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COUNCIL DIRECTIVE

of 12 October 1971

on the approximation of the laws of the Member States relating to the calibration of the tanks of vessels

(71/349/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100 thereof;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament[1];

Having regard to the Opinion of the Economic and Social Committee[2];

Whereas in several Member States mandatory provisions lay down the methods by which the tanks, including the liquid fuel bunkers, of inland waterway vessels and of national and international coasters may be calibrated and used to measure their contents; whereas these requirements differ from one Member State to another and consequently hinder recognition by all Member States of measurements carried out by means of a tank calibrated by one of them;

Whereas such obstacles to the establishment and proper functioning of the common market can be reduced and even eliminated if all the Member States adopt the same requirements, either supplementary to or in place of their existing laws;

Whereas the Community requirements relating to the calibration method described in this Directive ensure that the quantity of liquid in tanks calibrated by this method can be measured at all times and with sufficient accuracy;

Whereas the calibration of the tanks of vessels is comparable to the initial verification procedure for measuring instruments; whereas certain provisions of the Council Directive of 26 July 1971[3] on the approximation of the laws of the Member States relating to provisions for both measuring instruments and methods of metrological control may therefore properly be applied in this matter;

HAS ADOPTED THIS DIRECTIVE:

Article 1

This Directive concerns EEC calibration of the tanks of inland waterway vessels and of coasters.

'EEC calibration' means a calibration carried out by a Member State in accordance with this Directive.

Article 2

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

Member States shall attach the same value to the EEC calibration certificate as to the corresponding national documents.

Article 3

The measuring instruments used to determine the level of the liquid in tanks calibrated in accordance with this Directive shall be specially adapted for this purpose.

The shall comply with the requirements of the relevant separate directive.

[1] OJ No C 108, 19.10.1968, p. 36.
[2] OJ No C 4, 14.1.1968, p. 2.
[3] OJ No L 202, 6.9.1971, p. 1.

Provisionally, however, instruments may be used if accepted by the competent service in the Member State where the level of the liquid is determined.

This provisional arrangement shall be terminated one year after the date laid down for the entry into force of the separate directive on the instruments in question.

Article 4

1. Member States shall put into force the laws, regulations and administrative provisions needed in order to comply with this Directive within eighteen months of its notification and shall forthwith inform the Commission thereof.

2. The Member States shall ensure that the texts of the main provisions of national law which they adopt in the field covered by this Directive are communicated to the Commission.

Article 5

This Directive is addressed to the Member States.

Done at Luxembourg, 12 October 1971.

For the Council

The President

L. VIGLIANESI

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 dimensions, as determined; this operation shall be supplemented, where possible, by a 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 the 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 digrams 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 the free surface of the liquid is at a given 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 for the partial EEC verification mark by Article 10 (2) and Annex 11.3 of the Council Directive of 26 July 1971 on the approximation of the laws of the Member States relating to provisions for both measuring instruments and methods of metrological control.

   Article 12 of that Directive 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 connecting 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 from this plane 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 $\pm$ *5/1000* of the volume specified in the table; in the case referred to in 2 (b), it may not exceed $\pm$ 8/1000 of the volume specified in the table.

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

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 measurement characteristics.

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

Certificates and tables shall be renewed only after a recalibration.

ANNEX II

CALIBRATION RECORDS

The calibration record, issued by a competent metrological 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 place 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 the 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 the 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 No 3 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 of 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 each tank, the total reference 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 contact plate at the bottom of the tank.

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‰) of the capacity indicated in the case of tanks Nos .....

± 5/1000 (± 5‰) of the capacity indicated in the case of tanks Nos .....

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

± 5/1000 (± 5‰) of the volume indicated in the case of tanks Nos .....

± 8/1000 (± 8‰) of the volume indicated in the case of tanks Nos .....

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

Total capacity .....

Minimum measurable height = 500 mm

(Stamp and signature of the operator).

Done at ....., on .....

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

ANNEX IV

MODEL CALIBRATION TABLE

Competent authority .....

Position of the operator .....

Expiry date

ANNEX TO CERTIFICATE OF CALIBRATION NO .....

'.....'[1]

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			02			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