clearly reported. It is a key part of the inspection to highlight any potential of buckling risk that could be expected post tamping.
- b) Components (sleepers/fastenings/rail/joints/screws/bolts) – Notes shall be made on any track component which could lead to the machine not being able to complete its required lifts and slues (example, lock spikes/coach screw/elastic spikes could be loose or not holding in the sleeper which could lead to the baseplate/chair being lifted off the sleeper).