

Pursuant to the Article 22 paragraph 2 of the Law on Environmental Noise Protection ("Official Gazette of Montenegro", nos. 18/11 and 1/14), the Ministry of Sustainable Development and Tourism hereby issues the following

RULEBOOK

ON CONFORMITY MARKING FOR SOURCES OF NOISE PLACED ON THE MARKET AND PUT INTO SERVICE (*)

(Published in the "Official Gazette of Montenegro", no. 13 of 14 March 2014)

Article 1

This Rulebook lays down conformity marking for sources of noise - machines, non-road machinery, devices and equipment for use outdoors (hereinafter referred to as: the „equipment“), which are placed on the market or put into service.

Article 2

This Rulebook shall apply to the following sources of noise for use outdoors:

- non-powered machines, self-propelled machines, machines that can be moved and those independent from powered elements intended for use outdoors;
- non-powered equipment used for industrial or environmental applications intended for use outdoors.

The use outdoors of the equipment referred to in the paragraph 1 hereof means any use in an ambience where the transmission of sound is not affected (under tents, under roofs for protection against rain or in the shell of houses).

Types of equipment referred to in the paragraph 1 hereof are given in the Annex 1 which is an integral part hereof.

Article 3

The equipment is eligible for placing on market or putting into service if:

- 1) it meets criteria related to noise emissions as laid down in the Annex 2 which is an integral part hereof;
- 2) it is marked with conformity marking and the indication of the guaranteed sound power level as laid down in the Annex 3 which is an integral part hereof;
- 3) it is accompanied by the declaration of conformity as laid down in the Annex 4 which is an integral part hereof.

Article 4

The equipment that fails to meet requirements referred to in the Article 3 hereof may be displayed in fairs, exhibitions, demonstrations and other similar events provided that it is not placed on the market or put into service.

During demonstrations of the equipment referred to in the paragraph 1 hereof, adequate safety measures shall be taken to ensure the protection of persons against noise.

Article 5

For the purpose of this Rulebook, the following definitions shall apply:

- 1) **significant modification of engine** means such modification of an engine that may cause to exceed noise emission limit values as laid down in the Annex 2 (Part B) hereof, not including routine replacement of engine spare parts not affecting noise emission levels, or modification resulting in an increase of engine power for more than 15%;
- 2) **sound power level** means the A-weighted sound power in dB in relation to 1 pW;
- 3) **measured sound power level** means a sound power level as determined either from measurements of noise on the basis of a single machine representative for the particular type of equipment or from the average of a number of noise sources of the same type;
- 4) **guaranteed sound power level** means a sound power level determined by the technical documentation.

Article 6

Guaranteed sound power level is established for the equipment referred to in the Annex 1 hereof.

Guaranteed sound power level for the equipment referred to in the paragraph 1 hereof shall not exceed the permitted sound power level.

Permitted sound power levels, for each type of equipment are given in the Annex 2 hereof.

Methods for noise measurement for the equipment referred to in the paragraph 1 hereof shall be carried out in accordance with the Annex 5 (Part B) which is an integral part hereof.

Article 7

Before being placed on the market or put into service, the equipment shall be subject to the conformity assessment procedure.

The conformity assessment procedure referred to in the paragraph 1 hereof shall include:

- 1) the internal control of production with assessment of technical documentation and periodical checking of the equipment in accordance with the Annexes 6 and 7 which are an integral part hereof;
- 2) the unit verification procedure in accordance with the Annex 8 which is an integral part hereof;
- 3) the full quality assurance procedure in accordance with the Annex 9 which is an integral part hereof.

Article 8

Conformity assessment for the equipment shall be carried out by a legal person meeting the requirements related to conformity assessment as laid down in the Annex 10 which is an integral part hereof (hereinafter referred to as: the „body for conformity assessment“) that is, the body appointed in accordance with the law regulating technical requirements for products and conformity assessment.

Article 9

The declaration of conformity of the equipment referred to in the Article 3 hereof shall be drawn up by the manufacturer or his authorised representative, prior to placing the equipment on the market and/or putting it into service, in Montenegrin language; if the equipment has not been manufactured in Montenegro, the declaration shall be translated into Montenegrin at the time of the import of equipment.

The manufacturer, his authorised representative or the importer in case the manufacturer or his authorized representative are not registered in Montenegro, shall keep a specimen of the declaration of conformity referred to in the paragraph 1 hereof, translated into Montenegrin language, for at least ten years from the date on which the equipment referred to in the Article 2 hereof was last manufactured, or imported in Montenegro.

Article 10

Technical documentation for the equipment referred to in the Article 3 hereof shall be drawn up by the manufacturer.

Technical documentation referred to in the paragraph 1 hereof, shall be kept by the manufacturer or his authorised representative for at least ten years from the date on which the equipment was manufactured or for ten years from the date of the last manufactured specimen, in case of serial production.

