

Ref:	NR/L2/TRK/001/mod01
Issue:	6
Date:	01 December 2012
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Glossary

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1 Scope

This module of NR/L2/TRK/001 contains

- a) the definitions used throughout the standard;
- b) a summary of what is included in the other modules of this standard.

2 Definitions

The following definitions apply for the modules within NR/L2/TRK/001.

220 Grade Rail

normal grade pearlitic rail with a minimum hardness of 220 Brinell.

260 Grade Rail

standard or Grade A pearlitic rail with a minimum hardness of 260 Brinell.

400 MHH

Microalloyed Head Hardened premium rail steel with an ultra-fine pearlitic microstructure produced by alloying followed by controlled heat treatment after rolling with a minimum hardness of 400 Brinell.

Absolute Track Geometry (ATG)

Where the track position and its geometric attributes is maintained to an absolute designed position.

An example of where this is used is where cant deficiency exceeds 150 mm.

aluminothermic weld

process that uses the solidification of molten metal to produce a permanent butt joint between two rails.

AMS (austenitic manganese steel)

steel with a high manganese content with an austenitic microstructure produced by controlled heating and water quenching to form a tough, crack-resistant material which readily work hardens.

B-Scan

Ultrasonic imaging system utilised by Sperry to give a graphical representation of ultrasonic data for a section of track which is analysed to identify suspects.

bainitic

steel having an intermediate grain structure between pearlite and martensite with good deformation resistance and an intermediate fracture toughness.

buckle

track deformation which necessitates emergency remedial work to a running line under cover of either a temporary speed restriction or closure of the line.

For reporting purposes, the following circumstances do not constitute a reportable buckle:

- a misalignment that occurs during work whilst the line is blocked to traffic;
- the imposition of a precautionary speed restriction where no track deformation actually occurs;
- a misalignment in a siding.

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CEN54E1A1 Rail

The European description/coding for UIC54B rail.

NOTE 1: Rolled to the same dimensions as UIC54B, but now branded CEN54E1/A1.

NOTE 2: 'CEN54' describes the weight of the rail; 'E1' describes the rail head profile; A1 notes that it is a shallow depth asymmetric rail section.

NOTE 3: It is the shallow depth rail used in 'CEN56' vertical S&C and NR56 S&C.

CEN56E1 Rail

The European description/coding for BS113A rail.

NOTE 1: Rolled to the same dimensions as BS113A, but now branded CEN56E1.

NOTE 2: 'CEN56' describes the weight of the rail; 'E1' describes the rail head profile.

NOTE 3: Commonly abbreviated to 'CEN56'.

check gauge

dimension measured from the gauging point of one rail to the rubbing face of a check rail or wing rail adjacent to the opposite running rail.

closure rail

short length of rail used to complete an installation of one rail of a track.

contra-flexure turnout

turnout in which the curves of the diverging tracks are of opposite hand.



Figure 1 – Contra-flexure turnout

Critical Rail Temperature (CRT)

rail temperature to which track is allowed to rise before specific measures to protect traffic are required.

Note: In CWR track this is dependant on the stress free temperature (SFT) and in jointed track this is dependant on the joint closure temperature.

Emergency Speed Restriction (ESR)

speed restriction to maintain the safety of trains. The speed is more severe than the speed published and is not shown in the weekly operating notice.

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Equivalent Million Gross Tonnes Per Annum (EMGTPA)

measure of the annual tonnage carried by a section of track, taking into account variations in track damage caused by normal traffic.

false flange damage

false flange damage is characterised by irregular and predominantly transverse severe surface cracking. It occurs on the wheel transfer area of stock rails and crossings. Flattening or even a hollow railhead profile normally accompanies it. Where this type of damage has occurred, cracks initiate at a number of locations across the railhead, which over time, grow into larger single cracks.

Feature

Something in the track that gives an ultrasonic response (such as a S&C switch, a S&C crossing, an adjustment switch or bond holes) but is not a reportable defect.

fishtail clip

a proprietary clip used to secure the gauge side of the stock rail foot on slide baseplates supplied by Schwihag or Corus Cogifer. The same clip is used with Schwihag check rail baseplates. The name derives from its fish shape when laid flat.

flange back contact (FBC)

where the back of a passing wheel is in contact with the back of an open switch (see Figure 3).

flangeway

the gap between

- the running edge of a running rail and an adjacent check or wing rail,
- the running edge of a running rail and the part of the surface system of a level crossing that is laid in the fourfoot or
- the back of an open switch and the adjacent stock rail.

Flash Butt Weld (FBW)

Solid phase weld produced by electrical heating of the aligned rails, followed by a forging process to join the ends together.

free wheel clearance (FWC)

Dimension measured across the flangeway between the back of an open switch and the adjacent stock rail (see Figure 3).

free wheel passage

dimension from the back of the open switch rail to the gauge face of the closed switch (see Figure 3).

full depth switch

switch machined from rail the same depth as, and usually the same rail section as, the stock rail.

NOTE: The stock rails of this type of switch will be secured by bolting through the web to the slide chairs or baseplates. Older flatbottom inclined (109lb) and vertical and all bullhead switches are of this type.

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gall

loss of section from the rail foot as a result of wear and corrosion caused by the relative movement between the rail foot and the sleeper, baseplate or chair.

gauge face

side of the rail head that faces towards the opposite running rail.

Grade B Rail

1% chrome alloyed wear resisting pearlitic rail with a minimum hardness of 260 Brinell.

head repair weld (HRW)

process that uses an aluminothermic welding process to repair defects in sections of the rail head.

heel blocks

cast metal block fitted between the switch rail and the stock rail at the switch heel of a half set of switches to maintain the correct geometry of the switch half set and to minimise longitudinal movement of the switch rail relative to the stock rail.

High Performance Rail (HP Rail)

naturally cooled, alloyed premium rail steel with a minimum hardness of 340 Brinell produced using alloying additions to achieve an ultra-fine pearlitic microstructure without the need for additional heat treatment after rolling.

hydrogen shatter cracking

shatter cracking due to defects in the rail formed during or soon after manufacture.

Joint Closure Temperature (JCT)

The temperature for a section of track at which (a number of) the expansion joints close to a zero gap.

NOTE: The number of joints considered depends on the length of rail between expansion joints.

level crossing

public crossings described within the scope of NR/L2/SIG/19608. Includes, level crossings, accommodation crossings, barrow crossings, foot crossings and bridleway crossings plus any other staff or accommodation crossing.

Lever box

device used on hand operated points to move the switches.

NOTE 1: The most common type in use is the spring leverbox where the switches are thrown and held in position for the passage of trains by a spring.

NOTE 2: There are two types of spring leverboxes:

- *One-Way Leverbox: a leverbox designed to hold the switches in one direction and return them to that position following manual operation or a train trailing through them. One-way leverboxes may be fitted with a foot treadle to ease the effort of holding them over for the passage of a train;*
- *Two-Way Leverbox: a leverbox designed to throw and hold switches in one of two positions.*

*NOTE 3: See also **switch stand**.*