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Technical guidelines for the use of grooved contact wires



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This IRS integrates in part the content of former UIC Leaflet 870, 1st edition, dated January 1956.

CONTENTS

Foreword	1
Executive summary	3
Field of application	4
References documents	5

General Application

1 – Characteristics of contact wires	7
2 – Life cycle assessment	8
3 – On site storage	9
3.1 – Quality Management	9
3.2 – Traceability	9
3.3 – Storage	9
4 – Installing new contact wire	10
4.1 – Electrification types	10
4.2 – Design Criteria	10
4.3 – Unwinding the contact wire	10
4.4 – Safety Management	11
4.5 – First tensioning of extended contact wire	11
5 – Maintenance	12
5.1 – Maintenance Manuals	12
5.2 – Contact wire first cycle length assessment	12
5.3 – Non uniformity of the contact wire	12
5.4 – Static and dynamic behavior inspection of the contact wire	12
5.5 – Contact wire maintenance cycles	13
5.6 – Minimum thickness	13
5.7 – Breakage statistics	13
5.8 – Pantographs	14
6 – Disposal	15

Appendix A: Contact wire maintenance cycle	16
Appendix B: Thickness limits.....	19
Appendix C: Wear and breakage statistics.....	22

Foreword

An International Railway Solution (IRS) is a document drawn up by consensus and applied on a voluntary basis which aims to facilitate and harmonise railway operation.

IRSs are gradually replacing UIC leaflets.

Members of the International Union of Railways (UIC) participate in the creation of IRSs, of which they benefit in full. Furthermore, marketing to railway stakeholders contributes to the sharing and harmonisation of good practices, in accordance with UIC's primary goal.

While IRSs do not have the force of law, they are created and published in a professional manner and with technical approval on the basis of UIC procedures, and have full technical legitimacy in the railway sector.

The "General application" section constitutes the heart of the IRS and contains the working group's expertise applicable in the broadest manner. The addition of a "Specific application" aims to cover factors specific to a region, a type of service, etc.

Some provisions shall be implemented in all cases to ensure correct application and maintain the system's cohesiveness. Certain operational circumstances require that specific provisions be systematically applied by all users of the document.

For the purposes of understanding, the user acknowledges that the expression of:

- obligation indicates requirements to be respected in order to comply with the expertise expressed in the document (usually "shall");
- recommendation indicates options that are favourable but not essential (usually "should");
- permission indicates options that are recognised but without consequence (usually "may");
- capacity indicates possibilities from a technical standpoint and not permissions or probabilities (usually "can").

Obligation, recommendation and capacity can be expressed in the negative to indicate prohibiting, non-recommendation and incapacity.

If applicable, notably for the purposes of compliance with a UIC approval, passages that are recommended or mandatory for the cohesiveness of the system will be accompanied by the letters "R" and "MCS" respectively.

This IRS reflects the following UIC working group expertise:

This document was prepared by the UIC Energy and Electric Traction Expert Group to provide all the Railways with guidelines for delivery, installation, maintenance, and assessment of the life cycle of the contact wire on overhead contact lines based on uniform criteria and common objectives.

It integrates in full or in part the following UIC leaflets:

UIC Leaflet 870, January 1956

It complements the following standards:

- none

The following IRSs constitute a complementary series:

- none

Executive summary

Specifications of the contact wire are developed in the European Standard *EN 50149:2012* and *IEC Standard 62917*.

Being a complete set of specifications, and in pursuit of global consensus regarding the state of the art of contact wire manufacturing, this document does not rewrite specifications already published.

Instead, it instructs ways of installing and performing maintenance of any type and profile of contact wire thus specified in those norms.

This document gives insight for deliver, storage, installation and maintenance of the contact wire included in OCL systems of the following voltages:

- 1.5 kV dc,
- 3 kV dc,
- 15 kV - 16,7 Hz,
- 25 kV - 50 Hz,
- 25 kV - 60 Hz.

It integrates in full or in part the following UIC leaflets:

- *UIC Leaflet 870*, Technical specification for grooved contact wires, UIC, January 1956

It complements the following standards:

- none

Field of application

This document was prepared by the UIC Energy and Electric Traction Expert Group to provide all the Railways with guidelines for delivery, installation, maintenance, and assessment of the life cycle of the contact wire on overhead contact lines based on uniform criteria and common objectives.