Article 11

The manufacturer or his authorised representative, or the importer in case the manufacturer or his authorized representative are not registered in Montenegro, prior to placing the equipment, which complies with requirements established herein, on the market and/or putting it into service, shall mark it with conformity marking and the indication of the guaranteed sound power level, as laid down in the Annex 3 hereof.

Article 12

Provisions of the Article 3 paragraph 2, Article 11 and the Annex 3 hereof, related to the equipment manufactured in Montenegro with respect to the conformity marking, shall apply from the date of accession of Montenegro to the European Union.

Article 13

This Rulebook shall enter in force eight days from the day of its publishing in the "Official Gazette of Montenegro".

No: 09-329/4

Podgorica, 24 February 2014

Minister,
Branimir Gvozdenović, m.p.

(*) The Directive 2000/14/EC of the European Parliament and of the Council, amended by the Directive 2005/88/EC relating to the noise emission in the environment by equipment for use outdoors have been transposed into this Rulebook

Types of Equipment for Use Outdoors

Equipment for use outdoors

1) **Aerial access platform with combustion engine** is an equipment consisting at least of a work platform, an extending structure and a chassis.

The work platform is a fenced platform or a cage which can be moved under load to the required working position, and the extending structure is connected to the chassis and supports the work platform, which allows movement of the work platform to its required position.

2) **Brush cutter** is a combustion-engine driven portable hand-held unit fitted with a rotating blade made of metal or plastic intended to cut weeds, brush, small trees and similar vegetation, which operates in a plane approximately parallel to the ground.

3) **Builder's hoist for the transport of goods** is a power-operated, temporarily installed builder's hoist intended for use by persons who are permitted to enter engineering and construction sites, serving:

1. defined landing (access) levels, having a platform:

- designed for the transportation of goods only;
- which permits the access of persons during loading and unloading;
- which permits the access and travel by authorised persons during erection, dismantling and maintenance;
- guided;
- travelling vertical or along a path within maximum 15° of the vertical;
- supported or sustained by: wire, rope, chain, screwed spindle and nut, rack and pinion, hydraulic jack (direct or indirect), or an expanding linkage mechanism; and
- where masts may or may not require support from separate structures, or

2. either one upper landing or a work area extending to the end of the guide (e.g. a roof), having a load-carrying device:

- designed for the transportation of goods only;
- designed in such a way that there is no need to step on it for loading or unloading purposes or for maintenance, erection and dismantling;
- from which persons are prohibited at any time;
- guided;
- which is designed to travel at an angle of at least 30° to the vertical, but may be used at any angle;
- sustained by steel wire rope and a positive drive system;
- controlled by constant pressure controls;
- which does not benefit from the use of any counterweight;
- having a maximum rated load of 300 kg;
- having a maximum speed of 1 m/s; and
- where the guides require support from separate structures.

4) **Building site band saw machine** is a hand-fed powered machine, weighing less than 200kg, fitted with a single saw blade in the form of a continuous band mounted on and running between two or more pulleys.

5) **Building site circular saw bench** is a hand-fed machine, weighing less than 200kg, fitted with a single circular sawblade (other than a scoring saw), with a diameter from 350mm to 500mm, which is fixed during the normal cutting operation, and a horizontal table, all or part of which is fixed during operation.

The sawblade is mounted on a horizontal non-tilting spindle, the position of which remains stationary during machining.

The machine may have any of the following features:

- the facility for the sawblade to be raised and lowered through the table;
- machine frame below the table may be open or enclosed;
- the saw may be fitted with an additional, manually operated travelling table (not adjacent to the sawblade)

6) **Chain saw portable** is a power-driven tool designed to cut wood with a saw chain and consisting of an integrated compact unit of handles, power source and cutting attachment, designed to be supported with two hands.

7) **Combined high pressure flusher and suction vehicle** is a vehicle which may work either as a high pressure flusher or as a suction vehicle.

8) **Compaction machine** is a machine which compacts materials (rock fills, soil or asphalt surfacing), through a rolling, tamping or vibrating action of the working tool, and it may be self-propelled, towed, walk-behind or an attachment to a carrying machine.

Compacting machines are subdivided as follows:

- rollers for ride-on operators are self-propelled compaction machines with one or more metallic cylindrical bodies (drums) or rubber tyres; the operator's station is an integral part of the machine;
- walk-behind rollers are self-propelled compaction machines with one or more metallic cylindrical bodies (drums) or rubber tyres in which the operation facilities for travelling, steering, braking and vibrating are disposed in such a way that the machines have to be operated by an attending operator or by remote control;
- towed roller are compaction machines with one or more metallic cylindrical bodies (drums) or rubber tyres which do not possess an independent drive system and where the operator's station is to be found on a tractor unit;
- vibratory plates and vibratory rammers are compaction machines with mainly flat base plates which are made to vibrate and they are operated by an attending operator or as an attachment to a carrier machine;

- explosion rammers are compaction machines with mainly a flat pad as the compacting tool which is made to move in a predominantly vertical direction by explosion pressure, and the machine is operated by an attending operator.

