Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/10B/78

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.

Griffith Elder Model GEM 80/26 Weighing Instrument

submitted by Gendio Pty Ltd
19 Henty Highway
Beulah VIC 3395

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.

This approval becomes subject to review on 1/06/15, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	17/05/05
1	Pattern & variant 1 approved – certificate issued	21/06/05
2	Pattern & variant 1 reviewed – notification of change issued	14/01/11
3	Pattern & variant 1 updated – variants 2 & 3 approved – certificate issued	21/02/14

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/10B/78' and only by persons authorised by the submittor.

It is the submittor'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.

Special Conditions of Approval

The pattern and variants as approved herein may be used with substitute approved indicators, provided that the instrument shall comply with General Certificate of Approval No 6B/0.

The use of substitute approved load cells and/or instruments in other capacities or with different platform sizes may also be acceptable (provided that the instrument shall comply with General Certificate of Approval No 6B/0). However in such cases the submittor shall advise NMI in writing of the proposed location and specifications of each instrument prior to it being verified.

Instruments shall not be verified until the person intending to carry out the verification has been advised in writing by NMI of the suitability of the instrument. NMI may need to consider various issues (including aspects related to the levelling of the platform(s)) in assessing suitability of the instrument.

Note: New instruments manufactured under this approval shall only use load cells and/or indicators with current Supplementary Certificates of Approval.

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

Dr A Rawlinson

TECHNICAL SCHEDULE No 6/10B/78

1. Description of Pattern approved on 17/05/05

A Griffith Elder model GEM 80/26 class III self-indicating non-automatic weighing instrument (Figure 1) comprising two platforms each of 40 000 kg maximum capacity and approved for use with up to 2000 verification scale intervals. May also be known as Gendio instruments of the same model.

1.1 Basework

The model GEM 80/26 instrument consists of two platforms, each on a base-frame, with the two base-frames specially designed to be bolted together to form a two platform weighbridge.

Each platform is fully supported by 6 load cells. Dimensions of each platform are 13 m × 3.2 m. Restraints are provided at both ends of the weighbridge to restrain the platform horizontally.

1.2 Load Cells

Six Precision Transducers Ltd model HPC-30 load cells of 30 000 kg capacity are used in each platform.

The load cells are also described in the documentation of NSC approval S412.

1.3 Indicator

A Bilanciai model D800 digital indicator is used.

The indicator is also described in the documentation of NSC approval S429.

The indicator incorporates a feature for the connection of two baseworks and each basework is connected such that the individual weight on each platform, or the combined weight, may be displayed.

1.4 Special Features – Transportable Weighbridge

The instrument is designed as a transportable (two platform) weighbridge. The system comprises two baseworks, each consisting of a base-frame supporting the load cells

which in turn support a platform. The two baseworks are designed to be bolted together to form a two platform weighbridge.

The two platforms may be unbolted and separated for transport (e.g. on a semitrailer).

The system may be powered by rechargeable battery (e.g. recharged by a solar panel) or other suitable means according to the approval of the indicator.

Note: State and Territory Trade Measurement Legislation may require particular arrangements regarding weighbridges (such as approaches and location of the weighbridge platform and indicator for example) to be met. This approval does not certify that such requirements have (or can be) met.

In addition State and Territory Trade Measurement Authorities should be consulted regarding any special arrangements which may be necessary in regard to operation of a mobile weighbridge of this type.

Issues such as the following may need to be considered (the Trade Measurement Authority may for example require that the operator check regularly that the weighbridge remains in a level condition).

(i) Levelling Arrangements

The weighbridge frame(s) (on which the load cells are located and which in turn support the weighbridge platforms) are intended to be bolted together and located on a suitable level area of ground.

Provision is made for levelling of the system by use of a roman level type arrangement with liquid level site gauges located adjacent to each load cell. Adjustable mounting arrangements are not provided, so that it may be may be necessary to undertake separate levelling (grading of the ground or utilisation of suitable packing material, for example) to achieve a suitable level area.

In addition the instrument incorporates a photoelectric through beam system for detecting excessive twisting or misalignment of the weighbridge frame(s). Note that this photoelectric through beam system needs to be adjusted following relocation of the weighbridge – it is primarily intended to detect changes which might occur following installation at a particular location.

(ii) Approaches and Ramps

Various means (e.g. surrounding earthworks or provision of portable steel ramps) may need to be provided to enable access to the weighbridge platform(s). In addition other provisions may be required to be made to provide suitable approaches to the weighing platform.

(iii) Stability of Ground

It is important that the weighbridge be located on stable ground with adequate load bearing capability. This is to prevent ground penetration, and to provide sufficient stability (avoiding excessive ground compaction or subsidence).

Note: The stability of the ground may also have implications for the safe operation of the instrument.

(iv) Gravity Variation

Where the instrument is verified in one location and subsequently moved to another location, the effects of differences in the acceleration of gravity at each location may need to be considered.

1.5 Sealing Provision

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

1.6 Verification Provision

Provision is made for the application of a verification mark.

1.7 Descriptive Markings and Notices

Instruments are marked with the following data, together in one location, in the form shown at right:

Manufacturer's mark, or name written in full	……..
Indication of accuracy class	(III)
Pattern approval number for the instrument	NMI 6/10B/78
Pattern approval number for the indicator	S.....
Pattern approval number for the load cells	S.....
Serial number of the instrument	……..

		Scale A	Scale B	Combined	
Maximum capacity	*Max*	40 000 kg	40 000 kg	..... kg	#
Minimum capacity	*Min*	400 kg	400 kg	..... kg	#
Verification scale interval	*e* =	20 kg	20 kg	..... kg	#

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

2. Description of Variant 1 **approved on 21/06/05**

A Griffith Elder model GEM 40/13 having a single platform of 40 000 kg maximum capacity with up to 2000 verification scale intervals and of dimensions of 13 m × 3.2 m.

The instrument has similar special features (transportable weighbridge) described for the pattern.

3. Description of Variant 2 **approved on 21/02/14**

A Griffith Elder model GEM 100/26 having two platforms each of up to 50 000 kg maximum capacity and with up to 2500 verification scale intervals and of dimensions of 13 m x 3.2 m.

The instrument has similar special features (transportable weighbridge) described for the pattern.

4. Description of Variant 3 **approved on 21/02/14**

A Griffith Elder model GEM 50/13 having a single platform of up to 50 000 kg maximum capacity with up to 2500 verification scale intervals and of dimensions of 13 m × 3.2 m.

The instrument has similar special features (transportable weighbridge) described for the pattern.

TEST PROCEDURE No 6/10B/78

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*.

Notes: Each platform should be tested separately (although with the two baseframes bolted together as in normal operation). An additional check of suitable operation of the combination of the two platforms should also be carried out.

The design of this instrument is intended to facilitate the transport and use of the weighbridge at various locations without re-verification at each new location. The acceptability of this method of operation is at the discretion of the applicable State/Territory authorities, particularly giving regard to the items mentioned in clause **1.4 Special Features – Transportable Weighbridge** of the Technical Schedule.

FIGURE 6/10B/78 – 1

Griffith Elder Model GEM 80/26 Weighing Instrument

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