II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DIRECTIVE

of 11 September 1979

on the approximation of the laws of the Member States relating to hot-water meters

(79/830/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 the Member States the construction and the methods of control of hot-water meters are subject to mandatory provisions which differ from one Member State to another and consequently hinder trade in such instruments; whereas it is therefore necessary to approximate these provisions;

Whereas Council Directive 71/316/EEC of 26 July 1971 on the approximation of the laws of the Member States relating to common provisions for both measuring instruments and methods of metrological control [3], as amended by the Act of Accession [4], laid down the EEC pattern approval and EEC initial verification procedures; whereas, in accordance with that Directive, the technical requirements for the design and functioning of hot-water meters should be laid down; whereas such requirements must be met, and the controls must be carried out, and the appropriate signs and marks affixed, before these instruments can be freely imported, marketed and used,

HAS ADOPTED THIS DIRECTIVE:

Article 1

This Directive shall apply to hot-water meters intended for the continuous determination of the volume of hot water passing through them. Such meters shall be provided with a measuring device linked to an indicating device. For the purpose of this Directive, 'hot water' shall be water the temperature of which exceeds 30 °C but does not exceed 90 °C.

Hot-water meters for incorporation in circulatory systems for the transfer of thermal energy are excluded from the scope of this Directive.

Article 2

Hot-water meters to which the EEC marks and signs may be affixed are described in the Annex to this Directive. They shall be subject to EEC pattern approval and shall be submitted for EEC initial verification.

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[1] OJ No C 131, 5. 6. 1978, p. 85.
[2] OJ No C 269, 13. 11. 1978, p. 44.
[3] OJ No L 202, 6. 9. 1971, p. 1.
[4] OJ No L 73, 27. 3. 1972, p. 14.

Article 3

No Member State may refuse, prohibit or restrict the placing on the market or entry into service of hot-water meters bearing the EEC pattern approval sign and the EEC initial verification mark, on the grounds of their metrological properties.

Article 4

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 1 January 1982 and shall forthwith inform the Commission thereof.

2. Member States shall communicate to the Commission the texts of the main provisions of national law which they adopt in the field governed by this Directive.

Article 5

This Directive is addressed to the Member States.

Done at Brussels, 11 September 1979.

For the Council

The President

Ray Mac SHARRY

ANNEX

I. TERMINOLOGY AND DEFINITIONS

1.0. This Annex applies only to hot-water meters, hereinafter referred to as 'the meter', which operate throughout on mechanical principles. Such meters either use volumetric chambers with moving boundaries or use the action of the velocity of the water on a bladed rotor (radial or axial turbine). This Annex does not apply to hot-water meters fitted with electronic devices.

1.1. **Flowrate**

The flowrate is the volume of water passing through the meter per unit of time.

1.2. **Volume delivered**

The volume delivered is the total volume of water which has passed through the meter in a given time.

1.3. **Maximum flowrate** (Q_{max})

The maximum flowrate, Q_{max}, is the highest flowrate at which the meter must be able to function over limited periods without damage, and without exceeding the maximum permissible errors and the maximum permissible value for loss of pressure.

1.4. **Nominal flowrate** (Q_n)

The nominal flowrate Q_n, is equal to half the maximum flowrate, Q_{max}. It is expressed in cubic metres per hour and is used to designate the meter.

At the nominal flowrate, Q_n, the meter must be able to function in normal use, i.e., in continuous and intermittent operating conditions, without the maximum permissible errors being exceeded.

1.5. **Minimum flowrate** (Q_{min})

The minimum flowrate, Q_{min}, is the flowrate above which the maximum permissible errors must not be exceeded, and is fixed as a function of Q_n.

1.6. **Flowrate range**

The flowrate range of the meter is bounded by the maximum and minimum flowrates, Q_{max} and Q_{min}. It is divided into two regions, termed upper and lower, with different maximum permissible errors.

1.7. **Transitional flowrate** (Q_t)

The transitional flowrate, Q_t, is the flowrate which divides the upper and lower regions of the flowrate range and the flowrate at which the maximum permissible errors become discontinuous.

1.8. **Maximum permissible error**

The maximum permissible error is the limit of the error permitted by this Directive for EEC pattern approval and EEC initial verification of the meter.

1.9. **Loss of pressure**

Loss of pressure means the loss which is caused by the presence of the meter in the pipeline.

II. METROLOGICAL CHARACTERISTICS

2.1. **Maximum permissible errors**

The maximum error permitted in the lower region, from Q_{min} inclusive to Q_t non-inclusive, is $\pm$ 5 %.

The maximum error permitted in the upper region from Q_t inclusive to Q_{max} inclusive, is ± 3 %.

2.2. **Metrological classes**

Meters are divided, according to the values of Q_{min} and Q_t defined above, into the four metrological classes in the following table:

Classes	Q_n	
	< 15 m³/h	≥ 15 m³/h
Class A		
Value of Q_{min}	0·04 Q_n	0·08 Q_n
Value of Q_t	0·10 Q_n	0·20 Q_n
Class B		
Value of Q_{min}	0·02 Q_n	0·04 Q_n
Value of Q_t	0·08 Q_n	0·15 Q_n
Class C		
Value of Q_{min}	0·01 Q_n	0·02 Q_n
Value of Q_t	0·06 Q_n	0·10 Q_n
Class D		
Value of Q_{min}	0·01 Q_n	
Value of Q_t	0·015 Q_n	

III. TECHNOLOGICAL CHARACTERISTICS

3.1. **Construction — general provisions**

The meter must be constructed in such a way as to:

— give long service and guarantee proof against fraud,

— conform with the provisions of this Directive,

under normal conditions of use.

Where meters may be subjected to an accidental reversal of flow they must be capable of withstanding it without any deterioration or adverse effect on their metrological properties, and at the same time record such a reversal.

3.2. **Materials**

The meter must be made of materials of adequate strength and stability for the purpose for which it is to be used. It must be constructed throughout of materials which are resistant to internal and normal external corrosion and if necessary be protected by applying a suitable surface treatment. Water temperature variations within the temperature range 0 to 110 °C must not adversely affect the materials used in the construction of the meter.

3.3. **Soundness — pressure tightness and temperature resistance**

The meter must be able to withstand indefinitely, without malfunction, leakage, seepage through walls or permanent deformation, a continuously applied water temperature of 90 °C and the continuously applied pressure for which it is designed, termed the maximum operating pressure. The minimum value for this pressure is 10 bar.

3.4. **Loss of pressure**

The value of the loss of pressure is ascertained during EEC pattern approval tests; it must not exceed 0·25 bar at the nominal flowrate or 1 bar at the maximum flowrate.