9) **Compressor** is any machine for use with interchangeable equipment which compresses air, gases or vapours to a pressure higher than the inlet pressure.

A compressor comprises the bare compressor itself, the prime mover and any component or device supplied, which is necessary for safe operation of the compressor.

Compressors referred to in the paragraph 1 hereof exclude the following categories of device:

- fans, i.e. devices producing air circulation at a positive pressure of not more than 110 kPa;

- vacuum pumps, i.e. devices or appliances for extracting air from an enclosed space at a pressure not exceeding atmospheric pressure; and

- gas turbine engines.

10) **Concrete-breakers and picks, hand held** are powered (by any method) concrete-breakers and picks used to perform work on civil engineering and building sites.

11) **Concrete or mortar mixer** is a machine to prepare concrete or mortar, irrespective of the loading, mixing and emptying process, which may be operated intermittently or constantly, whereas concrete mixers on trucks are called truck mixers.

12) **Construction winch** is a power-operated, temporarily installed lifting appliance which is equipped with means for raising and lowering a suspended load.

13) **Conveying and spraying machine for concrete and mortar** is a machine for pumping and spraying concrete or mortar on construction sites, with or without agitator, whereby the materials to be transported is conveyed to the placing position through pipelines, distribution devices or distribution booms and they may be mounted on trucks, trailers or special vehicles.

Concrete is conveyed mechanically, by piston or rotor pumps.

Mortar is conveyed mechanically by piston, worm, rubber (hose) and rotor pumps or pneumatically by compressors with or without air chamber.

14) **Conveyor belt** is a temporarily installed machine for transporting material by means of a power-driven belt.

15) **Cooling equipment on vehicles** is a cargo space refrigeration unit on vehicle categories N₂, N₃, O₃ and O₄, as defined by the regulation laying down technical conditions for vehicles in circulation on roads.

The refrigeration unit may be powered by the energy of its own source, a separate part attached to the vehicle body, a driving engine of the vehicle, or by an independent power source.

16) **Dozer** is a self-propelled wheeled or crawler machine used to exert a push or pull force through mounted equipment.

17) **Drill rig** is a machine which is used for drilling holes on construction sites by:

- percussive drilling;

- rotary drilling; and

- rotary percussive drilling.

Drill rigs are stationary during drilling, and they may move from one place of work to another, under their own power.

Self-propelled drill rigs include those mounted on lorries, wheeled chassis, tractors, crawlers, skid bases (pulled by winch), and when drill rigs are mounted on lorries, tractors and trailers, or a wheel-based, transportation may be carried out at higher speeds on public roads.

18) **Dumper** is a self-propelled machine wheeled or crawler machine having an open body, which either transports and dumps or spreads material, and may be equipped with integral self-loading equipment.

19) **Equipment for loading and unloading of silos or tanks on trucks** are powered devices attached to silo or tanker trucks for loading and unloading of liquids or bulk material by means of pumps or similar equipment.

20) **Excavator, hydraulic or rope-operated** is a self-propelled crawler or wheeled machine having an upper structure of a minimum 360° rotation, which excavates, swings and dumps material by the action of a bucket fitted to the boom and arm or telescopic boom, without moving the chassis or undercarriage during any one cycle of the machine.

21) **Excavator-loader** is a self-propelled wheeled or crawler machine having a main structural support designed to carry both a front-mounted bucket loading mechanism and a rear-mounted backhoe.

When used in the backhoe mode, the machine normally digs below ground level with bucket motion towards the machine.

The backhoe lifts, swings and discharges material while the machine is stationary, and when used in the loader mode, the machine loads or excavates through forward motion of the machine, and lifts, transports and discharges material.

22) **Glass recycling container** is a container, built of whatever material, that is used for the collection of bottles, and it is equipped with at least one opening for filling in bottles and another one for emptying the container.

23) **Grader** is a self-propelled wheeled machine having an adjustable blade, positioned between front and rear axles, which cuts, moves and spreads material usually to grade requirements.

24) **Grass trimmer and grass edge trimmer** is a combustion-engine driven portable hand-held unit fitted with flexible line(s), wire(s) or similar non-metallic flexible cutting elements, such as pivoting cutters, intended to cut weeds, grass of similar soft vegetation.

The cutting device operates in a plane approximately parallel (grass trimmer) or perpendicular (grass edge trimmer) to the ground.

25) **Hedge trimmer** is a hand-held, integrally driven powered equipment which is designed for use by one operator for trimming hedges and bushes, utilising one or more linear reciprocating cutter blades.

26) **High pressure flusher** is a vehicle equipped with a device to clean sewers or similar installations by means of a high pressure water jet.

