

Supplement Notice

Information for users

The attached standard:

RT/CE/S/056

Issue 1

has essential supplementary information

Instructions for use

It is essential that you first read and understand the supplement pertaining to the standard before proceeding to the standard. You must then apply the requirements of the supplement to the standard.

Proceed to supplement ►**I have read & understand the supplement.
Proceed to standard ►**

Ref	NR/SP/TRK/056
Issue	I
Date	March 1996

Rail Testing: Non-Ultrasonic Procedures (formerly RT/CE/S/056)

This temporary front sheet facilitates change to the new Network Rail Standards referencing nomenclature.

The Ref above will be formally allocated to this standard when it is next changed in the meantime the contents, date and issue number of this Network Rail Standard are UNCHANGED and with immediate effect it should be referred to as “(new ref) formerly (old ref)”.

This document is the property of Network Rail. It shall not be reproduced in whole or part nor disclosed to a third party without the written permission of the Standard Owner.

© Copyright 2004 Network Rail

Uncontrolled copy once printed from its electronic source.

Published & Issued by: Network Rail; 40 Melton Street, London NW1 2EE



RAILTRACK LINE

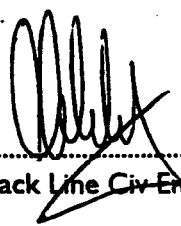
SPECIFICATION

RAIL TESTING : NON-ULTRASONIC PROCEDURES

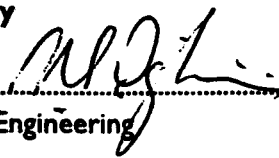
© Copyright 1996 Railtrack PLC

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of Railtrack PLC.

Endorsed by


.....
Chairman, Railtrack Line Civ Eng Stds Cttee

Authorised by


.....
Director Civil Engineering

Published by
Director Civil Engineering
Railtrack HQ
King's Cross Station
London
NI 9AP

Summary

This specification defines the procedures to be adopted for the testing of rail by non-ultrasonic means. The methods described are magnetic particle inspection, dye penetrant inspection, visual examination and rail measurement using calipers.

Issue record

This specification will be updated when necessary by distribution of a complete replacement.

Amended or additional parts of revised pages will be marked by a vertical black line in the margin.

Issue	Date	Comments
1	March 1996	New specification

Responsibilities

This specification is for the use of all persons responsible for the testing and welding of rails on Railtrack owned infrastructure.

Implementation

The provisions of this specification shall be implemented from two months after the issue date shown at the top of this page unless a temporary non-compliance has been authorised by Director Civil Engineering.

Disclaimer

Railtrack PLC has used its best endeavours to ensure that the content, layout and text of this document are accurate, complete and suitable for its stated purpose. It makes no warranties, express or implied, that compliance with the contents of this document shall be sufficient to ensure safe systems of work or operation. Railtrack PLC will not be liable to pay compensation in respect of the content or subsequent use of this document for any purpose other than its stated purpose or for any purpose other than that for which it was prepared except where it can be shown to have acted in bad faith or there has been wilful default.

Supply

Persons requiring controlled copies of this code of practice shall obtain them from their Directorate's Document Control Point.

CONTENTS

Section	Description	Page
1	Purpose	4
2	Scope	4
3	Definitions	4
4	Procedure CM1 - Magnetic particle inspection of the rail head	4
4.1	Purpose of procedure	4
4.2	Equipment	4
4.3	Safety precautions	5
4.4	Applications	5
4.5	Method	5
4.6	Reporting	6
5	Procedure CM2 - Magnetic particle inspection of bolt holes	7
5.1	Purpose of procedure	7
5.2	Equipment	7
5.3	Safety precautions	7
5.4	Method	7
5.5	Reporting	8
6	Procedure CM3 - Magnetic particle inspection of the rail end face	8
6.1	Purpose of procedure	8
6.2	Equipment	8
6.3	Safety precautions	9
6.4	Applications	9
6.5	Method	9
6.6	Action on finding a defect	10
7	Procedure CPI - Dye penetrant inspection of rails	10
7.1	Purpose of procedure	10
7.2	Equipment	11
7.3	Safety precautions	11
7.4	Method	11
7.5	Reporting	12
8	Visual examination of rails	12
9	Use of calipers for rail measurement	13
References		13

1 PURPOSE

This specification defines the procedures to be adopted for the testing of rail by non-ultrasonic means. The methods described are magnetic particle inspection, dye penetrant inspection, visual examination and rail measurement using calipers.

2 SCOPE

The procedures described in this specification are intended to supplement the ultrasonic procedures shown in RT/CE/S/055 *Rail Testing - Ultrasonic Procedures*. Further information on the application of these techniques can also be found in RT/CE/S/055.

3 DEFINITIONS

AC	Alternating current
AMS	Austenitic manganese steel
DC	Direct current
ELCB	Earth leakage circuit breaker

4 PROCEDURE CMI MAGNETIC PARTICLE INSPECTION OF THE RAIL HEAD

4.1 Purpose of procedure

The purpose of this procedure is to enable detection of surface breaking discontinuities in rail head weld repairs. It is not a reliable method for detecting porosity.

4.2 Equipment

The following equipment is required to undertake testing:

1. Electromagnet or permanent magnet to BS 6072
2. White contrast paint to BS 5044
3. Black magnetic particle ink to BS 4069
4. Foil type magnetic flux indicator
5. Cleaner/degreasing agent
6. Umbrella or other rain shield with earthing strap if necessary (see note below)
7. Protective gloves
8. Non-ventilated goggles

Magnetic particle operations cannot be applied properly in wet conditions. During rain or snow it will therefore be necessary to cover the test section with an umbrella or other shield. Any umbrella or shield likely to project above head height must be fitted with an earthing strap when used under overhead electrified lines.