



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval NMI 1/1/1

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.

Australia Post Model PM272 Length Measure

submitted by Australia Post
 Level 14 – Business Consumables
 111 Bourke Street
 Melbourne VIC 3032

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 becomes subject to review on **1/10/20**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	17/09/93
1	Pattern approved – certificate issued	29/11/93
2	Pattern re-approved, variant 1 approved – interim certificate issued	23/04/99
3	Pattern re-approved & amended ('deemed weight'), variant 1 approved – certificate issued	22/06/99
4	Pattern & variant 1 amended (address) & reviewed – notification of change issued	2/06/04

Document History (cont...)

Rev	Reason/Details	Date
5	Pattern & variant 1 amended (address) & reviewed – notification of change issued	17/07/09
6	Pattern & variant 1 updated (incl. address) & reviewed, variants 2 & 3 approved – certificate issued	21/09/15
7	Variant 4 approved – certificate issued	11/05/18

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI (or NSC) 1/1/1' 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.

Special Condition of Approval

The instrument is only approved for use for the determination of 'deemed weight' for charging for postage or freight as described in the Procedures for Use of the Pattern which are attached to Technical Schedule No 1/1/1.

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
Pattern Approval, Policy and
Licensing Section

TECHNICAL SCHEDULE No 1/1/1

1. Description of Pattern

**approved on 17/09/93
re-approved on 23/04/99**

An Australia Post model PM272 (also known as a Stanley model 'galaxie II 30-942') length measure being a retractable steel tape measure of 2 m in length which is approved for use in measuring the dimensions of a parcel from which a 'deemed weight' is determined.

NOTE: Instruments (pattern and variants) shall only be used as specified in the Special Condition of Approval given in the Certificate, and in the Procedures for Use which are attached herein (Attachment 1).

1.1 Construction

The pattern is a retractable steel tape measure of 2 m in length in a plastic case (Figure 1).

The moveable tip is securely attached.

1.2 Markings

Measures of length are marked with the following data:

Manufacturer's identification	
NSC approval number	NMI (or NSC) No 1/1/1 (*)
Length	2 m
Batch testing mark	(#)

Notes:

- (*) This is marked on the outer case.
- (#) If batch testing is to be used, manufacturers or importers should ensure that they comply with the batch testing requirements (including marking of measures) of this approval. **If batch testing is not used, provision shall be made for a verification mark to be applied on all measures.**

The tape is marked with a graduated scale as shown in Figure 1. The scale is numbered in centimetres.

1.3 Verification

Verification is to be with the moveable tip in both the extended and retracted positions with the appropriate side of the tip as the zero mark.

If batch testing is not used, provision shall be made for a verification mark to be applied on all measures.

2. Description of Variant 1

approved on 23/04/99

A Stanley model 30-487 length measure being a retractable steel tape measure of 3 m in length (Figure 2) which is approved for use in measuring the dimensions of a parcel from which a 'deemed weight' is determined.

2.1 Markings

Markings are as described for the pattern, except that the marking of length is '3 m'.

3. Description of Variant 2 approved on 21/09/15

A Stanley model 30-497 length measure being a retractable steel tape measure of 5 m in length (Figure 3) which is approved for use in measuring the dimensions of a parcel from which a 'deemed weight' is determined.

3.1 Markings

Markings are as described for the pattern, except that the marking of length is '5 m'.

4. Description of Variant 3 approved on 21/09/15

A Stanley model FMHT33856 length measure being a retractable steel tape measure of 2 m in length (Figure 4) which is approved for use in measuring the dimensions of a parcel from which a 'deemed weight' is determined.

4.1 Markings

Markings are as described for the pattern.

5. Description of Variant 4 approved on 11/05/18

A Maika model 8835188 length measure being a retractable steel tape measure of 3 m in length (Figure 5) which is approved for use in measuring the dimensions of a parcel from which a 'deemed weight' is determined.

5.1 Markings

Markings are as described for the pattern, except that the marking of length is '3 m'.

TEST PROCEDURE

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

Verification is to be with the moveable tip in both the extended and retracted positions with the appropriate side of the tip as the zero mark.

Refer to Attachment 2 for procedures for batch testing.