The device may be either mounted on a proprietary vehicular truck chassis or incorporated into its own chassis embodiment, and the equipment may be fixed or demountable, as in the case of an exchangeable bodywork system.

27) **High pressure water jet machine** is a machine with nozzles or other speed-increasing openings which allow water, also with admixtures, to emerge as a free jet, and it consists of a drive, a pressure generator, flexible hose lines, spraying devices, safety mechanisms, controls and measurement devices.

High pressure water jet machines may be mobile or stationary:

- mobile high pressure water jet machines are mobile, readily transportable machines which are designed to be used at various sites, and for this purpose are generally fitted with their own undergear or are vehicle-mounted, and all necessary supply lines are flexible and readily disconnectable;

- stationary high pressure water jet machines are designed to be used at one site for a length of time, but capable of being moved to another site with suitable equipment, and are generally skid or frame-mounted with supply line capable of being disconnected.

28) **Hydraulic hammer** is equipment which uses the hydraulic power source of the carrier machine to accelerate a piston (sometimes gas-assisted), which then hits a tool.

The stress wave generated by kinetic action flows through the tool into the material, which causes the material to break, and hydraulic hammers need a supply of pressurised oil to function.

To complete carrier/hammer unit is controlled by an operator, usually seated in the cabin of the carrier.

29) **Hydraulic power pack** is any machine for use with interchangeable equipment which compresses liquids to a pressure higher than the inlet pressure, and it consists in a prime mover, pump, with or without reservoir and accessories (controls, pressure relief valve).

30) **Joint cutter** is a mobile machine intended for the production of joints in concrete, asphalt and similar road surfaces. The cutting tool is a rotating high speed disc.

The forward motion of the joint cutter can be:

- manual;
- manual with mechanical assistance; and
- power-driven.

31) **Landfill compactor, loader-type with bucket** is a self-propelled wheeled compaction machine having a front-mounted loader linkage with a bucket having steel wheels (drums), primarily designed to compact, move, grade, and load soil, landfill or sanitary (refuse) materials.

32) **Lawnmower** is a walk-behind or ride-on grass cutting machine or a machine with grass-cutting attachment(s) where the cutting device operates in a plane approximately parallel to the ground, and which uses the ground to determine the height of cut by means of wheels, air cushion or skids, etc., and which utilises an engine or an electric motor for a power source.

The cutting devices are:

- rigid cutting elements; and
- non-metallic filament line(s) or freely pivoting non-metallic cutter(s) with a kinetic energy of more than 10 J each; the kinetic energy is determined using the standard MEST EN 786:1997, Annex B.

Lawnmower is also a walk-behind or ride-on grass cutting machine or a machine with grass-cutting attachment(s), where the cutting device is rotating about a horizontal axis to provide a shearing action with a stationary cutter bar or knife (cylinder mower).

33) **Lawn trimmer/lawn edge trimmer** is an electrically powered walk-behind or hand-held grass cutting machine, with cutting element(s) of non-metallic filament line(s) or freely pivoting non-metallic cutters with a kinetic energy of not more than 10J each, intended to cut grass or similar soft vegetation.

The cutting element(s) operate(s) in a plane approximately parallel (lawn trimmer) or perpendicular (lawn edge trimmer) to the ground, and the kinetic energy is determined according to the standard MEST EN 786:1997.

34) **Leaf blower** is a powered machine appropriate to clear lawns, paths, ways, streets, etc. of leaves and other material by means of a high velocity air flow, and it may be portable (hand-held) or not portable but mobile.

35) **Leaf collector** is a powered machine suitable for collecting leaves and other debris using a suction device, consisting of a power source which produces a vacuum inside the machine, a suction nozzle and a container for the collected material, and it may be portable (hand-held) or not portable but mobile.

36) **Lift truck, combustion-engine driven, counterbalanced** is a wheeled, internal combustion-engine driven lift truck with counterweight and lifting equipment (mast, telescopic arm or articulated arm), in particular:

- rough terrain trucks (wheeled counterbalanced trucks intended primarily for operation on unimproved natural terrain and on disturbed terrain - construction sites); and
- other counterbalanced lift trucks, excluded are those that are specifically constructed for container handling.

37) **Loader** is a self-propelled wheeled or crawler machine having an integral front-mounted bucket-supporting structure and linkage, which loads or excavates through forward motion of the machine, and lifts, transports and discharges material.

38) **Mobile crane** is a self-powered jib crane capable of travelling, loaded or unloaded, without the need for fixed runways and relying on gravity for stability, and it operates on tyres, crawlers or with other mobile arrangements.

In fixed (work) positions it may be supported by outriggers or other accessories increasing its stability.

The superstructure of a mobile crane may be of type of full-circle slewing, of limited slewing or non-slewing, and it is normally equipped with one or more hoists and/or hydraulic cylinders for lifting and lowering the jib and the load.

