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**Technical specification for the supply of elastomer flange
connections for intercommunicating gangways**



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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:

Rolling stock sector, SET 02, "Passenger related items"

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

- *UIC Leaflet 845*

It complements the following standards:

- none

The following IRSs constitute a complementary series:

- *IRS 50561*

Executive summary

This technical specification governs the supply of elastomer flange connections for the intercommunicating gangways of rolling stock.

Field of application

This IRS applies to elastomer flange connections for the intercommunicating gangways of rolling stock which are defined in accordance with *IRS 50561*.

Reference documents

The following documents are cited in this IRS or strongly support its requirements and recommendations:

For dated references, only the edition cited applies.

For undated references, the latest edition of the referenced document (including any amendments) applies.

1. International Railway Solution (IRS)

International Union of Railways (UIC)

- [1] *IRS 50561: Railway Application - Rolling Stock - Interconnecting gangway systems between vehicles*

2. International Standards

International Organization for Standardisation (ISO)

- [2] *ISO 34-1: Rubber, vulcanised or thermoplastic - Determination of tear strength - Part 1: Trouser, angle and crescent test pieces*
- [3] *ISO 37: Rubber, vulcanised or thermoplastic - Determination of tensile stress-strain properties*
- [4] *ISO 48-2: Rubber, vulcanised or thermoplastic - Determination of hardness - Part 2: Hardness between 10 IRHD and 100 IRHD*
- [5] *ISO 48-4: Rubber, vulcanised or thermoplastic - Determination of hardness - Part 4: Indentation hardness by durometer method (Shore hardness)*
- [6] *ISO 132: Rubber, vulcanised or thermoplastic - Determination of flex cracking and crack growth (De Mattia)*
- [7] *ISO 188: Rubber, vulcanised or thermoplastic - Accelerated ageing and heat resistance tests*
- [8] *ISO 19702: Guidance for sampling and analysis of toxic gases and vapours in fire effluents using Fourier Transform Infrared (FTIR) spectroscopy*
- [9] *ISO 23529: Rubber-General procedures for preparing and conditioning test pieces for physical test methods*
- [10] *ISO 2781: Rubber, vulcanised or thermoplastic - Determination of density*
- [11] *ISO 4589-2: Plastics - Determination of burning behaviour by oxygen index - Part 2: Ambient-temperature test*
- [12] *ISO 4649: Rubber, vulcanised or thermoplastic - Determination of abrasion resistance using a rotating cylindrical drum device*
- [13] *ISO 5659-2: Plastics - Smoke generation - Part 2: Determination of optical density by a single-chamber test*

3. European Standards

European Committee for Standardization (CEN)

- [14] *EN 45545-2: Railway applications - Fire protection on railway vehicles - Part 2: requirements for fire behavior of materials and components*

Abbreviations and Symbols

IRS	International Railway Solution
UIC	International Union of Railways