

Technical Specification

T0439

Rail reprofiling

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1 Purpose

- 1.1 The purpose of this technical specification is to define the geometric requirements for the reprofiling of rails to restore a satisfactory wheel contact area, and the verification requirements to demonstrate that the specified quality is achieved.

2 Scope

- 2.1 This technical specification applies to all track on the LU-managed network, i.e. open, sub-surface and tube sections, plain line, 56E1 and 95RBH rails, in rail grades R220, R260 and others as notified by LU for specific reprofiling projects.
- 2.2 The methods of reprofiling are grinding, planing and milling.
- 2.3 This technical specification does not apply to localised profiling of the rail head in conjunction with welding or weld-repair, where the purpose is primarily to blend the work area into the adjacent rail profile: the requirements for this are covered in T0432 and T0436 respectively. Nor does it cover the localised grinding of switch rails to reduce the risk of derailment, for which the requirements are given in S1176.

3 Requirements

3.1 Transverse rail profile

3.1.1 Reference profile

- 3.1.1.1 Unless otherwise specified, the transverse profile to which the rail head is to be reprofiled shall be 56E1 as defined in EN 13674-1. This shall apply also to the gauge face and rail crown when reprofiling 95RBH rail. Examples of other profiles which may be stipulated are shown in clauses 7.1 and 7.2.
- 3.1.1.2 Reprofiling shall preserve the appropriate rail inclination, i.e:
- a) 1 in 20 in plain line;
 - b) 1 in 20 in 95RBH junctionwork;
 - c) vertical in 56E1 junctionwork, unless specified as 1 in 20 in a specific reprofiling project.
- 3.1.1.3 Where side wear is present the reference profile shall be displaced away from the track centre-line such that there are no discontinuities between the side-worn gauge face and the gauge corner on the reference profile. This shall be achieved when the gauge corner of the reference profile becomes tangential to the top of the side-worn gauge face.

Note	Full profile restoration may not be practical owing to the rail wear or other features, e.g. dipped joint. In such circumstances the Supplier shall make the nominated LU Project Engineer aware during the pre inspection stage of any such events.
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3.1.2 Zone Requirements

- 3.1.2.1 The minimum size of the zone shall be between 5 degrees towards the field side (-5°) and 70 degrees towards the gauge side (+70°). The definition of the zone shall be in accordance with EN 13231-3.
- 3.1.2.2 The transverse profile of the reprofiled rails shall comply with the deviation limits shown in Table 1.

Table 1: Transverse rail profile requirements for all rail		
Vector location	Ranges of deviation from the reference profile ^(A) (mm).	
	High leg rail or Tangent track	Low leg rail
-5° to + 70°	0.0 / - 1.0	0.0 / - 1.0
Note (A) The definition of deviation shall be in accordance with EN 13231-3		