Mobile cranes are equipped either with telescopic jibs, with articulated jibs, with lattice jibs, or a combination of these, of such a design that may readily be lowered, and the load suspended from the jib may be handled by hook block assemblies or other load-lifting attachments for special services.

39) **Mobile waste container** is an appropriately designed container with a cover and fitted with wheels intended to store waste temporarily.

40) **Motor hoe** is a self-propelled machine designed to be controlled by operator:

- with or without support wheel(s), in such a way that its working elements act as hoeing tools to ensure propulsion (motor hoe); and

- propelled by one or various wheel(s) directly actuated from the engine and equipped with hoeing tools (motor hoe with drive wheel(s)).

41) **Paver-finisher** is a mobile road construction machine used for the purpose of applying layers of construction material, such as bituminous mix (asphalt concrete), concrete and gravel on surfaces, and they may be equipped with a high-compaction screed.

42) **Piling equipment** is pile installation and extraction equipment (impact hammers, extractors, vibrators or static pile pushing/pulling devices) which is a part of an assembly of machines and components used for installation or extraction of piles, which also includes:

- piling rig consisting of carrier machine (crawler, wheel or rail mounted, floating leader attachment, leader or guiding system);

- accessories, pile caps, helmets, plates, followers, clamping devices, pile handling devices, pile guides, acoustic shrouds and shock/vibration absorbing devices, power packs/generators and personal lifting devices or platforms.

43) **Pipelayer** is a self-propelled crawler or wheeled machine specifically designed to handle and lay pipes and carry pipeline equipment, with especially designed components such as undercarriage, chassis, counterweight, boom and load-hoist mechanism, and vertically pivoting side boom.

44) **Piste caterpillar** is a self-propelled crawler machine used to exert a push or pull force on snow and ice through mounted equipment.

45) **Power generator** is any device comprising an internal combustion engine driving a rotary electrical generator producing a continuous supply of electrical power.

46) **Power sweeper** is a sweeping collection machine having equipment to sweep debris into the path of a suction inlet that would then pneumatically by way of a high velocity airstream or with a mechanical pick-up system convey the debris to a collection hopper.

The sweeping and collecting devices may either be mounted to a proprietary vehicular truck chassis or incorporated into its own chassis embodiment, and the equipment can be fixed or demountable, as the case of an exchangeable bodywork system.

47) **Refuse collection vehicle** is a vehicle designed for the collection and transportation of domestic and bulky waste based on loading via containers or by hand, and it may be equipped with a compaction mechanism.

A refuse collection vehicle comprises a chassis with a cab onto which the bodywork is mounted, and it may be equipped with a container lifting device.

48) **Road-milling machine** is a mobile machine used for removing material from asphalted surfaces using a power-driven cylindrical body (drum), on which surface the milling tools are fitted; the cutter drums rotate during the cutting operation.

49) **Scarifier** is a walk-behind or ride-on powered machine which uses the ground to determine the depth of cut, and which is equipped with an assembly appropriate to slit or scratch the surface of the lawn in gardens, parks and other similar areas.

50) **Shredder/chipper** is a powered machine designed for use in a stationary position having one or more cutting devices for the purpose of reducing bulk organic materials to smaller pieces, and it generally consists of a feed intake opening through which material (which may be held by an appliance or not) is inserted, a device which cuts up the materials by whatever method (cutting, chopping, crushing or other methods) and a discharge chute through which the cut material is discharged, and it may include a collecting device.

51) **Snow-removing machine with rotating tools** is a machine with which snow can be removed from traffic areas by rotating means, accelerated and ejected by blower means.

52) **Suction vehicle** is a vehicle equipped with a device to collect water, mud, sludge, refuse or similar material from sewers or similar installations by means of a vacuum.

The device may be either mounted on a proprietary vehicular truck chassis or incorporated into its own chassis embodiment and the equipment may be fixed or demountable, as in the case of an exchangeable bodywork system.

53) **Tower crane** is a slewing jib crane with the jib located at the top of a tower which stays approximately vertical in the working position.

This power-driven appliance is equipped with means for raising and lowering suspended loads and for the movement of such loads by changing the load-lifting radius, slewing, travelling of the complete appliance.

Certain tower cranes perform several but not necessarily all of these movements and they can be installed in a fixed position or equipped with means for displacing or climbing.

54) **Trencher** is a self-propelled, ride-on or operator-controlled, crawler or wheeled machine, having a front- or rear-mounted excavator linkage and attachment, primarily designed to produce trenches in a continuous operation, through a motion of the machine.

55) **Truck mixer** is a vehicle which is equipped with a drum to transport ready-mixed concrete from the concrete mixing plant to the job site; the drum may rotate when the vehicle is driving or stand still.

The drum is emptied on the job site by rotating the drum. The drum is driven either by the driving engine of the vehicle or by a supplementary engine.

