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Road vehicles — Fuse-links —

Part 9:
Fuse-links with shortened tabs (Type D)

Véhicules routiers — Liaisons fusibles —

Partie 9: Liaisons fusibles à languettes raccourcies (Type D)

ICS 43.040.10

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Contents

Page

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 8820-9 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrically and electronic equipment*.

ISO 8820 consists of the following parts, under the general title *Road vehicles — Fuse-links*:

— *Part 1: Definitions and general test requirements*

— *Part 2: User's guide*

— *Part 3: Fuse-link´s with tabs (blade type) Type C (medium), Type E (high current) and Type F (miniature)*

— *Part 4: Fuse-links with female contacts (Type A) and bolt-in contacts (Type B) and their test fixtures*

— *Part 5: Fuse links with axial terminals (strip fuse-links) Type SF30 and SF51 and test fixture*

— *Part 6 Single bolt fuse-links*

— *Part 7: Fuse-links with a rated voltage of 450V (Type G)*

— *Part 8: Fuse-links with bolt-in contacts (Type H, I) with a rated voltage of 450V*

— *Part 9: Fuse-links miniature low profile (Type K)*

Road vehicles — Fuse-links —

Part 9:
Fuse-links with shortened tabs (Type D)

1 Scope

This standard specifies fuse-links with shortened tabs (Type K) for use in road vehicles. It establishes, for these fuse-link types, the rated current, test procedures, performance requirements and dimensions.

This standard is applicable to fuse-links with a rated voltage of 58 V, a current rating of ≤ 30A and a breaking capacity of 1000 A intended for use in road vehicles.

This part of ISO 8820 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 part of ISO 8820.

2 Normative references

The following standards contain provisions, which through reference in this text, constitute provisions of this part of ISO 8820. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8820 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International standards.

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

ISO 6722-2, *Road vehicles – 60V and 600V single core cables – Dimensions, test methods and requirements for aluminium conductor cables*

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

ISO 8820-2, *Road vehicles – Fuse-links - Part 2:User's guide*

3 Terms and definitions

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

4 Marking, labelling and colour coding

See ISO 8820-1 and Table 1.

Table 1 — Fuse-link colour coding

Current rating A	Colour
1	Black
2	Grey
3	Violet
4	Pink
5	Tan / Light brown
7,5	Brown
10	Red
15	Blue
20	Yellow
25	White [1)]
30	Green
[1)] for transparent fuse bodies "white" means no colour in the plastic material is added	

5 Tests and requirements

5.1 General

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

Tests shall be performed following the test sequences in Table 2.

The test fixtures for electrical tests shall be designed in accordance with Figure 1.

Fuse-links according to this part of ISO 8820 shall provide for visible evidence of an open fuse element.

5.1.1 Test sequence

Table 2 — Test sequence

No	Test		Clause	Sample groups *)						
				1	2	3	4	5	6	7
1	Dimensions		6	X	X	X	--	--	--	--
2	Marking, labelling and colour coding		4	X	X	X	X	X	X	X
3	Fuse-link voltage drop		5.2	X	X	X	--	--	--	--
4	Strength of terminals		5.8	X	X	X	--	--	--	--
5	Environmental conditions	Climatic load	5.4	--	--	--	X	--	--	--
		Chemical load		--	--	--	--	X	--	--
		Mechanical load		--	--	--	--	--	X	--
6	Transient current cycling		5.3	--	--	--	--	--	--	X
7	Fuse-link voltage drop		5.2	--	--	--	X	X	X	X
8	Current steps		5.6	--	--	X	--	--	--	--
9	Breaking capacity		5.7	X	--	--	--	--	--	--
10	Operating time rating test	1,1 I_R	5.5	--	X	--	X	X	X	X
		1,35 I_R		--	Y	--	Y	Y	Y	Y
		1,6 I_R		--	Y	--	Y	Y	Y	Y
		2 I_R		--	Y	--	Y	Y	Y	Y
		3,5 I_R		--	Y	--	Y	Y	Y	Y
		6 I_R		--	Y	--	Y	Y	Y	Y
11	Strength of terminals		5.8	X	X	X	X	X	X	X

*) – Each sample group shall contain a minimum of 10 fuse-links for each current rating.

Y – For these operating time tests the sample groups 2, 4, 5, 6 and 7 shall be divided equally. These fuse-links are intended to be subjected to a single operating time test only.

-- – Not required

5.1.2 Test cable sizes

Test cable sizes shall be as given in Table 3. 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 herein does not necessarily indicate the size of cable to be used in the vehicle application.

Table 3 — Test cable sizes

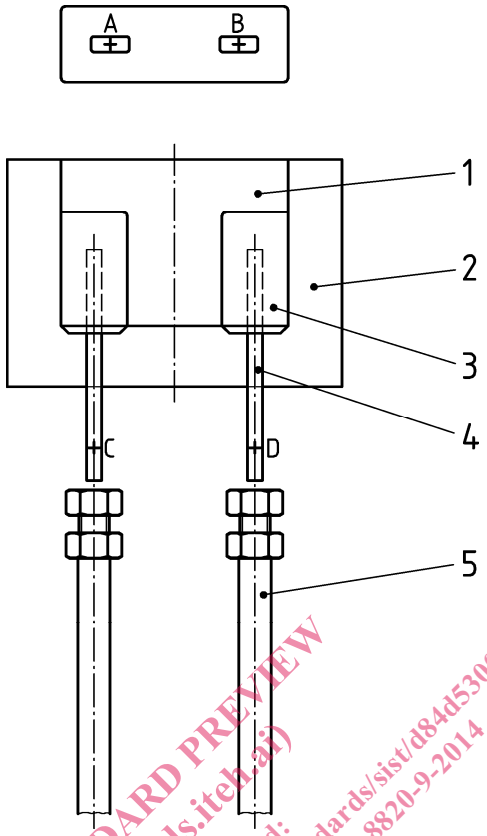
Rated current I_R A	Conductor cross-sectional area [1] mm^2	Length mm
1	0,35	500 ± 50
2		
3		
4		
5	0,5	
7,5	0,75	
10	1,0	
15	1,5	
20	2,5	
25		
30	4,0	

[1] Conductor material according ISO 6722-1 and ISO 6722-2

5.2 Voltage drop and connection resistance

5.2.1 Tests

The voltage drop U_{AB} shall be measured at points A and B across the fuse-link tabs as shown in Figure 1. The connection resistance shall be measured at the points A, C and B, D.



Key:

1 Fuse-link
2 Test fixture
3 Fuse blade
4 Test clip (as defined in table 8)
5 Cable size according to table 3.

NOTE Points A and B are the measuring points for the voltage drop.
Points A, C and B, D are the measuring points for connection resistance.

Figure 1 — Test schematic (type K)

5.2.2 Requirements

See Table 4.