

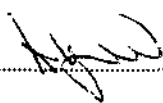
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Issue	I
Date	December 2005

Business Process Document

Specification of low voltage electrical installations on railway premises (including plugs, sockets, trailing leads and appliances)

Endorsement & Authorisation

Endorsed by:



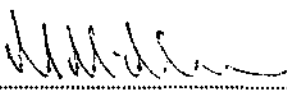
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Issue record

Issue	Date	Comments
I	December 2005	New standard (<i>part of the former RT/E/C/27037 now withdrawn</i>)

Implementation

3 December 2005

Compliance

This Network Rail specification is mandatory and must be complied with by Network Rail and its contractors from 3 December 2005.

When this specification is implemented, it is permissible for all projects, which have formally completed GRIP Level 4, to continue to comply with the Issue of any relevant Network Rail standards current when GRIP Level 4 was reached and not to comply with requirements contained herein unless the head of electrification and fixed plant has stipulated otherwise in the accompanying briefing note.

Where the head of electrification and fixed plant has specified that all projects will comply with the requirements, specific authority not to comply can be sought in the usual manner using the appropriate non-compliance authority processes described in Network Rail standard, [NR/SP/STP/045](#) Managing the process for non-compliance authority (formerly RT/LS/P/045).

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I Purpose

BS7671 (Regulations for Electrical Installations published by the Institution of Electrical Engineers) needs to be supplemented for the many special requirements found in the railway environment. Some of these requirements are detailed in this document. Additionally, measures necessary to ensure compliance with the Electricity at Work Regulations and Health and Safety at Work Act are also encompassed.

2 Scope

This specification details the requirements to be adopted for electrical installations on railway premises (including plugs, sockets, trailing leads and associated appliances). It should be used in conjunction with the current edition of the BS 7671 (I. E. E. Regulations for Electrical Installations) and any other relevant Regulations and Legislation.

All new installations should take cognisance of this specification and existing installations considered when altered or extended.

3 Reference documentation

4 Definitions

4.1 Railway terminology

4.1.1 Track circuit

used as part of the signalling system to detect the presence of a train on a particular section of railway track.

4.1.2 Switch/crossing

part of the railway track where lines diverge or cross

4.2 Domestic environment

A location such as an office where the environment is relatively clean and no heavy work activities are undertaken.

4.3 Industrial environment

A location such as a workshop where contaminants may be present and there may be heavy machinery.

4.4 Underground location

A location which is sub-surface or totally covered such as a rafted station development as Fire Precautions Act - Sub-surface Railways 1989.

4.5 Construction site

A location where building works are in progress and electrical supply installations are of a temporary nature.

5 Installation requirements

5.1.1 50 V 1 phase, centre tap earthed

- a) The supply shall be derived from an isolating transformer to BS EN 61558 with secondary winding centre tapped to earth.
- b) The secondary side of the transformer must incorporate double pole protection compatible with the rating of the outgoing circuit.

5.1.2 110 V 1 phase, centre tap earthed

- a) The supply shall be derived from an isolating transformer to BS EN 61558 with the centre tap on the secondary winding earthed.
- b) The secondary side of the transformer must incorporate double pole protection compatible with the rating of the outgoing circuit.
- c) Consideration should be given to the use of a R.C.D. suitable for personnel protection on each circuit incorporating socket outlets.

5.1.3 110 V 1 phase, isolated and earth-free

- a) The supply shall be derived from an isolating transformer to BS EN 61558.
- b) Application details are covered in the relevant standards documents for Electric Switch Heating (RT/E/S/40045) and Buffer Stop Lighting (GK/RT/0031).

5.1.4 230 V 1 phase

- a) All socket outlet circuits shall be protected by an R.C. D. unit. The rated tripping current shall not exceed 30 mA.
- b) Socket outlets for Computers shall be segregated from other supplies.