56) **Water pump unit** is a machine consisting of a water pump itself and the driving system and it is used for raising water from a lower to a higher energy level.

57) **Welding generator** is any rotary device which produces a welding current.

Permissible Sound Power Levels

Permissible sound power levels for equipment for use outdoors

Type of equipment	Net installed power in P (in kW) Electric power P_{el} ⁽¹⁾ in kW Mass of appliance m in kg Cutting width L in cm	Permissible sound power level in dB/1 pW
Compaction machines (vibrating rollers, vibratory plates, vibratory rammers)	$P \leq 8$	105
	$8 < P \leq 70$	106
	$P > 70$	$86 + 11 \lg P$
Tracked dozers, tracked loaders, tracked excavator-loaders	$P \leq 55$	103
	$P > 55$	$84 + 11 \lg P$
Wheeled dozers, wheeled loaders, wheeled excavator-loaders, dumpers, graders, loader-type landfill compactors, combustion-engine driven counterbalanced lift trucks, mobile cranes, compaction machines (non-vibrating rollers), paver-finishers, hydraulic power packs	$P \leq 55$	101
	$P > 55$	$82 + 11 \lg P$
Excavators, builders' hoists for the transport of goods, construction winches, motor hoes	$P \leq 15$	93
	$P > 15$	$80 + 11 \lg P$
Hand-held concrete-breakers and picks	$m \leq 15$	105
	$15 < m < 30$	$92 + 11 \lg m$
	$m \geq 30$	$94 + 11 \lg m$
Tower cranes		$96 + \lg P$
Welding and power generators	$P_{el} \leq 2$	$95 + \lg P_{el}$
	$2 < P_{el} \leq 10$	$96 + \lg P_{el}$
	$P_{el} > 10$	$95 + \lg P_{el}$
Compressors	$P \leq 15$	97
	$P > 15$	$95 + 2 \lg P$
Lawnmowers, lawn trimmers/lawn edge trimmers	$L \leq 50$	96
	$50 < L \leq 70$	98
	$70 < L \leq 120$	100
	$L > 120$	105

¹ P_{el} for welding generators: conventional welding current multiplied by the conventional load voltage for the lowest value of the duty factor given by the manufacturer.

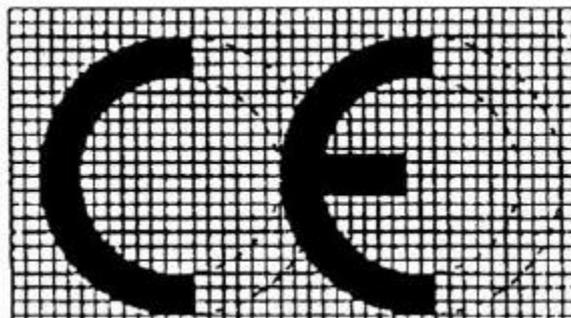
P_{el} for power generators: prime power according to ISO 8528-1:1993, point 13.3.2. The permissible sound power level shall be rounded to the nearest whole number (less than 0.5 use lower number; greater than or equal to 0.5 use higher number).

Conformity Marking and Indication of the Guaranteed Sound Power Level

A. CONFORMITY MARKING

1. The conformity marking shall be CE.

The CE conformity marking shall consist of the initials "CE" taking the following form:



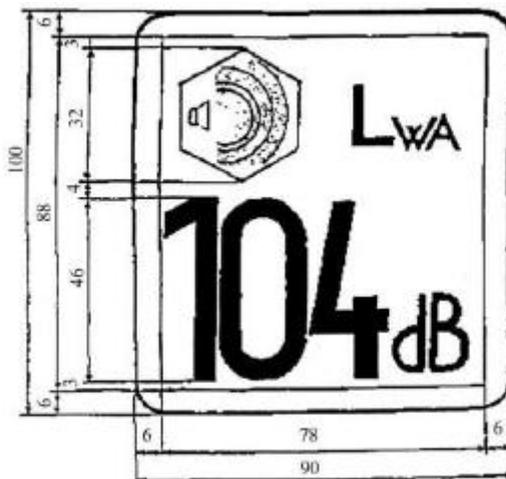
The height of CE marking shall be at least 5 mm.

If the CE marking is reduced or enlarged, the proportions given in the above drawing shall be respected.

Minimum dimensions of CE marking may be changed in case of small-dimension equipment referred to in the Article 2 hereof.

B. INDICATION OF THE GUARANTEED SOUND POWER LEVEL

The indication of the guaranteed sound power level shall consist of the single-number of the guaranteed sound power in dB, the sign L_{WA} and a pictogram taking the following form:



If the indication is reduced or enlarged according to the size of the vessel or equipment, the proportions given in the above drawing shall be respected. However, the vertical dimension of the indication shall not be less than 40 mm.

