TC 92

International Standard ISO 1182

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Fire tests — Building materials — Non-combustibility test

Essais au feu — Matériaux de construction — Essai de non-combustibilité

Second edition — 1983-12-15

UDC 699.81 : 691. : 620.1 **Ref. No. ISO 1182-1983 (E)**

Descriptors : construction materials, fire tests, flammability testing, test equipment, test specimens.

Price based on 16 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

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 1182 was developed by Technical Committee ISO/TC 92, *Fire tests on building materials, components and structures*, and was circulated to the member bodies in September 1982.

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

Australia	Hungary	South Africa, Rep. of
Austria	India	Spain
Brazil	Ireland	Sweden
Canada	Israel	United Kingdom
Czechoslovakia	Jamaica	USA
Denmark	New Zealand	Yugoslavia
Egypt, Arab Rep. of	Norway	

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

Belgium	Germany, F.R.
France	Netherlands

This second edition cancels and replaces the first edition (i.e. ISO 1182-1979).

Fire tests — Building materials — Non-combustibility test

0 Introduction

0.1 It may be important to ascertain whether a material will or will not contribute directly to fire development and this test has been designed to allow this to be done. Its results will provide information from which regulating authorities will be assisted in deciding whether the material in question may be used without undue hazard in certain locations in buildings, for example access routes and escape ways (see also clause A.1 in annex A).

0.2 From a technical point of view, the test gives no absolute statement concerning "non-combustibility". For regulatory purposes, it may be necessary to carry out additional tests. A statement on the relationship of combustibility/non-combustibility tests to reaction to fire tests is given in clause 6 of ISO/TR 6585.

0.3 The method of test used by the International Maritime Organization (formerly IMCO) [IMCO Res. A. 472 (XII)] is similar to the method described in this International Standard but, at present, is not identical to it.

0.4 This revision supersedes ISO 1182-1979 and provides for a closer specification for the equipment and procedures as well as a new method of evaluating results which is based on a more logical basis for the test and which overcomes many of the problems associated with the earlier method of test. Otherwise the basic principles of the test are unchanged and any material may be considered, for regulatory and other purposes, to enjoy, in general, the same performance in relation to the tested quality of reaction to fire as those materials which would have passed the test in the previous edition.

0.5 Suggested criteria for evaluation of materials are given in annex A and a commentary on the test is given in annex B. These annexes are not a mandatory part of the specification, but all who use the test are strongly recommended to read the commentary before doing so.

1 Scope[1)]

This International Standard specifies a method of test for the determination of the combustibility performance of a building material under specified conditions.

SAFETY WARNING — So that suitable precautions are taken to safeguard health, the attention of all persons concerned in fire tests is drawn to the possibility that toxic or harmful gases may be evolved in the combustion of test specimens.

2 Field of application

This method of test is intended for the testing of building materials but is not applicable to the testing of products which are coated, faced or laminated. In such cases, tests may be carried out separately on the individual materials from which the product is formed and this shall be clearly stated in the test report. The performance of coated, faced or laminated products may also be assessed by other reaction to fire tests.

3 Sampling

The sample shall be sufficiently large to be representative of the material, particularly in the case of non-homogeneous materials.

4 Specimen construction and preparation

4.1 Specimens

4.1.1 Five specimens of the material shall be tested.

4.1.2 The specimens shall be cylindrical and each shall have a diameter of $45\ _{-2}^{\ 0}$ mm, a height of 50 ± 3 mm and a volume of 80 ± 5 cm^3.

4.2 Preparation

4.2.1 The specimens should be as representative as possible of the average properties of the material and should be prepared to the size specified in 4.1.2.

4.2.2 If the thickness of the material is less than 50 mm, specimens of the height specified in 4.1.2 shall be made by using a sufficient number of layers of the material and/or by ad-

1) IMPORTANT NOTE — This standard method of test and its results should be used solely to describe the combustibility or non-combustibility of a material in response to heat under controlled laboratory conditions. It should not by itself be used for describing or appraising the fire hazard of materials under actual fire conditions or as a sole source on which a valid assessment of hazard pertaining to combustibility can be based.

justment of the material thickness. The layers shall occupy a horizontal position in the specimen holder and shall be held together firmly, without significant compression, by means of two fine steel wires, of maximum diameter 0,5 mm, to prevent air gaps between layers, prior to testing.

