Australian Standard™

Railway track material

Part 12: Insulated joint assemblies

Standards Australia

This Australian Standard was prepared by Committee CE-002, Railway Track Materials. It was approved on behalf of the Council of Standards Australia on 14 June 2002 and published on 1 August 2002.

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Australasian Railway Association

Australian Chamber of Commerce and Industry

Australian Industry Group

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Part 12: Insulated joint assemblies

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PREFACE

This Standard was prepared by the Standards Australia Committee CE-002, Railway Track Materials, to supersede AS 1085.12—1999, *Railway permanent way material*, Part 12: *Insulated joint assemblies*.

The objective of this Standard is to provide manufacturers, specifiers and purchasers with performance requirements for insulated joints for use in railway track.

Changes to the previous edition are as follows:

(a) Change of title of the AS 1085 series (previously *Railway permanent way material*).

(b) The referenced documents list has been revised.

(c) The most recent version of the informative Appendix 'Means of demonstrating compliance with this Standard' has been included.

Two joint grades are described to separate a joint's performance characteristics from its type of construction so that innovation is not stifled. Grade A would generally be for factory-assembled bonded joints, but if the performance requirements were satisfied, Grade A could include a high performance field joint. Also a reduced performance factory-assembled bonded joint might be classed as Grade B.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

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1 SCOPE

This Standard specifies requirements for two grades of insulated joint assemblies. It covers insulated joints that are assembled in a factory (referred to in this Standard as 'factory assembled bonded insulated joints') and joint components supplied as a kit for site assembly in track ('field-assembled insulated joints').

NOTES:

1 Insulated joints are not expansion joints.

2 Means of demonstrating compliance with this Standard are given in Appendix A.

3 Guidance on information to be provided by the purchaser and supplier is given in Appendix B.

2 PURPOSE AND CONTEXT OF USE

2.1 Function

Insulated joint assemblies join rails together in order to provide electrical isolation for signalling purposes between two lengths of rail in a railway track.

2.2 Action

Insulated joint assemblies are subject to—

(a) electrical potential;

(b) loads imposed by the passage of rolling stock and during maintenance;

(c) stress generated by thermal effects; and

(d) environmental exposure.

3 APPLICATION

Insulated joints may be specified as Grade A or Grade B in accordance with this Standard (see Appendix B).

NOTES:

1 The two grades specified in this Standard are intended to give the performance required for different intended uses. It is expected that Grade A would be used in main line and Grade B would be used in other applications. Grade B joints may be used in high traffic areas but a lower life would be expected.

2 Specimens prepared for testing field-assembled insulated joint systems are made under 'ideal' conditions that may not always be representative of the field environment. Factors such as poor alignment, variable surface condition, operator skill and weather conditions will mean that the test performance may not be achievable for field-assembled joints. In addition, factory-assembled joints will have head-hardened rail ends whereas field joints will not if the rails are not themselves head-hardened. Moreover, factory-assembled bonded joints are tested prior to supply and thus the properties can be guaranteed by the manufacturer. For these reasons specifiers of joints may need to select a factory-assembled joint over a field-assembled joint, dependent on actual application.