Australian Government
National Measurement Institute

Bradfield Road, West Lindfield NSW 2070

Cancellation

General Certificate of Approval

No 4/10/0

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that the approval for use for trade granted in respect of the

Measuring Instruments to determine the density of Grain

has been cancelled in respect of new instruments as from 1 September 2012.

NOTE TO VERIFIERS

Instruments submitted for verification after 1 September 2012 should be tested in accordance with the Test Procedure included in General Certificate of Approval No 4/10/0A.

Signed by a person authorised by the Chief Metrologist to exercise his powers under Regulation 60 of the *National Measurement Regulations 1999*.

Australian Government

National Standards Commission

12 Lyonpark Road, North Ryde NSW 2113 Australia

General Certificate of Approval

No 4/10/0

Issued under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the

Measuring Instruments to Determine the Density of Grain

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

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CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 October 2008, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 4/10/0.

It is the responsibility of the manufacturer to ensure that all instruments purporting to comply with this approval are constructed in accordance with this General Certificate of Approval and its Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

DESCRIPTIVE ADVICE

Pattern: approved 28 February 2003
re-approved 25 September 2003

- A measuring instrument to determine the density of grain.

Technical Schedule No 4/10/0 describes the pattern.

FILING ADVICE

General Certificate of Approval No 4/10/0 and its Technical Schedule both dated 5 March 2003 are superseded by this Certificate and Technical Schedule, and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 4/10/0 dated 1 October 2003
Technical Schedule No 4/10/0 dated 1 October 2003 (incl. Test Procedure)

Signed by a person authorised under Regulation 60 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.

TECHNICAL SCHEDULE No 4/10/0

Pattern: Measuring Instruments to Determine the Density of Grain

1. Description of Pattern

A measuring instrument to determine the density of a sample of grain.

1.1 Design

The density measuring instrument consists of a measure to provide volume information and a weighing instrument to provide mass information for density determination calculations. The measure (which may also be known as a 'chondrometer') consists of a filling hopper, a measuring container and a levelling blade (straightedge).

Every measure shall stand firmly on its base.

The capacity is the volume (either 0.5 or 1.0 litres) that is marked on the measure, which is the volume of the measuring container formed by the internal surfaces of the container and the lower surface of a straightedge.

The measure shall be traceable to a reference chondrometer designed in accordance with ISO 7971-2.

Mass information for density determination calculations shall be provided using a calibrated weighing instrument with a scale interval of 0.1g or better.

(a) Filling Hopper

The filling hopper is made of suitably rigid material and of a shape that allows the grain to fall into the measuring container to produce a repeatable packing density.

(b) Measuring Container

The volume of the measuring container is formed by the internal surfaces of the container and the lower surface of a straight edge. The wall of the measuring container is made of a suitably rigid material in the shape of a straight-sided cylinder, open at the top and closed at the base. The volume of the measuring container shall be either 0.5 or 1.0 litres.

(c) Straightedge (levelling blade)

The straight edge is made of a suitable material which allows the volume of grain to be defined at a constant amount.

(d) Weighing Instrument

Any calibrated weighing instrument with a scale interval of 0.1g or better may be used to provide mass information for density determination calculations.

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1.2 Descriptive Markings

Instruments carry the following markings:

Manufacturer's mark, or name written in full	.....
Pattern approval mark for the instrument	NSC No 4/10/0
Maximum capacity	*Max* L
Serial number of the instrument	.....

1.3 Verification/Certification Provision

Provision is made for a verification/certification mark to be applied.

TEST PROCEDURE

Measures shall be tested when standing on a level surface.

The volume of each measure shall be tested to be correct at 20°C.

The weighing instrument shall be calibrated using certified masses.

Grain density is normally expressed in kg/hL; care needs to be exercised during volume to density calculations to take account of the volume (0.5 or 1.0 L) of the measure.

Volume to Density Conversion Factors

g/0.5 L = 0.2 kg/hL; and

g/1.0 L = 0.1 kg/hL

Maximum Permissible Error at Verification/Certification

Verification/certification of the instrument shall be carried out by comparison with a reference chondrometer (instruments manufactured by either Franklin or Schopper are acceptable).

The procedure shall be carried out using a grain free from impurities and under the same ambient conditions of temperature and humidity where normal measurements are made.

Carry out three measurements on both the instrument and the reference chondrometer using the same sample of grain. For each measurement, determine the density of the sample of grain. The mean value of the density should then be determined for each instrument.

The discrepancy of the two means shall be within ± 0.5 kg/hL.

4/10/0
1 October 2003

Australian Government

National Standards Commission

12 Lyonpark Road, North Ryde NSW 2113 Australia

Notification of Change

General Certificate of Approval No 4/10/0

Change No 1

The following changes are made to the approval documentation for

Measuring Instrument to Determine the Density of Grain.

All the documentation for this approval, comprising General Certificate of Approval No 4/10/0 and its Technical Schedule both dated 5 March 2003, are superseded by the documentation attached herein, and may be destroyed.

Signed by a person authorised under Regulation 60 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.

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CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 October 2008, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 4/10/0.

It is the responsibility of the manufacturer to ensure that all instruments purporting to comply with this approval are constructed in accordance with this General Certificate of Approval and its Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

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