Maximum Permissible Errors at Verification

The maximum permissible errors at verification from zero to any value up to and including 5 m are:

±1.0 mm for lengths up to and including 1 m;

±1.5 mm for lengths over 1 m and up to and including 2 m;

±2.0 mm for lengths over 2 m and up to and including 3 m;

±2.5 mm for lengths over 3 m and up to and including 4 m; and

±3.0 mm for lengths over 4 m.

ATTACHMENT 1 PROCEDURES FOR USE

Procedures for Use

The instrument is to be used to measure parcels as follows:

- For a parcel in the form of a rectangular parallelepiped (#), or in the form of a tube, the length (L), width (W) and height (H).
- For an irregularly-shaped parcel, the length (L_e), width (W_e) and height (H_e) of a rectangular parallelepiped which will enclose the maximum dimensions of the parcel, i.e. including bulges.

The 'deemed weight' in kg is calculated from the measured dimensions, rounded DOWN to the nearest centimetre and converted to metres, and then using the following formulae:

For a parcel in the form of a rectangular parallelepiped,

$$L \times W \times H \times Y$$

For a parcel in the form of a tube,

$$L \times W \times H \times (Y \times 0.78)$$

For an irregularly-shaped parcel,

$$L_e \times W_e \times H_e \times Y$$

where Y is a volume to 'deemed weight' conversion factor determined by Australia Post.

- (#) A **rectangular parallelepiped** is a polyhedron having six faces that are parallel in pairs; each face is a parallelogram and adjacent edges are perpendicular. (A rectangular box.)

ATTACHMENT 2 BATCH TESTING PROCEDURE

1. SCOPE

Verification of material measures of length by statistical sampling is hereafter referred to as batch testing.

Material measures of length are hereafter referred to as measures.

The test procedure for measures is designed to test, by the batch testing method, for accuracy and compliance with the Certificate of Approval and Technical Schedule.

Note: Measures cannot be tested by the batch testing method unless written approval is given by the National Measurement Institute.

Where measures are not batch tested, they shall be individually verified.

2. BATCH TESTING DOCUMENTATION

The person conducting the batch testing should record the following details:

- (a) The date of test.
- (b) The registered name and address of the business.
- (c) The name and address of the submitter of the measures and the premises where the measures are presented for test.
- (d) The manufacturer's identification.
- (e) The total number of measures in each batch presented for testing.
- (f) The number of measures selected for testing.
- (g) The approved mark specified in the written approval given by the National Measurement Institute.

3. VISUAL INSPECTION

Visually examine the measures to ensure that they are in accordance with the Certificate of Approval and Technical Schedule in respect to design and markings.

4. PERFORMANCE TESTING

The batch of measures being submitted will not be verified unless they are accompanied by a histogram detailing the results of the tests made by or on behalf of the manufacturer or submitter concerned. (see Appendix A)

Batch testing is the testing of at least the appropriate test proportion (see Appendix B) of the batch of measures submitted for verification.

If 2% or more of the test proportion is found to be incorrect, the whole of the batch being submitted for verification is rejected.

Measures are tested in conjunction with the relevant test procedures for flexible measures of length specified in the relevant National Instrument Test Procedure.

Lengths from zero to at least four scale marks between zero and maximum length shall be tested. Complete a histogram for each length tested.

5. HISTOGRAM

From the histogram prepared for the batch tested, calculate the mean length and the standard deviation for each length tested.

Compare these results with those shown on the histogram prepared by the manufacturer or importer.

6. DOCUMENTATION

If the results of the tests for the batch are acceptable prepare written approval for the release of the batch from the custody of the manufacturer or importer.

7. RECORDS

Examine such records as are required to be kept and are specified in the written approval given by the National Measurement Institute. Record the results of this examination.

8. INTERVIEW OF MANUFACTURER OR IMPORTER

- (a) If the result of the tests for the batch are acceptable inform the person in authority that the batch of measures, from which the sample measures were selected, can be released for trade use.
- (b) If the result of the tests for the batch are not acceptable inform the person in authority that it is an offence to sell, lease, hire or lend the measures for trade use, and the measures should not be released.

APPENDIX A

SAMPLE HISTOGRAM

(The values in the histogram below are sample values only.)

NOTE: Complete a histogram for each length tested; refer clause 4 in Attachment 2.

