



NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/10B/30A

This is to certify that an approval has been granted by the Commission that the pattern of the

Avery Model 5451/C3H/8650 Weighing Instrument

submitted by Avery Australia Ltd
3-5 Birmingham Avenue
Villawood, New South Wales, 2163

is suitable for use for trade.

In this Certificate the pattern and variants originally approved in Certificate No 6/10B/30 have been reviewed. Certificate No 6/10B/30 will expire on 30/1/84 with the effect that no new instruments purporting to comply with that Certificate will be accepted for verification after that date.

The approval is subject to review on or after 31/1/89.

Instruments purporting to comply with this approval shall be marked NSC No 6/10B/30A.

The approval may be withdrawn if instruments are used other than as described in the drawings and specifications lodged with the Commission.

Conditions of Approval

1. The number of scale intervals applicable to the whole instrument shall be no greater than the number of verification scale intervals approved for the basework, or the load cell(s) or the headwork, whichever is the smallest.
2. The load cells to be used shall be subject to regular certification by the Commission.
3. The weighbridge installed as approved herein or with substitute load cells and/or indicator shall comply with General Certificate No 6/10B/0 for full load cell weighbridges.

Signed

Executive Director

Descriptive Advice

Pattern: approved 23/12/83

- . An Avery model 5451/C3H/8650 self-indicating weighbridge in various capacities and sizes, using HBM model C3H2 load cells of various capacities and an Avery model 8650 digital indicator, and approved for use with up to 3000 scale intervals.

Technical Schedule No 6/10B/30A dated 30/1/84 describes the pattern.

30/1/84

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Filing Advice

The documentation for this approval comprises:

Certificate of Approval No 6/10B/30A dated 30/1/84
Technical Schedule No 6/10B/30A dated 30/1/84 (including Table 1)
Test Procedure No 6/10B/30A dated 30/1/84
Figures 1 and 2 dated 30/1/84.



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/10B/30A

Pattern: Avery Model 5451/C3H/8650 Weighing Instrument

Submittor: Avery Australia Ltd
3-5 Birmingham Avenue
Villawood, New South Wales, 2163.

1. Description of Pattern

A self-indicating weighbridge in various capacities and sizes. The weighbridge consists of a basework using HBM model C3H2 load cells of various capacities (Figures 1 and 2 and Table 1) and an Avery model 8650 digital indicator. The dead load of the deck is 1.1 t/m for concrete and 0.75 t/m for steel construction. There are other models of weighbridge, namely 5452, -3, -4, -5 and -6/C3H/8650 depending on installation requirements.

1.1 Load Cells

1.1.1 Specifications (refer Table 1)

1.1.2 Load Cell Marking

The following is the minimum data required to be marked on the load cell:

Manufacturer's name or mark
Model number
Serial number
Maximum capacity
Approval number

1.2 Indicator

Avery model 8650 digital indicator displaying up to 3000 scale intervals with or without an output socket for the connection of peripheral or auxiliary equipment, and with functions as described in the documentation of Approval No S103. The indicator is also approved for use without any tare facility.

1.3 Markings

The instrument is marked with the following data, in a clearly visible location:

Manufacturer's name or mark
Model number of instrument
Serial number of instrument
NSC approval number
Accuracy class
Maximum capacity in the form:
Minimum capacity in the form:
Verification scale interval in the form:
Maximum subtractive tare in the form:
Load cell NSC approval number)
Headwork NSC approval number) where appropriate
Basework NSC approval number)

NSC No 6/10B/30A

III

Max

Min

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T = -

Load cell serial numbers may be marked on a nameplate attached to the indicator or marked on metal tags attached to the indicator via a lead and wire seal.

TABLE 1

Type: HBM C3H2 (Separately approved under NSC No S136)

Maximum capacity	10 t	20 t	30 t	50 t	100 t
Maximum number of verification scale intervals	3000	3000	3000	3000	1000
Minimum dead load	0.5 t	1 t	1.5 t	1.6 t	1.6 t
Minimum value of verification scale interval	1 kg	2 kg	5 kg	5 kg	20 kg
Input impedance (nominal)	350 Ω	350 Ω	350 Ω	350 Ω	350 Ω
Supply voltage (AC or DC)	0.5 to 18 V	0.5 to 18 V	0.5 to 18 V	0.5 to 18 V	0.5 to 18 V
Output rating (nominal)	2 mV/V	2 mV/V	2 mV/V	2 mV/V	2 mV/V
Cable length (± 0.1 m)	3 m	3 m	3 m	3 m	3 m
Number of leads	4*	4*	4*	4*	4*

*There is also a shield cable.

Approved Specifications

TEST PROCEDURE 6/10B/30A

All load applications to the instrument should be in accordance with the Commission's recommended testing procedure for the elimination of rounding error as set out in Document 104.

The maximum permissible errors are:

- ± 0.5e for loads between 0 and 500e;
- ± 1.0e for loads between 501e and 2000e; and
- ± 1.5e for loads above 2000e.