The layers shall be arranged so that the hot junction of the specimen centre thermocouple lies within the material, not at an interface.

4.2.3 A 2 mm diameter hole shall be made axially in the top of the specimen to locate the hot junction of the specimen thermocouple at the geometric centre of the specimen.

4.3 Conditioning of specimens

The specimens shall be conditioned in a ventilated oven maintained at 60 ± 5 °C, for between 20 and 24 h, and cooled to ambient temperature in a desiccator prior to testing. The mass of each specimen shall be determined to an accuracy of 0,1 g prior to test in the furnace (see clause B.8 in annex B).

5 Test apparatus[1)]

5.1 General

5.1.1 All dimensions given in the following description of the test apparatus are nominal values, unless tolerances are specified.

5.1.2 The apparatus shall consist of a furnace comprising essentially a refractory tube surrounded by a heating coil and enclosed in an insulated surround. A cone-shaped airflow stabilizer shall be attached to the base of the furnace and a draught shield to its top. A typical arrangement for the apparatus is show in figure 1.

5.1.3 The furnace shall be mounted on a stand and shall be equipped with a specimen holder and a device for inserting the specimen holder into the furnace tube.

5.1.4 Thermocouples shall be provided for measuring the furnace temperature and the temperature in the centre of the specimen and the temperature on the surface of the specimen.

5.2 Furnace, stand and draught shield

5.2.1 The furnace tube shall be made of an alumina refractory material as specified in table 1, of density 2 800 ± 300 kg/m^3 and shall be 150 ± 1 mm high with an internal diameter of 75 ± 1 mm and a wall thickness of 10 ± 1 mm. The overall wall thickness, including the applied refractory cement to retain the electrical winding, shall not exceed 15 mm.

Table 1 — Composition of the furnace tube refractory material

Material	Composition % (m/m)
Alumina (Al_2O_3)	> 89
Silica and alumina (SiO_2, Al_2O_3)	> 98
Iron(III) oxide (Fe_2O_3)	< 0,45
Titanium dioxide (TiO_2)	< 0,25
Manganese oxide (Mn_3O_4)	< 0,1
Other trace oxides (sodium, potassium, calcium and magnesium oxides)	the balance

5.2.2 The furnace tube shall be provided with a single winding of 80/20 nickel/chromium resistance tape 3 mm wide and 0,2 mm thick, and shall be wound as specified in figure 2.

5.2.3 The furnace tube shall be fitted in the centre of a 200 mm external diameter surround made of insulating material, 150 mm in height and of 10 mm wall thickness, and fitted with top and bottom plates recessed internally to locate the ends of the furnace tube. The annular space between the tubes shall be filled with magnesium oxide powder of bulk density 140 ± 20 kg/m^3.

5.2.4 To the underside of the furnace shall be attached an open-ended cone-shaped air flow stabilizer 500 mm in length, and reducing uniformly from 75 ± 1 mm internal diameter at the top to 10 ± 0,5 mm internal diameter at the bottom. The stabilizer shall be manufactured from 1 mm thick sheet steel and finished smooth on the inside. The joint between the stabilizer and the furnace shall be a close, airtight fit and finished smooth internally. The upper half of the stabilizer shall be insulated externally with a 25 mm thick layer of mineral fibre insulating material having a thermal conductivity of 0,04 ± 0,01 W/(m·K) at a mean temperature of 20 °C.

5.2.5 A draught shield made of the same material as the stabilizer cone shall be provided at the top of the furnace. It shall be 50 mm high and have an internal diameter of 75 ± 1 mm. The draught shield and its joint with the top of the furnace shall be finished smooth internally, and the exterior shall be insulated with a 25 mm layer of mineral fibre insulation having a thermal conductivity of 0,04 ± 0,01 W/(m·K) at a mean temperature of 20 °C.

5.2.6 The assembly of the furnace, stabilizer cone and draught shield shall be mounted on a firm stand which shall be provided with a base and draught screen attached to the stand to reduce draughts around the bottom of the stabilizer cone. The draught screen shall be approximately 550 mm high and the bottom of the stabilizer cone shall be approximately 250 mm above the base plate.

