



**Australian Government**  
**Department of Industry, Science,  
Energy and Resources**

## **National Measurement Institute**

36 Bradfield Road, West Lindfield NSW 2070

### **Certificate of Approval**

#### **NMI 6/9C/276**

Issued by the Chief Metrologist 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 instruments herein described.

Nuweigh Model IH-1949 Weighing Instrument

submitted by Newcastle Weighing Services Pty Ltd  
5C Murray Dwyer Circuit  
Mayfield West NSW 2304

**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.

This approval has been granted with reference to document NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

#### DOCUMENT HISTORY

<b>Rev</b>	<b>Reason/Details</b>	<b>Date</b>
0	Pattern & variants 1 & 2 approved – interim certificate issued	27/10/03
1	Pattern & variants 1 to 3 approved – certificate issued	26/11/03
2	Pattern & variants 1 to 3 reviewed– notification of change issued	20/01/09
3	Variant 4 approved – certificate issued	23/04/10
4	Pattern & variants 1 to 4 <b>reviewed</b> , amended (test procedure) & updated – certificate issued	4/04/17
5	Variant 5 – certificate issued	21/10/20
6	Pattern amended (submitor address) – certificate issued	29/10/20

## CONDITIONS OF APPROVAL

### General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI (or NSC) 6/9C/276' and only by persons authorised by the submitter.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates No S1/0/A or No S1/0B.

The pattern as approved herein or with substitute NMI approved load cells and/or indicators and in other capacities, or with different platform sizes, shall comply with General Certificate No 6B/0.

Note: New instruments manufactured under this approval shall only use load cells and/or indicators with current NMI supplementary certificates.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to the instrument shall be within the limits specified herein and in any approval documentation for the components where they are approved separately.

### Special Condition of Approval (Variant 4)

The approval is limited to one (1) instrument located at Tomago Aluminium Company, Tomago, NSW.

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



**Darryl Hines**  
Manager  
Policy and Regulatory Services

TECHNICAL SCHEDULE No 6/9C/276

**1. Description of Pattern**

**approved on 27/10/03  
amended on 29/10/20**

A Nuweigh model IH-1949 class  $\text{III}$  self-indicating non-automatic weighing instrument of 3000 kg maximum capacity and approved for use with up to 3000 verification scale intervals.

**1.1 Basework**

The model IH-1949 basework (Figures 1 and 2) has the load receptor directly supported by load cells fitted with self-aligning supporting feet.

If approach ramps are provided care shall be taken to ensure that these do not interfere with the platform.

**1.2 Load Cells**

Four Nuweigh model JAC-1000 load cells of 1000 kg capacity are used mounted as shown in Figure 1. The load cells are described in the documentation of approval No NMI S416.

**1.3 Indicator**

A Nuweigh model JAC 101 digital indicator is used. The indicator is described in the documentation of approval No NMI S419.

**1.4 Descriptive Markings**

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Newcastle Weighing Services
Indication of accuracy class	$\text{III}$
Maximum capacity	<i>Max</i> ..... kg *
Minimum capacity	<i>Min</i> ..... kg *
Verification scale interval	<i>e</i> = ..... kg *
Tare capacity (if less than <i>Max</i> )	<i>T</i> = - ..... kg
Serial number of the instrument	.....
Pattern approval number for the instrument	NMI (or NSC) No 6/9C/276
Pattern approval number for the load cells	NMI S ...
Pattern approval number for the indicator	NMI S ...

\* These markings shall also be shown near the display of the result if they are not already located there.

**1.5 Verification Provision**

Provision is made for the application of a verification mark.

**1.6 Sealing Provision**

Provision is made for the calibration adjustments to be sealed as described in the approval documentation for the indicator.

## 1.7 Levelling

Where instruments are liable to be tilted (i.e. they are not installed in a permanently fixed location) they are provided with adjustable feet and a level indicator.

### 2. Description of Variant 1 approved on 27/10/03

The IH-1949 series in capacities as listed below:

- from 100 kg up to 1499 kg;
- from 1500 kg up to 14 999 kg; and
- from 15 000 kg up to 149 999 kg.

### 3. Description of Variant 2 approved on 27/10/03

The IH-1949 series with the load receptor in the form of a hopper or bag suspended from the base frame (Figure 3) in capacities from 100 kg up to 149 999 kg.

Suitable provision must be made for the application of suitable verified masses to the instrument as required for verification purposes. It may be necessary for such masses to be incorporated within the design of the instrument.

### 4. Description of Variant 3 approved on 26/11/03

An alternative construction with pairs of load cells mounted in 'channels' (Figure 4) which are mounted under each end of a load receptor.

Notes:

1. As this arrangement does not have provision for levelling, instruments shall be installed in a fixed location.
2. The channels shall not be verified individually.
3. The channels shall not be verified without a load receptor, i.e. instruments shall only be verified as complete instruments.

### 5. Description of Variant 4 approved on 23/04/10

The Nuweigh model IH-1949 weighing instrument in a special arrangement intended for the weighing of billets of metal as part of an industrial process. Refer to the Special Condition of Approval.

The instrument is a Class  $\text{III}$  weighing instrument with a maximum capacity of 6000 kg with a verification scale interval of 2 kg, and uses four Mettler Toledo model 745 load cells of 4500 kg maximum capacity (approval NSC S361) to support the weighing platform.

The arrangement uses two trolleys ('transfer cars') on rails to transport the billets onto the weighing instrument, and uses a Mettler Toledo model IND560 (approval NMI S438) configured to have an extended initial zero setting range to permit zeroing of the weight of these trolleys as part of the operating sequence of the weighing process.