Declaration of Conformity

The declaration of conformity shall particularly contain:

- 1) the title and the seat, or the name and the address of the manufacturer or his authorized representative;
- 2) description of the vessel or equipment including the data enabling its closer identification (class, type, model etc.);
- 3) conformity assessment procedure followed, and, where appropriate, the name, the address and the registration number of the Notified body involved, or the identification number of the foreign body for conformity assessment that carried out the conformity assessment, as well as the number of the Certificate of Conformity;
- 4) measured sound power level on an equipment representative for this type;
- 5) guaranteed sound power level for the equipment;
- 6) title of the regulation against which the conformity has been assessed; this provision does not apply to imported products;
- 7) the name and the address of the person authorized for drawing up and making available the technical documentation;
- 8) the last two numbers of the year in which the conformity marking has been placed;
- 9) the place and the date of the issue of the declaration of conformity; and
- 10) the signature of the person authorized to issue the declaration of conformity on behalf of the manufacturer or his authorized representative.

Methods for Measurement of Noise Emitted by Equipment for Use Outdoors

Part A

BASIC STANDARDS

For the determination of the sound power levels of equipment referred to in the Article 2 hereof, the following standards for measuring noise emissions shall apply: MEST EN ISO 3744 (reference harmonized standard EN ISO 3744) and MEST EN ISO 3746 (reference harmonized standard EN ISO 3746:1995), subject to the following supplements:

1. Measurement uncertainty

Measurement uncertainties are not taken into account in the framework of conformity assessment in the design phase.

2. Operation of source during test

2.1. Fan speed

If the engine of the equipment or its hydraulic system is fitted with (a) fan(s), it (they) shall operate during the test. The fan speed is, in accordance with one of the following conditions, stated and set by the manufacturer of the equipment and shall appear in the test report, this speed being used in further measurements:

a) fan drive directly connected to the engine – if the fan drive is directly connected to the engine and/or hydraulic equipment (e.g. by belt drive), it shall operate during the test;

b) fan drive with several distinct speeds – if the fan can work at several distinct speeds the test shall be carried out either:

- at its maximum working speed, or

- in a first test with the fan set at zero speed and in a second test the fan set at maximum speed. The resulting sound pressure level L_{pA} shall then be calculated by combining both the test results using the following equation:

$$L_{pA} = 10 \lg \{0,3 \times 10^{0,1 L_{pA,0\%} + 0,7} \times 10^{0,1 L_{pA,100\%}}\} \text{ where:}$$

$L_{pA,0\%}$ is the sound pressure level determined with the fan set at zero speed, and $L_{pA,100\%}$ is the sound pressure level determined with the fan set at maximum speed.

c) fan drive with continuous variable speed

If the fan can work at continuous variable speed, the test shall be carried out either according to the point b) hereof or with the fan speed set by the manufacturer, at no less than 70 % of the maximum speed.

2.2. Test of powered equipment free of load

For these measurements, the engine and hydraulic system of the equipment shall be warmed up in accordance with safety instructions.

The test shall be carried out with the equipment in a stationary position, without operating the working equipment or travelling mechanism. The engine will idle at no less than the rated speed corresponding to the net power².

If the machine is powered by a generator or from the mains, the frequency of the supply current, specified for the motor by the manufacturer, shall be stable at ± 1 Hz if the machine is equipped with an induction motor, and the supply voltage at ± 1 % of the rated voltage if the machine is equipped with a commutator motor. The supply voltage is measured at the plug of a non-detachable cable or cord, or at the inlet of the machine if a detachable cable is provided. The waveform of the current supplied from the generator shall be similar to that obtained from the mains.

If the machine is powered by battery, the battery shall be fully charged.

The speed used and the corresponding net power are stated by the manufacturer of the equipment and shall appear in the test report.

If the equipment is fitted with several engines, they shall work simultaneously during the tests, and if this is not possible, each possible combination of engine(s) is to be tested.

2.3. Test of powered equipment under load

For these measurements, the engine (driving device) and hydraulic system of the equipment shall be warmed up in accordance with safety instructions. No signalling device such as a warning horn or reversing alarm is to be operated during the test.

The speed or velocity of the equipment during the test shall be recorded and appear in the test report.

If the equipment is fitted with several engines and/or aggregates, they shall work simultaneously during the tests. If this is not possible, each possible combination of engine(s) and/or aggregates is to be tested.

For each type of equipment that is to be tested under load, specific operating conditions shall be laid down which shall, in principle, produce effects and stresses similar to those encountered under actual working conditions.

2.4. Test of hand-operated equipment

Conventional operating conditions for each type of hand-operated equipment shall be laid down that produce effects and stresses similar to those undergone under actual working conditions.