1) Working drawings and other details of an apparatus known to conform to the requirements of this International Standard will be made available at a date to be announced later, by the Secretariat of ISO/TC 92 or by the national standards body of the following countries: Belgium, Denmark, France, Netherlands, Switzerland, United Kingdom and USA.

5.3 Specimen holder and insertion device

5.3.1 The specimen holder shall be as specified in figure 3, and shall be made of nickel/chromium or heat-resisting steel wire. A fine metal gauze tray of heat-resisting steel shall be placed in the bottom of the holder. The mass of the holder shall be 15 ± 2 g.

5.3.2 The specimen holder shall be capable of being suspended from the lower end of a tube of stainless steel having an outside diameter of 6 mm and a bore of 4 mm.

5.3.3 The specimen holder shall be provided with a suitable insertion device for lowering it precisely down the axis of the furnace tube without shock, so that the specimen is located rigidly at the geometric centre of the furnace during the test. The insertion device shall consist of a metallic sliding rod moving freely within a vertical guide fitted to the side of the furnace (see figure 1).

5.4 Thermocouples

5.4.1 Mineral insulated stainless steel sheathed thermocouples shall be used, having an external diameter of 1,5 mm, with nickel/chromium *v.* nickel/aluminium thermocouple elements of 0,3 mm nominal diameter. The junction shall be of the insulated type.

5.4.2 All new thermocouples shall be artificially aged before use to reduce reflectivity (see clause B.4 in annex B).

5.4.3 The furnace thermocouple shall be located with its hot junction 10 ± 0,5 mm from the tube wall and at a height corresponding to the mid-point of the furnace tube. The position of the thermocouple may be set using the locating guide illustrated in figure 4, and the correct position shall be maintained with the help of a guide attached to the draught shield.

5.4.4 The specimen centre thermocouple shall be positioned so that its hot junction is located at the geometric centre of the specimen. This shall be achieved by means of a 2 mm diameter hole in the top of the specimen (see 4.2.3 and figure 5).

5.4.5 The specimen surface thermocouple shall be positioned so that its hot junction is in contact with the specimen at mid-height of the specimen at the start of the test and shall be located diametrically opposite the furnace thermocouple (see figure 5).

5.4.6 The temperatures shall be recorded continuously using a device as specified in 6.5.

5.5 Test environment

5.5.1 The apparatus shall not be exposed to draughts or any form of strong direct sunlight or artificial illumination which would adversely affect the observation of flaming inside the furnace.

5.5.2 To facilitate observation of sustained flaming and for the safety of the operators, it is advisable to provide a mirror above the apparatus positioned so that it will not affect the test. A mirror 300 mm square, at an angle of 30 ° to the horizontal, 1 m above the furnace has been found suitable.

6 Additional equipment

6.1 Voltage stabilizer

This shall be a single-phase automatic voltage stabilizer with a nominal rating of not less than 1,5 kVA. It shall be capable of maintaining the accuracy of the output voltage within ± 1 % of the rated value from zero to full load.

6.2 Variable transformer

This shall be capable of handling a maximum of 1,5 kVA and of regulating the voltage output from zero to a maximum value equal to that of the input voltage. The voltage output shall vary linearly over the range.

6.3 Electrical input monitor

An ammeter, voltmeter or wattmeter shall be provided to enable rapid setting of the furnace to approximately the operating temperature. Any of these instruments shall be capable of measuring the levels of electrical power specified in 7.5.

6.4 Power controller

This can be used as an alternative to the voltage stabilizer, variable transformer and electrical input monitor specified in 6.1, 6.2 and 6.3. It shall be of the type which incorporates phase-angle firing and shall be linked to a thyristor unit capable of supplying 1,5 kVA. The maximum voltage shall not be greater than 100 V and the current limit shall be adjusted to give "100 % power" equivalent to the maximum rating of the heater coil. The stability of the power controller shall be approximately 1,0 % and the setpoint repeatability shall be ± 1,0 %. The power output shall be linear over the setpoint range.

6.5 Temperature indicator

The temperature indicator shall be a zero current device capable of continuously measuring the output from the thermocouples to the nearest 1 °C or the millivolt equivalent. It shall be capable of assimilating the incoming data and producing a permanent record of this at intervals of not greater than 0,5 s. A suitable instrument is either a digital device or a multirange chart recorder with provision for operation with a suppressed zero signal, which includes an operating range of 10 mV full scale deflection with a "zero" of approximately 700 °C.