1. Zero Range

Check that the range of the zero adjustment is not more than 4% of the maximum capacity (± 2% approximately). With zero balance indicated, apply a load of, say, 2.5% of maximum capacity to the instrument, and attempt to set zero; this should not be possible.

2. Zero Balance

Check by means of the Commission's digital zero test as set out in Document 104 that, when the zero light is illuminated, zero is set within 0.25 scale intervals.

3. Range of Indication

The maximum mass indicated should not exceed by more than 10 scale intervals the maximum capacity (Max); above this indicated mass the indicator should be blank or show non-numerical characters.

4. Test Loads

Test loads are to be applied to the instrument in not less than 5 approximately equal steps increasing to maximum capacity, followed by decreasing loads of not less than 5 approximately equal steps.

The instrument should display these loads within the applicable tolerance as listed above.

5. Tare

Attempt to tare a mass above the maximum mass indicated as determined in Test 3 above - this should not be possible.

6. Stability Test

Using the heaviest and most concentrated rolling load intended to be weighed (heaviest axle loading) conduct a stability test on one end of the weighbridge platform beyond the end cells; lifting of the opposite end should not be apparent.

Repeat this test at the other end of the weighbridge.



F.G.

6/10B/30A
29/4/85

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/10B/30A

CHANGE No 1

The following change is made to the approval documentation of the

Avery Model 5451/C3H/8650 Weighing Instrument

submitted by Avery Australia Ltd
3-5 Birmingham Avenue
Villawood NSW 2163.

In Test Procedure No 6/10B/30A dated 30/1/84,
paragraph 6. Stability Test should be deleted.

Signed

Executive Director

R.S.

6/10B/30A
20/1/86



NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/10B/30A

CHANGE No 2

The following change is made to the approval documentation for the
Avery Model 5451/C3H/8650 Weighing Instrument

submitted by Avery Australia Ltd
3-5 Birmingham Avenue
Villawood NSW 2163.

In Technical Schedule No 6/10B/30A dated 30/1/84, the maximum number of verification scale intervals given in Table 1 for the 100 t capacity load cell, should be amended to read "1500".

Signed

Acting Executive Director



CANCELLED 0/3
31-12-90

NATIONAL STANDARDS COMMISSION

G.H.

6/10B/30A
29/6/87

NOTIFICATION OF CHANGE

CERTIFICATE OF APPROVAL No 6/10B/30A

CHANGE No 3

The following change is made to the approval documentation for the
Avery Model 5451/C3H/8650 Weighing Instrument

submitted by Avery Australia Ltd
3-5 Birmingham Avenue
Villawood NSW 2163.

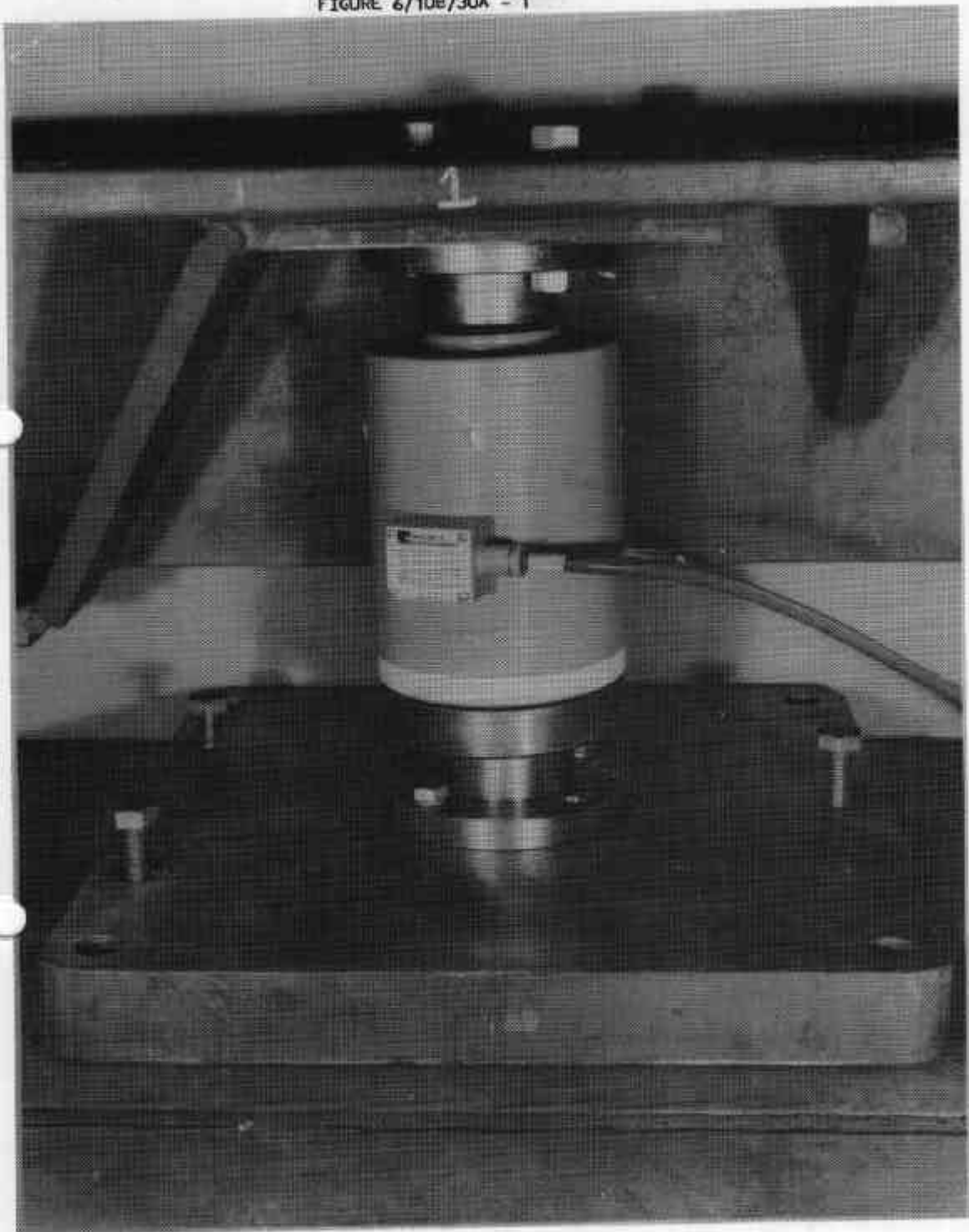
1. In Technical Schedule No 6/10B/44A dated 30/1/84:

Delete the 3rd sentence from clause 1. Description of Pattern to remove any reference to the deadload of the deck.

Signed

Executive Director

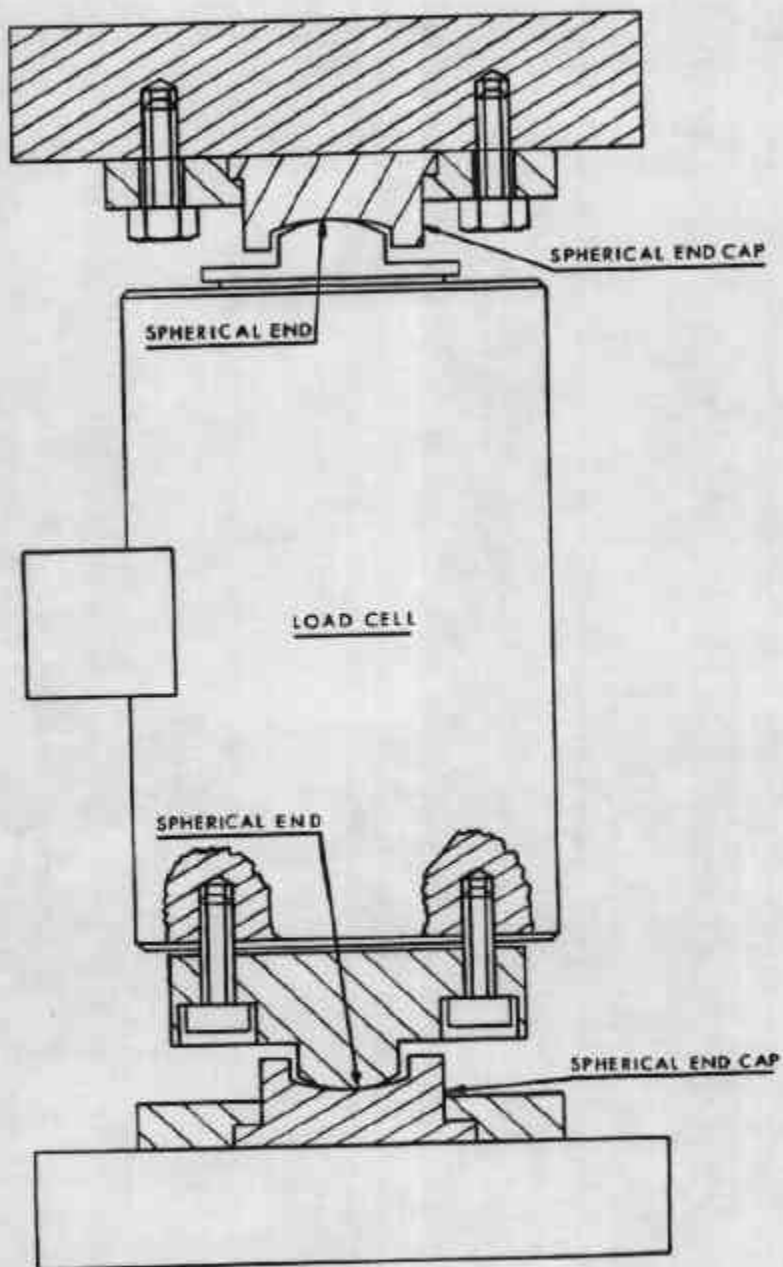
FIGURE 6/108/30A - 1



Pendulum-support Mechanism - C3H2 Load Cell

30/1/84

FIGURE 6/10B/30A - 2



Pendulum-support Mechanism - Schematic Diagram

30/1/84