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Level 2

Specification for Mobile Wheel Reprofilng Machines

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Issue record

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Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 1st March 2009.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 4 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

Reference documentation

GI/RT7007	Low Voltage Electrical Installations
GI/GN7607	Guidance on Low Voltage Electrical Installations
GM/RT2466	Railway Wheelsets
GM/RC2566	Recommendations for Railway Wheelsets
BS 1134-1	Assessment of Surface Texture Methods and Instrumentation
BS 5378	Safety Signs and Colours
BS 5892-6	Railway Rolling Stock Materials. Specification for Wheelsets for Traction and Rolling Stock
BS EN 953	Safety of Machinery. Guards. General Requirements for the Design and Construction of Fixed and Moveable Guards
BS EN 982	Safety of Machinery. Safety Requirements for Fluid Power Systems and their Components. Hydraulics.
BS EN 13788	Machine tools. Safety. Multi spindle Automatic Turning Machines
BS EN 60204 - 1	Safety of machinery. Electrical Equipment of Machines.
BS EN 60529	Specification for Degrees of Protection Provided by Enclosures (IP Rating)
BS EN ISO 12100 - 1	Safety of Machinery. Basic concepts, General Principles for Design, Basic Terminology, Methodology.
BS EN ISO 12100 - 2	Safety of Machinery. Basic concepts, General Principles for Design, Technical Principles
BS EN ISO/IEC 17050	Conformity Assessment. Suppliers Declaration of Conformity
2004/108/EC	Electro-Magnetic Compatibility Directive
SI 1992/2063	The Supply of Machinery (Safety) Regulations

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SI 1998/2306	Provision and Use of Work Equipment Regulations
SI 1998/2307	The Lifting Operations and Lifting Equipment Regulations
SI 2005/1093	The Control of Vibration at Work Regulations
SI 2005/1643	The Control of Noise at Work Regulations

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1 Purpose

Refurbishment and/or renewal of existing fixed underfloor wheel reprofiling machines requires the tyre turning facility to be withdrawn from service for protracted periods of time. A mobile wheel lathe can be deployed to provide an alternative method of tyre turning during these down times. A mobile wheel lathe can also provide additional tyre turning facilities during periods of peak demand such as the autumn leaf fall season. Mobile wheel lathes may also be considered as an alternative to fixed underfloor wheel lathes at locations with a limited tyre turning requirement.

2 Scope

This specification defines the requirements for the design, manufacture, delivery, initial setting up, testing, commissioning and transportation of a mobile wheel reprofiling facility to be deployed at Network Rail Light Maintenance depots (LMD's).

3 Definitions

Depth of Cut

The amount by which the radius of a wheel is reduced in a single cutting pass.

Diameter Parity

The maximum permissible variation on diameter between one wheel and another on the same axle when measured at the specified gauging plane

Flange Height

The difference between the radius of the wheel at the tip of the flange, and the radius of the wheel at the tread datum position.

Flange Thickness

The thickness of the flange at a point 13mm above the tread datum position.

Minimum Metal

The least amount of metal which would be required to be taken off the smallest wheel set in order to reprofile that wheel leaving a witness mark of maximum width 10mm.

Radial Run Out

The variation of position of the considered feature with respect to a fixed point during one complete revolution about the datum axis without axial movement.

Reprofile

To machine a wheel or wheels on a wheelset to restore the wheel rim to its original profile or if so desired, a new profile

Section of Cut

The area of metal being removed at the point of cut (sq. mm.) derived from the depth of cut (mm) x feed rate (mm/rev).

Surface Finish

The specified limit of surface roughness in accordance with BS 1134.

Wheel Rim

The whole of the wheel periphery from and including the chamfer at the outer edge of the wheel up to the point of blending of the flange crown radius with the inside face of the wheel

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Wheelset

A complete unit comprising an axle and two complete wheels together with any gear wheels, brake discs, axle bearings and their end caps, spacers seals and other associated fittings.