NOTE — *Because the outputs of three thermocouples are recorded* during the procedure, a three-channel instrument or three separate indicators are required.

6.6 Timing device

The timing device shall be capable of recording elapsed time to the nearest second and shall be accurate to within 1 s in 1 h.

6.7 Desiccator

This is used for storing the conditioned specimens (see 4.3). The desiccator shall be of a size capable of containing specimens for at least one working day, for example 10 specimens, or as required.

7 Setting up procedure

7.1 Siting of apparatus

Site the apparatus so as to meet the requirements of 5.5.1.

7.2 Specimen holder

Remove the specimen holder (5.3) and its support from the furnace (see 5.2).

7.3 Furnace thermocouple

The furnace thermocouple shall be positioned as specified in 5.4.3 and connected to the temperature indicator (6.5), using compensating cables.

7.4 Electricity supply

Connect the heating element of the furnace to the voltage variable transformer (6.2) and the electrical input monitor (6.3) (or the power controller, stabilizer, see 6.4) as shown in figure 6. Automatic thermostatic control of the furnace shall not be used during testing.

NOTE — The heating element should draw a current of between 9 and 10 A at approximately 100 V under steady state conditions. In order not to overload the winding, it is recommended that the maximum current does not exceed 11 A. A new furnace tube should be subjected to slow heating initially. A suitable procedure has been found to be to increase the furnace temperature in steps of approximately 200 °C, allowing 2 h heating at each temperature.

7.5 Furnace stabilization

With the specimen holder removed from the furnace, adjust the power input to the furnace so that the average furnace temperature, as indicated by the furnace thermocouple (see 5.4), is stabilized for at least 10 min at 750 ± 5 °C with a drift of not more than 2 °C in 10 min, and take a continuous record.

7.6 Furnace wall temperature

7.6.1 When the furnace temperature is stabilized as given in 7.5, measure the temperature of the furnace wall using a contact thermocouple of the type specified in 5.4.1 and the temperature indicator specified in 6.5. Make measurements on three vertical axes of the furnace wall such that the distances separating each of the axes are the same. Record the temperatures on each axis at a position corresponding to the mid-point height of the furnace tube and at positions both 30 mm above and 30 mm below the mid-point height. This procedure may be conveniently achieved using a suitable thermocouple scanning device with the thermocouple and insulating tubes in the positions specified in figure 7. Particular attention should be paid to the contact between thermocouple and furnace wall which, if poor, will lead to low temperature readings. At each measurement point the temperature recorded by the thermocouple shall be stable for at least 5 min before a temperature reading is taken.

7.6.2 Calculate and record the arithmetic mean of the temperature readings recorded in 7.6.1 as the average furnace wall temperature; this shall be 835 ± 10 °C and shall be maintained in this range prior to the start of the test.

7.6.3 The procedure given in 7.6.1 to 7.6.2 shall be carried out for a new furnace and whenever the furnace tube, winding, insulation or power supply is replaced (see also clause B.6 in annex B and figure 8).

8 Test procedure

8.1 Procedure

8.1.1 The apparatus shall be as specified in 7.2 to 7.4.

8.1.2 Stabilize the furnace as specified in 7.5.

8.1.3 Before starting the test, ascertain that the whole equipment is in good working order, for example that the stabilizer is clean, the off insertion device is working smoothly and the specimen holder exactly occupies the required position in the furnace.

8.1.4 Insert one specimen prepared and conditioned as specified in clause 4 into the specimen holder (5.3) suspended on its support, and ensure that the thermocouples as specified in 5.4.4 and 5.4.5 are correctly positioned.

8.1.5 Place the specimen holder in the furnace in the position specified in 5.3.3 taking not more than 5 s for this operation.

8.1.6 Start the timing device (6.6) immediately following the insertion of the specimen into the furnace.

8.1.7 Record the temperatures measured by both the furnace and specimen thermocouples (5.4) throughout the test.

In some cases, the specimen centre thermocouple provides no additional information and in such cases it need not be used (see clause B.5 in annex B).

