L.N. 414 of 2002

THE METROLOGY ACT
ACT NO. XXV OF 2002

Calibration of Tanks of Inland Waterway Vessels and of Coasters Regulations, 2002

IN exercise of the powers conferred by article 19 of the Metrology Act, the Malta Standards Authority has made the following regulations:-

Citation and commencement.

1. (1) The title of these regulations is the Calibration of Tanks of Inland Waterway Vessels and of Coasters Regulations, 2002.

(2) These regulations shall come into force on such date or dates as the Authority may by notice in the gazette appoint and different dates may be so appointed for different purposes and different provisions of these regulations.

Definitions. Cap 419.

2. For the purposes of these regulations, all the definitions in the Malta Standards Authority Act shall apply, and in addition unless the context otherwise requires:

"EEC Calibration" shall mean a calibration carried out by a Member State in the European Union according to the provisions of these regulations.

Scope.

3. These regulations shall apply to EEC calibration of the tanks of inland waterway vessels and of coasters.

Calibration results.

4. (1) The results of calibration operations shall be recorded in an EEC calibration certificate, in conformity with the Annexes.

(2) The same value shall be attached to the EEC calibration certificate as to the corresponding national documents.

Adapted instruments.

5. (1) The measuring instruments used to determine the level of the liquid in tanks calibrated in accordance with these regulations shall be especially adapted for this purpose.

(2) They shall comply with the requirements of the relevant separate regulations.

ANNEX I

GENERAL REQUIREMENTS CONCERNING THE CALIBRATION OF THE TANKS OF VESSELS

1. The capacity of the tanks shall be determined.

   - either by the transfer of water or another suitable liquid, whose volume is measured by measures or measuring equipment with meters specially calibrated for this purpose,

   - or by calculating on the basis of the tank dimension, as determined, this operation shall be supplemented, where possible, by partial cross check using measured volumes of liquid.

2. The calibration operations shall be carried out in such a manner and with instruments of such precision that the relative errors in respect of capacities stated in the documents issued do not exceed:

   (a) as a general rule: ± 3/1000 of the capacity indicated

   (b) exceptionally, in the case of tanks with a very complicated shape which cannot be calibrated by transfer: ± 5/1000 of the capacity indicated.

3. The results of the calibration operations, shall be recorded in a calibration certificate which is accompanied by diagrams and tables showing, in particular, the volume of liquid, expressed in litres or cubic decimetres or cubic metres, which is in the tank when the level of free surface of the liquid is given as a height, expressed in centimetres or decimetres, on the vertical face of the measure of length.

The centimetre or decimetre tables may be supplemented by a millimetre interpolation table.

These documents shall conform to Annexes II, III and IV.

4. A calibration plate shall be fixed on each tank, in the vicinity of the measure orifice.

   It shall bear the following information:

   - the number of the tank,

   - the total reference height H,

   - the number of the calibration certificate.

It shall be made of a sufficiently durable material and be sealed by affixing the EEC sealing mark of the lead slugs provided for this purpose, in such a way that it cannot be removed without damaging the mark.

The characteristics and the pattern of the EEC sealing mark shall be those laid down from the partial EEC verification mark in the Measuring Instruments Regulations, 2002.

Regulation 12 of the the Regulations is applicable, *mutatis mutandis*.

5. The calibration certificate shall not be issued unless the construction and arrangement of the tanks and connecting pipes are such that under the normal operating conditions of the vessel, the tanks and connected pipes can, without difficulty, be totally emptied or totally filled without pockets of air becoming trapped above or in the liquid being measured, below the level at which the tank is considered full.

If exceptions are allowed, or if any precautions have to be taken to ensure correct measurement, they must be mentioned in the calibration certificate.

6. The vertical face of the measure of length at which the heights of the liquid are determined shall pass, as a general rule, approximately through the centre of gravity of the horizontal sections of the tank, in every part where a free surface of the liquid may occur when measurements are made under normal conditions of use.

If this condition is not satisfied because of the construction characteristics of the tank, it shall be specified on the calibration certificate that the level of the liquid in the tank may only be determined when the vessel has a zero trim and heel.

The axis of a guiding device determines the vertical position of the measure.

This device must ensure correct positioning of the measure; there must be no systematic errors of measurement resulting from the way in which it is constructed. The horizontal plane through the upper edge of the guiding device is the reference datum. The distance form this plan to the horizontal and irremovable contact plate positioned vertically below the datum is called the 'total reference height H' and shall be quoted at the top of each table.

Every precaution shall be taken to ensure that both the position of the reference datum in relation to the tank and the total reference height H, are virtually invariable.

The EEC sealing mark shall be affixed on the reference datum.

7. Taking into account:

(a) the precision with which the volumes specified in the tables have been determined,

(b) the precision with which the level of the free surface of the liquid may be determined in the tanks,

the calibration certificate indicates the relative precision of the use of the tanks for determining the volume of liquid which they contain.

In the case referred to in item 2 (a) of this Annex, the relative imprecision may not exceed ± 5/1000 of the volume specified in the table; in the case referred to in 2 (b), it may not exceed ± 8/1000 of the volume specified in the table.

