II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DIRECTIVE

of 22 December 1986

on the limitation of noise emitted by hydraulic excavators, rope-operated excavators, dozers, loaders and excavator-loaders

(86/662/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 (1),

Having regard to the opinion of the European Parliament (2),

Having regard to the opinion of the Economic and Social Committee (3),

Whereas the 1973 (4) and 1977 (5) action programmes of the European Communities on the environment highlight the importance of the problem of noise nuisance and, in particular, the need for action to regulate the worst noise sources;

Whereas, during the Council meeting of 18 and 19 December 1978, the Ministers for the Environment declared that the technical requirements relating to the measurement of noise at the operator's position would have to be included in the Annexes to the special Directives on each type of equipment under consideration;

Whereas the disparity between the provisions applicable in the various Member States concerning the limitation of the sound emission level of hydraulic and rope-operated excavators and of dozers and excavator-loaders directly affects the functioning of the common market; whereas it is therefore appropriate to carry out in this field the approximation of laws for which Article 100 of the Treaty provides;

Whereas Council Directive 84/532/EEC of 17 September 1984 on the approximation of the laws of the Member States relating to common provisions for construction plant and equipment (6) laid down, *inter alia*, the procedures for EEC type-approval verification; whereas it is necessary, pursuant to that Directive, to prescribe the harmonized requirements which each category of equipment must satisfy;

Whereas Council Directive 79/113/EEC of 19 December 1978 on the approximation of the laws of the Member States relating to the determination of the noise emission of construction plant and equipment (7), as amended by Directive 81/1051/EEC (8), laid down the method which should be used for establishing the acoustic criteria for hydraulic and rope-operated excavators and for dozers, loaders and excavator-loaders;

Whereas, owing to the effect of the noise emitted by hydraulic and rope-operated excavators and by dozers, loaders and excavator-loaders on the environment and, more particularly, on human well-being and health, it is necessary to bring about a progressive and appreciable reduction in the permissible sound emission level of

(1) OJ No C 302, 21. 11. 1981, p. 7.
(2) OJ No C 66, 15. 3. 1982, p. 95.
(3) OJ No C 64, 15. 3. 1982, p. 12.
(4) OJ No C 112, 20. 12. 1973.
(5) OJ No C 139, 13. 6. 1977.
(6) OJ No L 300, 19. 11. 1984, p. 111.
(7) OJ No L 33, 8. 2. 1979, p. 15.
(8) OJ No L 376, 30. 12. 1981, p. 49.

hydraulic and rope-operated excavators and of dozers, loaders and excavator-loaders;

Whereas it is appropriate to set a sound emission level applicable when this Directive comes into force and to make these provisions more stringent on a gradual basis;

Whereas it is appropriate to publish, for information purposes, the sound-power level and the sound-pressure level at the operator's position;

Whereas the technical provisions must be supplemented and rapidly adapted to technical progress; whereas, to this end, provision should be made for application of the procedure defined in Article 5 of Directive 79/113/EEC,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive shall apply to the sound-power level of airborne noise emitted in the environment and the sound-pressure level of airborne noise emitted at the operator's position of hydraulic excavators, rope-operated excavators, dozers, loaders and excavator-loaders, hereinafter referred to as 'earth-moving machines', used to perform work on civil-engineering and building sites.

2. This is a separate Directive within the meaning of Article 3 (2) of Council Directive 84/532/EEC, hereinafter referred to as the 'framework Directive'.

Article 2

For the purposes of this Directive:

2.1. *Hydraulic or rope-operated excavators* means machines combining a self-propelled undercarriage with an upper structure which can swivel through more than 360°. The machine excavates, lifts, carries and dumps material by moving either a boom, an arm and bucket (as is the case with a face shovel or a backhoe) or a bucket controlled by the winding-gear (as is the case with a drag-line or a clamshell).

2.2. *Dozers* means self-propelled wheeled or crawler machines fitted in front with a blade which serves primarily to displace or spread materials.

2.3. *Loaders* means self-propelled wheeled or crawler machines fitted in front with a bucket. The machine loads, raises, transports and dumps material by combining its own movements and those of the bucket.

2.4. *Excavator-loaders* means self-propelled wheeled or crawler machines, designed to be fitted with a loading bucket at the front and an excavating arm at the rear as original equipment. The loading bucket loads, raises, transports and dumps material by combining its own movements with those of the machine. The excavating arm excavates, raises and dumps material by movements of the boom, arm and bucket.

Article 3

1. The approved bodies shall issue an EEC type-examination certificate for every type of earth-moving machine referred to in Article 1 (1):

(a) during a six-year period from the date on which the Directive enters into force, where the sound-power level of airborne noise emitted in the environment measured under the conditions of stationary operation set out in Annex I to Directive 79/113/EEC, as supplemented by Annex I to this Directive, does not exceed the permissible level specified with reference to the net installed power in the following table:

Net installed power in kW (*)	Permissible sound-power level in dB (A)/1 pW
⩽ 70	106
> 70 ⩽ 160	108
> 160 ⩽ 350	
— hydraulic and rope-operated excavators	112
— other earth-moving machines	113
> 350	118

(*) As defined in Section 6.2.1 of Annex I.

(b) after expiry of the abovementioned six-year period, where the sound-power level of airborne noise emitted into the environment measured under the conditions of real dynamic operation laid down in Annex I to Directive 79/113/EEC, as supplemented by Annex II to this Directive, does not exceed the permissible level determined pursuant to Article 7.

2. All applications for an EEC type-examination certificate in respect of the permissible sound-power levels of a type of earth-moving machine shall be accompanied by an information document conforming to the model shown in Annex IV.

3. For each type of earth-moving machine it certifies, the approved body shall complete all the sections of the type-examination certificate conforming to the model given in Annex III to the framework Directive.