8.1.8 Normally, carry out the test for a period of 30 min. If final temperature equilibrium, which is achieved when the temperature change as measured by a thermocouple does not exceed 2 °C over a period of 10 min, has been reached on all three thermocouples at this time (30 min), the test shall be stopped. However, if final temperature equilibrium has not been reached on one or more of the thermocouples at 30 min, continue the test, checking for final temperature equilibrium at 5 min intervals thereafter. Stop the test once equilibrium is established on all thermocouples and note the duration of the test. Then remove the specimen from the furnace. The end of the test is at the end of the last 5 min interval.

NOTE — In accepting the equilibrium criteria, the specimen centre thermocouple reading should be below that of the furnace thermocouple reading.

8.1.9 After cooling to ambient temperature in a desiccator, weigh the specimen. Recover any char, ash or other debris which breaks off the specimen and falls down the tube either during or following the test and include this as a part of the unconsumed specimen.

8.1.10 Test all five specimens as given in 8.1.3 to 8.1.8.

8.2 Observations during test

8.2.1 Record the mass before and after test for each specimen tested according to 8.1.8, and note any observations relating to the behaviour of the specimen during test.

8.2.2 Note the occurrence of any sustained flaming and record the duration of such flaming. Sustained flaming shall be taken as the continuous presence of flames caused by the specimen lasting 5 s or longer.

8.2.3 Record the following temperatures, in degrees Celsius, as measured by the appropriate thermocouples, taking the final temperature as being that at the end of the test period (see 8.1.8).

a) the initial furnace thermocouple temperature, T_f (initial);

b) the maximum furnace thermocouple temperature, T_f (max.);

c) the final furnace thermocouple temperature, T_f (final);

d) the maximum specimen centre thermocouple temperature, T_c (max.);

e) the final specimen centre thermocouple temperature, T_c (final);

f) the maximum specimen surface thermocouple temperature, T_s (max.);

g) the final specimen surface thermocouple temperature, T_s (final);

9 Expression of results

9.1 Temperature rises

9.1.1 Calculate the temperature rises, in degrees Celsius, recorded by both the furnace and the specimen thermocouples for each specimen as follows:

a) furnace thermocouple temperature rise $\Delta T_f = T_f(\text{max.}) - T_f\ (\text{final})$;

b) specimen centre thermocouple temperature rise $\Delta T_c = T_c\ (\text{max.}) - T_c\ (\text{final})$;

c) specimen surface thermocouple temperature rise $\Delta T_s = T_s(\text{max.}) - T_s\ (\text{final})$;

where T (max.) is the peak temperature and T (final) is the temperature at the end of the test.

9.1.2 Calculate and record the arithmetic mean for the five specimens for the furnace and specimen centre and surface temperature rises.

9.2 Flaming

9.2.1 Note for each specimen the sum of the recorded durations of sustained flaming as specified in 8.2.2.

9.2.2 Calculate and record the arithmetic mean of the sustained flaming of the five specimens as the "mean duration of sustained flaming". This is arrived at by taking the sum of all the recorded durations of flaming and dividing by five.

9.3 Mass loss

Calculate and record the following mass loss:

a) the mass loss of each individual specimen in each test, expressed as a percentage of the initial mass of the specimen;

b) the arithmetic mean of the mass loss of the five specimens in each series of tests, expressed as a percentage.

10 Test report

The test report shall be as comprehensive as possible and shall quote the individual results as required by 8.2 for each specimen tested together with calculated results as specified by clause 9. Any observations made during the test and comments on any difficulties experienced during testing shall also be given, together with the following:

a) name and address of the testing laboratory;

b) name and address of the sponsor;

c) name and address of the manufacturer/supplier;

d) date of the test;

e) a general description of the material tested, including trade name (or other identification) and its density, together with the form of construction of the specimen;

f) the statement: "The test results relate only to the behaviour of the test specimens of a material under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use".

A suggested summary test report is given in annex C.

Annex A

Criteria for evaluation

In order to be able to assess materials in relation to "combustibility" or "non-combustibility", regulating authorities will need to define appropriate criteria for acceptance. It is obviously desirable that, in general, when materials are assessed by a test in an International Standard, every assessment should be based on the same criteria, unless very special factors exist in a particular case. Unless a uniform assessment is adopted throughout the world, the usefulness of the test in eliminating trade barriers will be seriously weakened. Therefore, following further evaluation and experience of this test, it is intended to make recommendations for the criteria to be used. The recommended criteria will be issued as a separate amendment and will take the following form:

A.1 The average furnace thermocouple temperature rise as calculated in 9.1.2 should not exceed a specified temperature (°C),

A.2 The average specimen centre thermocouple temperature rise as calculated in 9.1.2 should not exceed a specified temperature (see 8.1.7 and clause B.5 in annex B).

