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# International Standard



# 7578

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## Road vehicles — Glow plugs, sheath type — General requirements and test methods

*Véhicules routiers — Bougies de préchauffage du type à fourreau — Caractéristiques générales et méthodes d'essai*

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## Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 7578 was developed by Technical Committee ISO/TC 22, *Road vehicles*, and was circulated to the member bodies in November 1981.

It has been approved by the member bodies of the following countries :

Australia	Italy	Romania
Austria	Japan	South Africa, Rep. of
Belgium	Korea, Dem. P. Rep. of	Spain
China	Korea, Rep. of	Sweden
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Germany, F. R.	New Zealand	United Kingdom
Hungary	Poland	USSR

The member bodies of the following countries expressed disapproval of the document on technical grounds :

France  
USA

# Road vehicles — Glow plugs, sheath type — General requirements and test methods

## 1 Scope

This International Standard specifies general requirements and test methods for sheath type glow plugs with one insulated terminal.

## 2 Field of application

This International Standard applies to glow plugs, as specified in ISO 6550, designed for an installation of a nominal voltage of 12 V and used as a starting aid in diesel engines.

## 3 Reference

ISO 6550, *Road vehicles — Glow plugs M 12 × 1,25 and M 14 × 1,25 sheath type and cylinder head housing dimensions.*

## 4 General requirements and test methods

### 4.1 Air leakage test

The sample shall be subjected to an air pressure of 40 bar above normal atmospheric pressure on the sheath end for a duration of 15 s at an ambient temperature of  $23 \pm 5$  °C.

No continuous leakage is allowable in the body of the glow plug.

### 4.2 Thermal and electrical function tests

The tests shall be carried out at an ambient temperature of  $23 \pm 5$  °C with a test installation equipped with a cooling device as shown in the figure with the aid of which the temperature can be maintained below 30 °C at the sealing seat of the glow plug housing.

The tests shall be carried out at the nominal voltage of the glow plug concerned (as marked on it) with a tolerance of  $\pm 0,1$  V.

#### 4.2.1 Glow plug temperature

At the nominal voltage of the glow plug, the sheath shall have reached a temperature of 850 °C at the hottest point (to be specified by the manufacturer) within the measuring distance

of 8 mm, as shown in the figure, after not more than 50 s (designated normal sheath type glow plugs) or not more than 20 s (designated fast warm up sheath type glow plugs).

Under the same conditions the sheath shall have reached 1 000 °C within 60 s for fast warm up types. For normal types no values are specified.

Before the test, the sample shall be made to glow for 2 to 3 min at the nominal voltage to permit oxidation and then allowed to cool to ambient temperature.

#### 4.2.2 Electrical performance

##### 4.2.2.1 Cold resistance

The cold resistance shall be measured at a temperature of  $23 \pm 5$  °C.

The method used shall be such that the current drawn by the glow plug does not change after 1 min by more than 2 %.

Under these conditions the minimum resistance of the glow plug shall be 0,2 Ω.

NOTE — Care shall be taken to ensure that contact resistances are controlled so that they do not induce significant errors.

##### 4.2.2.2 Operational current drawn

The operational current drawn shall be read 60 s after switching on for normal sheath type glow plugs and 30 s after switching on for fast warm up sheath type glow plugs.

The operational current shall not exceed 12 A for normal sheath type glow plugs and 10 A for fast warm up sheath type glow plugs.

### 4.3 Overvoltage test

The test installation shall be as shown in the figure.

At an ambient temperature of  $23 \pm 5$  °C a test voltage of 125 % of the nominal voltage of the glow plug shall be applied for 15 s.

After this test, the glow plug shall still meet the conditions of the thermal and electrical function tests as specified in 4.2.