4. The period of validity of EEC type-examination certificates shall be limited to six years.

However, the certificate granted in accordance with the provisions of paragraph 1 (a) shall cease to be valid after a period of seven years has elapsed from the date the Directive entered into force.

The conditions for renewing certificates granted shall be determined pursuant to Article 7.

6. For every earth-moving machine built in conformity with the type certified by EEC type-examination, the manufacturer shall complete a certificate of conformity conforming to the model given in Annex IV to the framework Directive and shall indicate thereon the net installed power and the corresponding swivel system.

7. Each earth-moving machine built in accordance with the type certified by EEC type-examination shall bear a clear and permanent mark indicating the

— sound-power level in dB(A) in relation to 1 pW,

— sound-pressure level in dB(A) in relation to 20 μPa at the operator's position,

guaranteed by the manufacturer and determined as laid down in Annex I to Directive 79/113/EEC, as amended by Directive 81/1051/EEC and supplemented by Annex I or II and III to this Directive, together with the symbol 'ε' (epsilon). The model for these marks is given in Annex V to this Directive.

Article 4

The provisions of this Directive shall not affect the Member States' entitlement to limit, with due observance of the Treaty and, in particular, Articles 30 to 36 thereof, the noise level observed at the operator's position in earth-moving machines provided that this does not entail any obligation to adjust earth-moving machines which meet the requirements of this Directive to different emission specifications within the meaning of Annex I to the Directive.

Article 5

Member States may take measures to regulate the use of earth-moving machines in areas which they consider sensitive.

Article 6

Checking of the conformity of production models with the type examined, as provided for in Article 12 of the framework Directive, shall be carried out using the technical procedure laid down in Annex VI.

Article 7

At the earliest opportunity and at the latest 18 months after the entry into force of the Directive, the Commission will submit to the Council a proposal aimed at determining, on the basis of the measurement method to be adopted in accordance with the first indent of Article 8, the permissible sound levels referred to in Article 3 (1) (b) and also the conditions for possible extension of EEC type-examination certificates and their period of validity referred to in Article 3 (4). The permissible sound levels shall be so determined that their effect on the environment is reduced by approximately 3 dB according to the category of power and the type of machine, measured according to the stationary operation method.

The Council will take a decision on the proposal, in accordance with the provisions of the Treaty, within 24 months of the date on which it was forwarded to the Council.

Article 8

The following shall be adopted in accordance with the procedure laid down in Article 5 of Directive 79/113/EEC as amended by Directive 81/1051/EEC:

— the real, dynamic method of measurement referred to in Annex II,

— the amendments necessary to adapt the requirements of the Annexes to this Directive to technical progress.

Article 9

The Council shall, in accordance with the provisions of the Treaty and within a period of 18 months, take a decision on the proposal for the reduction of permissible noise-levels which the Commission will put forward five years after the period referred to in Article 3 (1) (b) has entered into force.

Article 10

Member States shall take all necessary measures to ensure that earth-moving machines as defined in Article 2 cannot be placed on the market unless they satisfy the provisions of this Directive and of the framework Directive.

Article 11

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive on the day following expiry of a period of 24 months from its notification [1] 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 covered by this Directive.

Article 12

This Directive is addressed to the Member States.

Done at Brussels, 22 December 1986.

For the Council

The President

G. SHAW

[1] This Decision was notified to the Member States on 29 December 1986.

ANNEX I

METHOD OF MEASUREMENT OF AIRBORNE NOISE EMITTED BY HYDRAULIC EXCAVATORS, ROPE-OPERATED EXCAVATORS, DOZERS, LOADERS AND EXCAVATOR-LOADERS

SCOPE

This method of measurement is applicable to hydraulic excavators, rope-operated excavators, dozers, loaders and excavator-loaders, hereinafter referred to as 'earth-moving machines'. It lays down the test procedure for determining the sound-power level of such earth-moving machines with a view to EEC type-examination and checking for conformity.

These technical procedures comply with the requirements laid down in Annex I to Directive 79/113/EEC, and the provisions of that Annex are applicable to earth-moving machines subject to the following additions:

4. CRITERIA TO BE USED FOR EXPRESSING RESULTS

4.1. **Acoustic criterion for the environment**

The acoustic criterion for the environment of an earth-moving machine is expressed by the sound-power level L_{WA}.

6.2. **Operation during measurements**

The noise emitted is measured with the earth-moving machine stationary and its engine idling.

For these measurements, the engine and hydraulic system of the machine must be warmed up in accordance with the manufacturer's instructions and safety requirements must be observed.

6.2.1. The test is carried out with the earth-moving machine in a stationary position without operating the working equipment or travelling mechanism. For the purposes of the test the engine will idle at not less than the rated speed corresponding to the net power as defined and determined in accordance with Annex I to Council Directive 80/1269/EEC of 16 December 1980.

The rated speed and the corresponding net power are stated by the manufacturer of the earth-moving machine and must appear on the technical instructions for use of the earth-moving machine and on the certificate of conformity issued to the purchaser.

If the earth-moving machine is fitted with several engines, they must work simultaneously during the test provided that such simultaneous working forms part of the normal working conditions of the machine.

If the engine of the earth-moving machine is fitted with a fan, the latter must operate during the tests. If the fan can work at several speeds, the tests shall be carried out at its maximum working speed.

The rated speed is set by the manufacturer. The working equipment (bucket or blade of a loader or a dozer) is positioned at a height of 300 ± 50 millimetres above the ground.

In the case of excavators and excavator-loaders, the working equipment must be in the retracted position.

6.2.2. *Tests under load*

Not applicable.

6.3. **Measuring site**

The measuring site must be flat and horizontal. This site, including the microphone positions, must be of concrete or non-porous asphalt.