A.3 The average specimen surface thermocouple temperature rise as calculated in 9.1.2 should not exceed a specified temperature (°C).

A.4 The mean duration of sustained flaming as calculated in 9.2.2 should not exceed a specified time (s).

A.5 The average mass loss should not exceed 50 % of the average original mass after cooling (see sub-clause B.7.1 in annex B).

It will then be the responsibility of the regulating authority to decide which aspects of the test are appropriate to particular usages.

Annex B

Commentary

B.1 Background to the development of the test

This fire test has been developed for use by those responsible for selection of construction materials which, whilst not completely inert, produce only a limited amount of heat and flame when exposed to temperatures of approximately 750 °C. It is expected that it will be applied mainly in connection with building and shipbuilding work.

B.2 Application of qualified material

Materials which qualify in accordance with the criteria defined in annex A are expected not to burn appreciably even when exposed to severe fire conditions. The assumed application conditions involve use of the materials in slab or other forms up to roughly a few tenths of a metre in thickness.

B.3 Self-heating not covered

The test does not rule out the possibility of self-heating and ignition of improperly cured or other sensitive materials when stored in bulk at elevated temperatures in piles of size several metres. A self-heating test would be required to provide assurance that materials are safe with regard to this type of hazard.

B.4 Ageing of thermocouple

A suitable method of ageing new thermocouples is to employ the thermocouple as a specimen centre thermocouple and carrying out the test procedure detailed in 8.1.1 to 8.1.8 using a specimen of resin bonded glass fibre material.

B.5 Thermally unstable materials

The criteria used for evaluating materials (see annex A) will be used for qualifying materials which may be thermally unstable, i.e. materials that melt or shrink at the test temperatures. In these cases, the information recorded by the specimen thermocouples may not be relevant and regulating authorities may choose not to use the information. In these cases, one or both thermocouples need not be included.

Glass fibre and rock or slag fibre insulating materials with similar densities and calorific values and which should be quantified similarly by this test, have been demonstrated to give different results because of the above phenomena.

B.6 Orientation of furnace tube

It is possible to install the furnace tube upside down. If there is a possibility that this has occurred, it will be necessary to check that the tube orientation complies with figure 2. This can be achieved by measuring the furnace wall temperature at 10 mm intervals up a single axis of the tube using the thermocouple scanning device. The resulting temperature distribution should be of the general shape given by the solid curve in figure 8. If the tube is incorrectly installed, the distribution will appear as shown by the broken curve.

B.7 Limited mass loss

B.7.1 The inclusion of a performance criterion based on a limited mass loss requirement will be to avoid the possibility of qualifying low density materials and/or materials which might be highly flammable. Certain materials of this type are known to release their limited heat content so rapidly that the test results would be very favourable in the absence of a mass loss result. Materials which show a high mass loss only should not in consequence automatically be considered to be combustible (see clause A.5 in annex A).

B.7.2 It was also recognized that, as with many other tests, certain anomalies were possible. For instance, an ice cube would melt, drip and evaporate. In a similar manner, metals which melt at a temperature below 750 °C would also show excessive mass loss.

It was the majority opinion of those responsible for developing the test that these and other similar anomalies could readily be recognized as such by the testing laboratory performing the test.

B.8 Conditioning

The conditioning requirements of 4.3 assume that the test specimens are already at a nominal equilibrium moisture content prior to being subjected to the prescribed procedure. Dense materials with very high moisture contents may not be adequately dried by the prescribed procedure.

Annex C

Summary test report

Name of laboratory: .... Laboratory reference No: ....

Address: .... Date of test: ....

Tel. No: ....

(Telex)

REPORT OF TEST TO ISO 1182 — NON-COMBUSTIBILITY TEST

Sponsor: ....

Address: ....

Manufacturer/Supplier and address: ....

Description of product: .... Trade name or reference: ....

Construction of test specimen: ....