The minimum measurable height shall be fixed at not less than 500mm.

8. The sealing marks, the calibration certificates and the calibration tables cease to be valid

- after twelve years,
- or as soon as the tank has become deformed, or been repaired or reconstructed, in a way liable to alter its measurements characteristics.

The final month and year of the relevant twelve years validity period is specified at the top of the certificate and each table

ANNEX II

CALIBRATION RECORDS

The calibration record, issued by the competent Authority, shall be composed of the following documents:

1. The calibration certificate proper, giving:

   (a) the name and address of the competent authority which issues the certificate;

   (b) the name and position of the operator;

   (c) the serial number of the certificate (which is reproduced on all the other documents and on the calibration plates);

   (d) the date of issue of the certificate and the address of the plate of employment of the calibration official;

   (e) the expiry date of the certificate;

   (f) the identity of the vessel (name, registration number, name and address of owner and year of construction);

   (g) list and nature of the documents attached;

   (h) the groups of tanks for which the same table may be used;

   (i) an indication of the tanks in which there are drainage sumps or heaters;

   (j) the total capacity;

   (k) the precision of the results given in the tables;

   (l) the precision of the use of calibration record for the determination of the volumes of the liquid contained in tanks;

   (m) the minimum measurable height.

2. A Diagram No 1, showing the position of the tanks in the vessel, and for each tank the total reference height H, the positioning of the measure and the position of the latter in relation to forward bulkhead of the tank and to the longitudinal median bulkhead or plane.

3. A Diagram No 2, being a transverse cross section of the tanks showing, in particular, the radius of the bilge, the camber, the height of the trunk and the method of construction of the guiding device.

4. In the case of a vessel having heaters or drainage sumps inside its tanks, a diagram No3 giving the volume taken up by these heaters or sumps and the volume of liquid which can be contained in the latter, from sluice-valve to sluice-valve.

5. For each tank or group of similar tanks, a centimetre or decimetre volume table containing an indication of the total reference height H and the expiry date and, where supplied, a millimetre interpolation table.

ANNEX III

MODEL CERTIFICATE OF CALIBRATION

Competent authority _____

Country _____ Expiry Date: _____

CALIBRATION CERTIFICATE NO. _____

'_____'[1]

_____

(Name, forenames and position of the calibration official)

certifies that on _____ he carried out, at the request of _____

_____, the calibration of the tanks of the _____ '_____',

registered under No. _____ owned by _____ and built in _____

Diagram No.1 gives the respective positions of the tanks, their numbering, the positioning of the measures and, for the tank, the total difference height H of the reference datum formed by the upper edge, of the guide (bearing the EEC sealing mark) above the upper surface of the contract plate at the bottom of the rank.

Diagram No.2 is a diagrammatic cross section of the tanks through the vertical face of the measure of length.

Diagram No.3 gives the arrangement and the volume of the sumps and heaters in the tanks.

When using the attached centimetre tables, the heights of the liquid must be determined at the vertical surfaces of the measures of length as indicated in Diagram No. 1.

The same table may be used for the following tanks: _____

The maximum imprecision in the calibration of the tanks is:

± 3/1000 (± 3 °/₀₀) of the capacity indicated in the case of tanks Nos. _____

± 5/1000 (± 5 °/₀₀) of the capacity indicated in the case of tanks Nos. _____

The maximum impression in the use of the tanks for determining the quantity of the liquid which they contain is:

± 5/1000 (± 5 °/₀₀) of the volume indicated in the case of tanks Nos. _____

± 8/1000 (± 8 °/₀₀) of the volume indicated in the case of tanks Nos. _____

provided that the vessel in on a level keel and that the levels of liquid are correctly determined by regulation measuring instruments.

Total capacity _____

Minimum measurable height = 500mm

(Stamp and signature of the operator).

Done at _____, on _____

[1] type of vessel (e.g. lighter, ship, barge) and the name of vessel

ANNEX IV

MODEL CALIBRATION TABLE

Competent authority _____

Expiry date _____

Position of the operator _____

ANNEX TO CERTIFICATE OF CALIBRATION NO _____

' _____ '

Tank No _____

Table giving the volume in cubic decimetres (litres, cubic metres) of the liquid in the tank in relation to the height of the liquid in the tank in centimetres above the base of the measure shown in Diagrams Nos. _____

Total capacity _____ Total reference height H _____

M	cm	Volumes	m	cm	Volumes	m	cm	volumes	m	cm	volumes
0	00		0	50		1	00		1	50	
	01			51			01			51	
	02			52			01			52	
	03			53			03			53	
	04			54			04			54	
	05			55			05			55	
	06			56							
	07			57							
	08			58							
	09			59							

(Lay-out of a table with volumes in columns)

[1] type and name of vessel

Height		Volume per centimetre of height									
m	dm	0	1	2	3	4	5	6	7	8	9
	0										
	1										
	2										
	3										
	4										
	5										

Lay-out of a table with double-entry reading