The weighing process may use either a single trolley (intended for weighing short billets) or two trolleys (intended for weighing long billets), as follows:

*Operation with one trolley*

- a) All trolleys are removed from the weighing platform.
- b) The instrument is powered off and then on. The initial zero setting facility sets zero of the instrument with the empty platform.
- c) The empty trolley is positioned onto the weighing platform, and the instrument tared.
- d) The trolley is removed, loaded with billets and returned to the weighing platform.
- e) A reading of the weight value is obtained.
- f) The bundle of billets is strapped, labelled, and removed from the trolley.
- g) The sequence from (c) is repeated as necessary.

*Operation with two trolleys*

- a) Both empty trolleys are positioned onto the weighing platform.
- b) The instrument is powered off and then on. The initial zero setting facility sets zero of the instrument with the two empty trolleys on the platform.
- c) The plant control system checks that the instrument indication is 0 kg.
- d) Both empty trolleys are removed from the platform, loaded with billets and returned to the weighing platform.
- e) A reading of the weight value is obtained.
- f) The bundle of billets is strapped, labelled, and removed from the trolley.
- g) The sequence from (c) is repeated as necessary.

**6. Description of Variant 5** **approved on 21/10/20**

The IH-1949 series with the load receptor comprises a container tilting mechanism mounted steel frame (Figure 5) and of up to 30 000 kg maximum capacity and approved for use with up to 3000 verification scale intervals.

The system is intended for the determination of the net weight of the contents of a container. A transaction will generally be the result of a weighing of the full container, with the result of the weighing of the empty container subtracted from this.

The instrument is only intended for use whilst the container is stationary and in horizontal position.

TEST PROCEDURE No 6/9C/276

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

**Maximum Permissible Errors**

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

#### **Test Procedure – Variant 4**

In addition to testing of the instrument having zero set with an empty platform (*Operation with one trolley mode*), testing shall be carried out with the instrument having zero set with two trolleys on the platform (*Operation with two trolleys mode*).

FIGURE 6/9C/276 – 1



Nuweigh Model IH-1949 Weighing Instrument  
and Load Cell Mounting (Pattern)

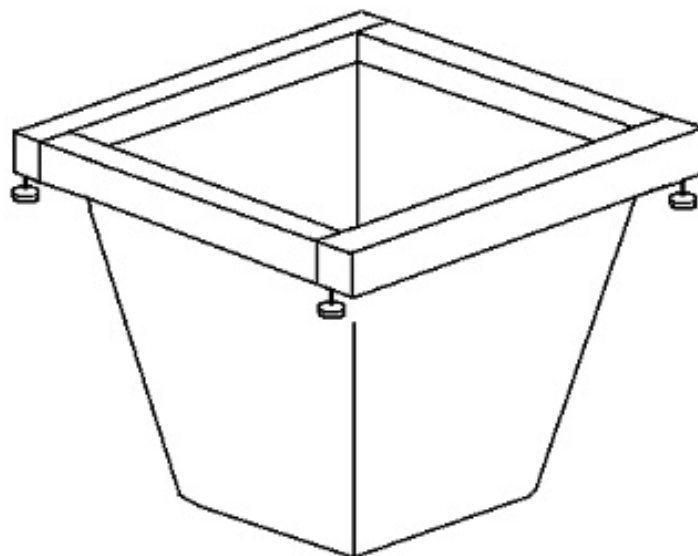
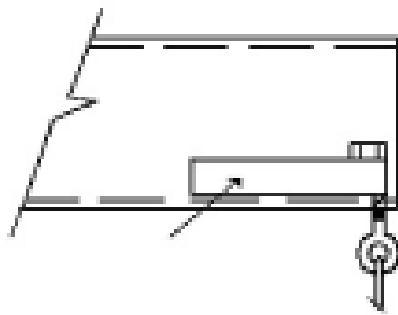
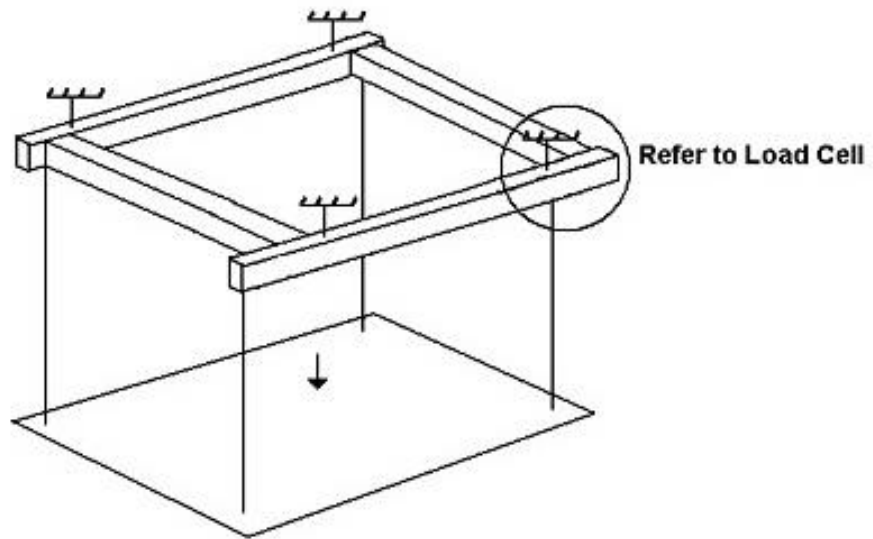
FIGURE 6/9C/276 – 2



Nuweigh Model IH-1949 Weighing Instrument (Pattern)



FIGURE 6/9C/276 – 3



Typical Variant 2 Instruments

FIGURE 6/9C/276 – 4



With Pairs of Load Cells Mounted in Channels (Variant 3)

FIGURE 6/9C/276 – 5



Nuweigh Model IH-1949 Weighing Instrument (Variant 5)

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