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Level 3

Piling adjacent to the running line

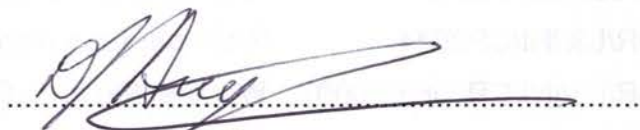
Endorsement and Authorisation

Endorsed by:



Steve Whitmore, Working Group Chair

Authorised by:



David Hughes, Steering Group Chair

Accepted for issue by:



Mick McManus, National Standards Manager

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Issue record

Issue	Date	Comments
1	March 2010	First issue

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 05/06/2010.

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

GE/RT8000	<i>Rule Book</i>
NR/SP/CIV/003	<i>Technical Approval of Design, Construction and Maintenance of Civil Engineering Infrastructure</i>
NR/L2/INI/02009	<i>Engineering Management for Projects</i>
NR/L3/INI/CP0044	<i>Work package plan process</i>
NR/L3/INI/CP0063/F0007	<i>Working Platform Certificate</i>
NR/L2/EBM/088	<i>Responsibility for the maintenance of changes assets</i>
NR/L1/AMG/1010	<i>Policy on working safely in the vicinity of buried services</i>
NR/BS/LI/045 (Issue 3)	Monitoring track over or adjacent to Civil Engineering works: procedure and intervention levels.

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Introduction

The following methodology addresses the situation where piling operations are taking place adjacent to railway infrastructure that is operating normally. It is advised that only competent Piling Specialists companies should be used to undertake works adjacent to a live operational railway i.e. whilst trains are running. This standard has been developed in order to generate a safe system of work (relating to the piling operation) that maintains the safety of the railway so far as is reasonably practicable.

This standard has been prepared by Network Rail in conjunction with the Federation of Piling Specialists and defines the minimum standards and considerations for all piling works to be undertaken adjacent to an operational railway. It is also intended to assist designers and operational teams, of both Network Rail and outside party constructors/developers, involved in this type of construction to understand at an early stage the constraints imposed on the design solution selected.

Further, this document outlines modern methods and procedures in order that the risk of undertaking piling operations adjacent to an operational railway can be minimised to the extent that works may be progressed as far as practicable without resorting to possessions and electrical isolation.

1 Purpose

This document is mandatory and sets the minimum standards and processes to be applied whenever piling operations are to be carried out on or adjacent to Network Rail's Operational Infrastructure where, in the event of mishandling or failure, any part of the equipment in use or its load may fall within 3m of Network Rail's infrastructure during normal train operations.

This document covers the safe installation of piles and not the effect of piles on the infrastructure.

2 Scope

This standard applies to all piling operations adjacent to the operational railway and does not cover on **or near the line** piling operations.

The contents of the document are applicable to all projects where, in the event of mishandling or failure, any part of the equipment in use, or its load, may fall within 3 metres of the nearest rail of Network Rail's operational infrastructure, notwithstanding whether the works are for the railway infrastructure itself or for structures / developments adjacent to the railway.

This document does not cover Signal sighting, radio signals and OLE implications.

The document specifically considers piling works where the safety of the operational railway may be affected as a consequence of:

- Plant operator or workforce error.
- The failure of the ground supporting the piling or support equipment.
- Equipment or accessory failure.

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- d) The piling system and its interaction with the existing ground (including vibration, displacement and loosening affects).
- e) Collapse radius of the attendant crane(s).

3 Abbreviations

BRE

Building Research Establishment

DPE

Network Rail's Designated Project Engineer

LOLER

Lifting Operations and Lifting Equipment Regulations 1998

OLE

Overhead Line Equipment

PUWER

Provision and Use of Work Equipment Regulations 1998

4 Definitions

Adjacent

For the purpose of this standard adjacent refers to piling works being undertaken in areas defined as 'on the line side and/or 'high street environment.

Ancillary Plant

All Plant (apart from the Piling Rig that is addressed separately) involved in the piling process (e.g. crane, concrete pump, RRV (Road Rail Vehicles etc).

Asset Management Plan

A documented agreement between a project and the maintainer produced in accordance with NR/L3/EBM/089.

Competent Person

An individual engaged in the Piling work who is recognised by the organisation requiring the task(s) to be carried out as having sufficient training, knowledge and experience to complete the task(s) safely and efficiently.

Form C

A certificate of Design and Checking of Temporary Works as defined in Network Rails Technical Approval Process.

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High Street Environment (in the Network Rail context)

A 'High Street' environment in the Network Rail context is a site of work outside Network Rail managed infrastructure (NRMI) which may be created at a station, structure or depot where safety risks arising from the work cannot be transferred to NRMI or to activities carried out on it. The site is segregated from NRMI by a physical barrier or a Site Keeper.

Isolation

Electrical isolations of the AC Overhead Line Equipments and/or DC 3rd Rail. The isolation certificate forms part of the Safe System of Work.

Method Statement (does not apply to Network Rail delivered projects see WPP)

An independently checked document detailing a comprehensive step-by-step account for an activity, or range of activities which identifies hazards, resource requirements and method of working to control the risk from the work activity to the public, construction organisation's personnel, and Network Rail's operations and which demonstrates that the execution will be in accordance with the Design.

Lifting Accessories

Devices temporarily attached between lifting equipment and the load being raised or lowered, i.e. equipment by which a load is suspended, for example slings and shackles. Lifting accessories shall be noted in Lift Plans.

Lifting Equipment

Mechanical equipment used for lifting or lowering loads (e.g. cranes).

On or near the line

- a) within 3 metres of the nearest rail
- b) on the line itself

On the lineside

- a) between the railway boundary fence and the point that is called
- b) on or near the line and
- c) in view of the driver of any approaching train or movement.

Piling

The installation of bearing, friction and lateral-restraint (wall) piles. For the purposes of this document, this includes, but is not limited to, the following piling techniques: Continuous Flight Auger, Rotary Bored, Driven Cast-In-Situ, Driven Pre-cast Concrete, Driven Steel Sections, Auger Displacement and Helical Type (screw) piles and ground improvement piles e.g. soil mixing. Additionally retaining wall techniques including Diaphragm Walling, Secant and Contiguous Pile Walling, and Sheet Piling are included. The relevance of this document to other piling systems such as mini-piling, soil nailing and soil anchors, requires consideration on a project by project basis due, typically, to the smaller scale of equipment involved.