Observations

Test results

Furnace thermocouple temperature rise, $\triangle T_f$: .... °C

Specimen centre thermocouple temperature rise, $\triangle T_c$: .... °C

Specimen surface thermocouple temperature rise, $\triangle T_s$: .... °C

Duration of sustained flaming: .... s

Mass loss: .... %

The test results relate only to the behaviour of the test specimens of a material under particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use.

NOTE — Complete test details can be obtained from the full test report available from the sponsor.

Dimensions in millimetres

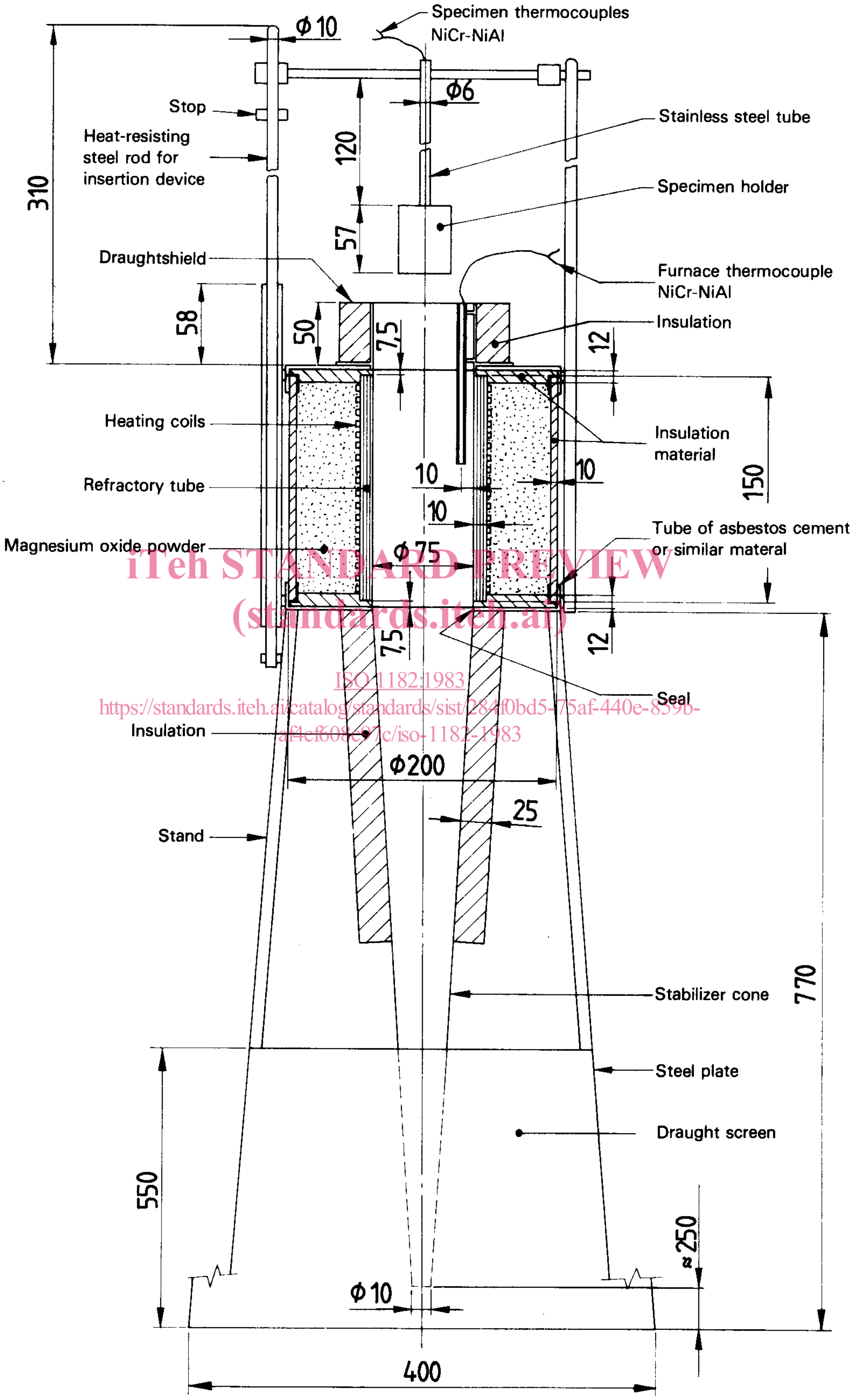

Figure 1 — General arrangement of test apparatus