Wheelset Back to Back Dimension

The dimension between the wheelset flange-back faces, measured parallel to the axle centreline with the wheelset in the free (unloaded) condition.

Wheel Wobble

The total axial displacement of the wheel tread when the wheelset is rotated, measured at the flange back.

Witness Mark

An area of unmachined material which can remain after reprofiling a previously worn tread to demonstrate that the minimum of material has been removed.

NOTE No witness mark will be acceptable if thermal damage is present.

All other terms used within this document shall have their meaning as described in the relevant Railway Group Standards or other applicable Network Rail document.

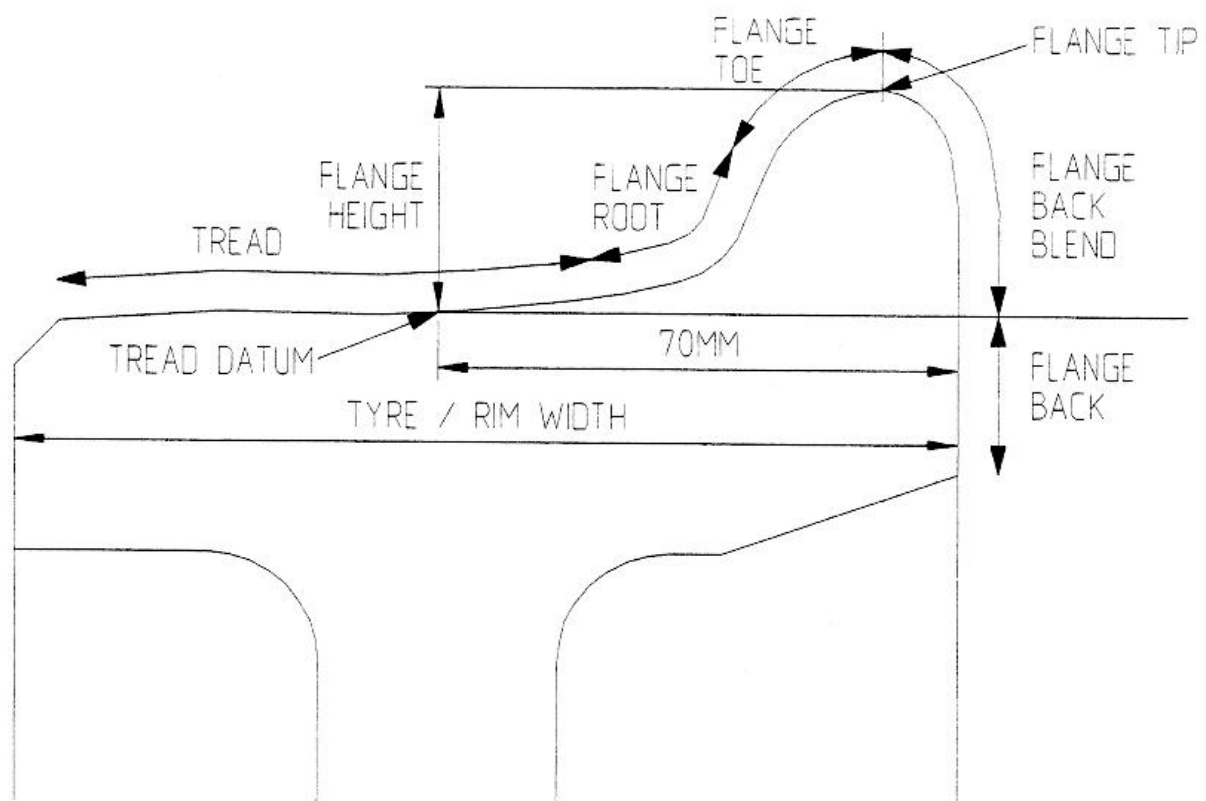


Figure 1– Definition of Profile