Number of measures submitted (batch size): 3000
 Test proportion: 200
 Maximum permissible error range: 1498.5 to 1501.5 mm
 Nominal test length: 1500 mm

VALUE mm	FREQUENCY												TOTAL	
	10	20	30	40	50	60	70	80	90	100	110	120		
1497														0
1498	x													1
1499	xxxxxxxxxxxxxxxxxxxxxxxx													45
1500	xx													101
1501	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx													51
1502	xx													2
1503														0
Total number of sample measures tested:													200	

Number of measures correct: 197 = 98.5 %
 Number of measures incorrect: 3 = 1.5 %
 Percentage of incorrect measures permitted: < 2 %
 Average length of sample: 1500.04
 Standard deviation of sample: 0.5411
 Batch tested acceptable? YES

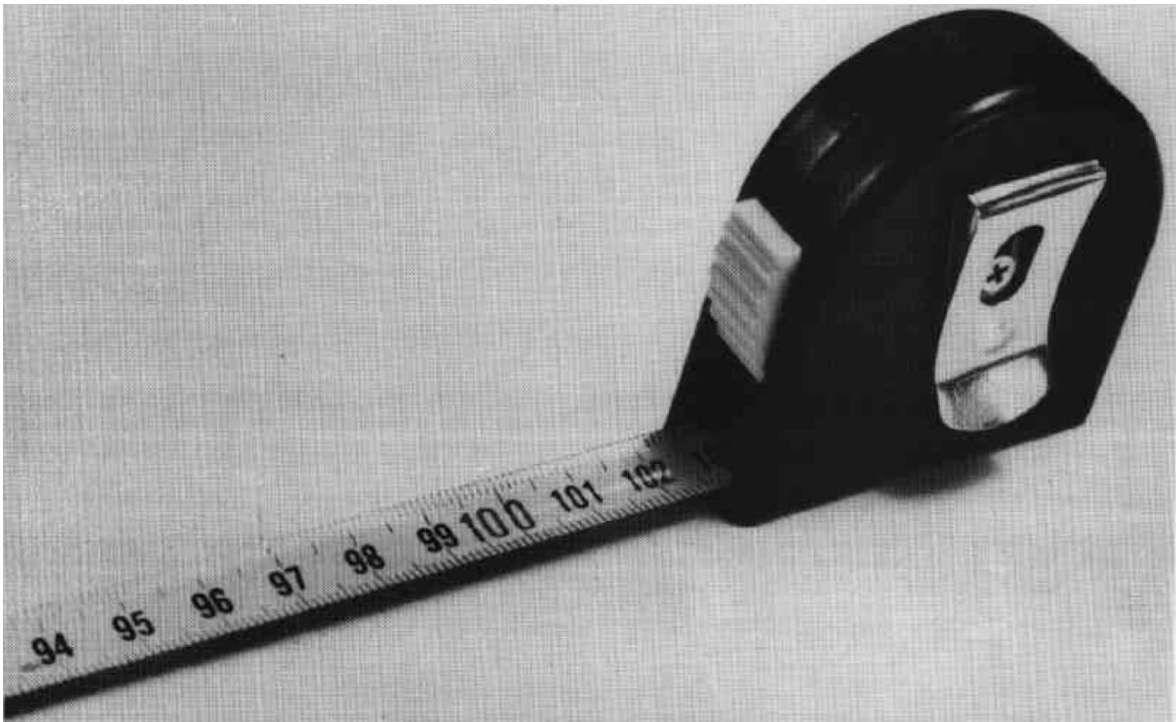
29/11/93 _____
 Date Name/signature

APPENDIX B
TEST PROPORTION

Batch or lot size	Test proportion
201 to 280	50
281 to 500	80
501 to 1 200	125
1 201 to 3 200	200
3 201 to 10 000	315
10 001 to 35 000	500
35 001 to 150 000	800
150 001 to 500 000	1250
500 001 and over	2000

NOTE: Batches of 200 or less should not be tested by the batch testing method.

FIGURE 1/1/1 – 1



Australia Post Model PM272 Length Measure (Pattern)

FIGURE 1/1/1 – 2



Stanley Model 30.487 Tape Measure (Variant 1)

FIGURE 1/1/1 – 3



Stanley Model 30.497 Tape Measure (Variant 2)

FIGURE 1/1/1 – 4



Stanley Model FMHT33856 Tape Measure (Variant 3)

FIGURE 1/1/1 – 5



Stanley Model FMHT33856 Tape Measure (Variant 4)

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