
Road vehicles — Fuse-links —

**Part 8:
Fuse-links with bolt-in contacts (Type
H and J) with rated voltage of 450 V**

Véhicules routiers — Liaisons fusibles —

*Partie 8: Liaisons fusibles avec contacts boulonnés (type H et J) à
tension nominale de 450 V*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 32, *Electrical and electronic components and general system aspects*.

This second edition cancels and replaces the first edition (ISO 8820-8:2012), which has been technically revised. The main changes compared to the previous edition are as follows:

- modification of [Table 7](#) - dimension of c, Type H, and
- editorial changes.

A list of all parts in the ISO 8820 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Road vehicles — Fuse-links —

Part 8:

Fuse-links with bolt-in contacts (Type H and J) with rated voltage of 450 V

1 Scope

This document specifies fuse-links with bolt-in contacts (Type H and J) and test fixtures for the fuse-links for use in road vehicles. It establishes, for these fuse-link types, the rated current, test procedures, performance requirements and dimensions.

This document is applicable to fuse-links with a rated voltage of 450 V DC, a current rating of ≤ 400 A and a breaking capacity of 2 000 A intended for use in road vehicles.

This document is intended to be used in conjunction with ISO 8820-1 and with ISO 8820-2. The numbering of its clauses corresponds to that of ISO 8820-1 whose requirements are applicable, except where modified by requirements particular to this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8820-1, *Road vehicles — Fuse-links — Part 1: Definitions and general test requirements*

ISO 6722-1, *Road vehicles — 60 V and 600 V single-core cables — Part 1: Dimensions, test methods and requirements for copper conductor cables*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8820-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

4 Marking, labelling and colour coding

The rated current, manufacturer's name or trademark and "450 V DC" shall be permanently marked on the fuse-link.

5 Tests and requirements

5.1 General

5.1.1 Test criteria

In addition to carrying out the test procedures in accordance with ISO 8820-1 the following criteria shall apply:

All tests shall be performed as specified in [Table 1](#).

The test fixtures for electrical tests shall be designed in accordance with [Figure 4](#). The connection resistance shall be not higher than 0,35 mΩ to ensure the proper function of the test fixture. As two or more fuse-links are tested in series, they shall be mounted not less than 150 mm apart.

5.1.2 Test sequence

Table 1 — Test sequence

No	Test		Clause	Sample group ^a						
				1	2	3	4	5	6	7
1	Dimensions		6	X	X	X	—	—	—	—
2	Marking, labelling		4	X	X	X	X	X	X	X
3	Strength of terminals		5.8	X	X	X	X	X	X	X
4	Fuse-link voltage drop		5.2	X	X	—	—	—	—	—
5	Environmental condition	Climatic load	5.4	—	—	X	—	—	—	—
		Chemical loads		—	—	—	X	—	—	—
		Mechanical load		—	—	—	—	X	—	—
6	Transient current cycling		5.3	—	—	—	—	—	X	—
7	Temperature rise		5.9	—	—	—	—	—	—	X
8	Resistance against temperature shock		5.10	—	—	—	—	—	—	X
9	Breaking capacity		5.7	X	—	—	—	—	—	—
10	Fuse-link voltage drop		5.2	— ^c	—	X	X	X	X	X
11	Operating time rating	1,1 I _R	5.5	—	X	X	X	X	X	X
		1,35 I _R		—	Y ^b	Y	Y	Y	Y	Y
		1,5 I _R		—	Y	Y	Y	Y	Y	Y
		2,0 I _R		—	Y	Y	Y	Y	Y	Y
		3,0 I _R		—	Y	Y	Y	Y	Y	Y
		5,0 I _R		—	Y	Y	Y	Y	Y	Y
12	Strength of terminals		5.8	X	X	X	X	X	X	X

^a Each sample group shall contain a minimum of 10 fuse-links.

^b For operating time rating, tests marked with “Y” in sample groups 2, 3, 4, 5, 6 and 7 shall be divided equally. These fuse-links are intended to be subjected to a single operating time rating test only.

^c For sample groups marked with “—” tests are not required.

5.1.3 Test cable sizes

Test cable sizes shall be as given in [Table 2](#). All tests for a particular fuse-link rating shall be performed using the same cable size.

Test cable sizes are specified to allow comparative fuse-link tests to be carried out. The cable size specified does not necessarily indicate the size of cable to be used in the vehicle application.