INTERNATIONAL STANDARD ISO 2747

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Vitreous and porcelain enamels — Enamelled cooking utensils — Determination of resistance to thermal shock

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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 2747 was drawn up by Technical Committee ISO/TC 107, *Metallic and other non-organic coatings*, and circulated to the Member Bodies in June 1972.

It has been approved by the Member Bodies of the following countries :

Australia	Italy	South Africa, Rep. of
Egypt, Arab Rep. of	Japan	Sweden
France	Netherlands	Switzerland
Germany	New Zealand	Turkey
Hungary	Poland	United Kingdom
India	Portugal	U.S.S.R.
Ireland	Romania	

No Member Body expressed disapproval of the document.

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Vitreous and porcelain enamels — Enamelled cooking utensils — Determination of resistance to thermal shock

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for determining, by successive thermal shock tests, the behaviour of vitreous and porcelain enamelled cooking utensils and similar articles under sudden changes of temperature (resistance to thermal shock).

2 DEFINITIONS

For the purpose of this International Standard the following definitions apply :

2.1 thermal shock test : The series of operations commencing with the pouring of cold water into the heated test specimen and ending when the thermal shock temperature for the subsequent thermal shock test has been reached.

2.2 thermal shock temperature : The temperature to which the specimen is heated before being chilled with cold water.

2.3 thermal shock resistance : The difference between thermal shock temperature and water temperature at which the specimen shows the first damage on chilling or during subsequent heating.

2.4 damage : Any chipping or tension cracks in the enamel visible at a distance of 25 cm by normal sight.

NOTE — If an effect of thermal shock exceeding the first damage visible by normal sight is taken as the end of the test, it shall be the subject of agreement in each single case and included in the test report.

3 PRINCIPLE

The test for thermal shock resistance consists of a series of single thermal shock tests with a temperature increase of 20 °C between each thermal shock. The specimen is heated from the outside and then chilled inside with water at 20 °C.

The thermal shock temperature applied for the first test is 200 °C. The test ends when the first visible damage occurs.

4 APPARATUS

4.1 Electric hot-plate with diameter and maximum output in accordance with the following table :

Internal diameter of specimens	Hot-plate	
	Diameter	Maximum output
mm	mm	W
up to 180	145	1 000 ± 100
over 180 up to 220	180	1 500 ± 150
over 220	220	2 000 ± 200

For testing specimens with an uneven base, the hot-plate must be surmounted by a ring filled with copper grit of grain size 0,1 to 0,125 mm.

4.2 Temperature measuring device, accurate to ± 2 °C.

4.3 Thermometer for measuring the temperature of the water.

4.4 Chamois leather.

4.5 Water receptacle.

4.6 Stop-watch.

5 SAMPLING AND SPECIMENS

5.1 The utensils to be tested serve as specimens without any modification.

5.2 The specimens shall be representative of the entire consignment. The kind of sampling shall be agreed upon between the interested parties.

5.3 At least three specimens shall be tested.