3. Calculation of surface sound pressure level

The surface sound pressure level shall be determined at least three times. If at least two of the determined values do not differ by more than 1 dB, further measurements will not be necessary; otherwise the measurements shall be

² Net power means the power in "EC kW" obtained on the test bench at the end of the crankshaft, or its equivalent, measured in accordance with the EC method of measuring the power of internal combustion engines for road vehicles, except that the power of the engine cooling fan is excluded.

continued until two values differing by no more than 1 dB are obtained. A-weighted surface sound pressure level to be used for calculating the sound power level is the arithmetic mean of the two highest values that do not differ by more than 1 dB.

4. Information to be reported

The A-weighted sound power level of the source under test shall be reported to the nearest whole number (less than 0,5 use the lower number; greater than or equal to 0,5 use the higher number).

The report shall contain the technical data necessary to identify the source under test, as well as the noise test code and the acoustical data.

5. Additional microphone positions on the hemispherical measurement surface (MEST EN ISO 3744:2008)

In addition to points 7.2.1 and 7.2.2 of the standard MEST EN ISO 3744, a set of 12 microphones on the hemispherical measurement surface may be used.

The location of 12 microphone positions distributed on the surface of a hemisphere of radius r are listed in the form of Cartesian coordinates in the following table.

The radius (r) of the hemisphere shall be equal to or greater than twice the largest dimension of the reference parallelepiped.

The reference parallelepiped is defined as the smallest possible rectangular parallelepiped just enclosing the equipment (without attachments) and terminating on the reflecting plane.

The radius of the hemisphere shall be rounded to the nearest higher of the following values: 4m, 10m, 16m.

The number (12) of microphones may be reduced to six, but the microphone positions 2, 4, 6, 8, 10 and 12, following the requirements of the point 7.4.2 of the standard MEST EN ISO 3744 have to be used in any case. Generally, the arrangement with six microphone positions on a hemispherical measurement surface has to be used.

If there are other specifications laid down in a noise test code in this Rulebook for a specific equipment, these specifications shall be used.

Number of microphones	x/r	y/r	z
1	1	0	1.5m
2	0.7	0.7	1.5m
3	0	1	1.5m
4	-0.7	0.7	1.5m
5	-1	0	1.5m
6	-0.7	-0.7	1.5m
7	0	-1	1.5m
8	0.7	-0.7	1.5m
9	0.65	0.27	0.71m
10	-0.27	0.65	0.71m
11	-0.65	-0.27	0.71m
12	0.27	-0.65	0.71m

Table 1. Coordinates of the 12 microphone positions

6. Environmental correction K_{2A}

Equipment shall be measured on a reflecting surface of concrete or non-porous asphalt, then the environmental correction K_{2A} is set to $K_{2A} = 0$. If there are other specifications laid down in a noise test code of this Rulebook for a specific equipment, these specifications shall be used.

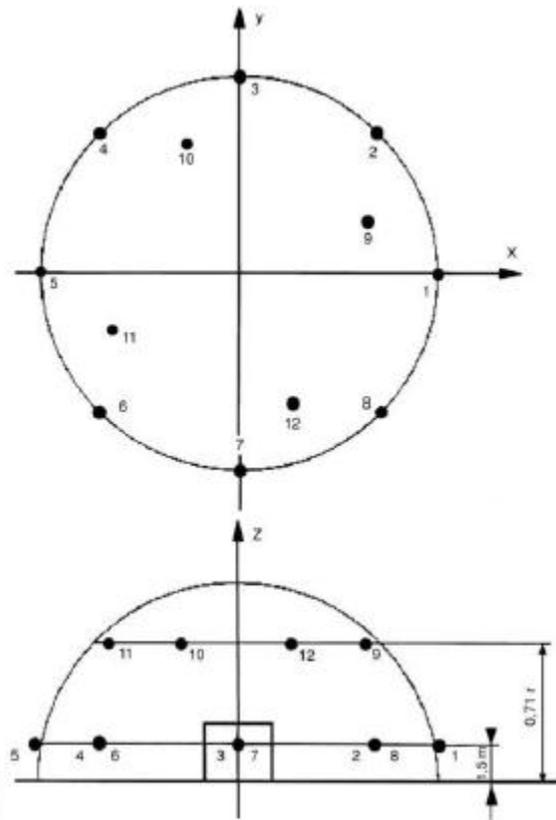


Figure 1. Additional microphone array on the hemisphere (12 microphone positions)
 Figure 2. Radius of hemisphere: r

PART B

NOISE TEST CODES FOR SPECIFIC EQUIPMENT

0. EQUIPMENT THAT IS TESTED FREE OF LOAD

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test area

Reflecting surface of concrete or non-porous asphalt

Environmental correction K_{2A}

$K_{2A} = 0$

Measurement surface/number of microphone positions/measuring distance:

1) if the largest dimension of the reference parallelepiped does not exceed 8 m hemisphere/six microphone positions according to the Part A item 5 hereof

2) if the largest dimension of the reference parallelepiped exceeds 8 m – parallelepiped according to the standard MEST EN ISO 3744 with measurement distance $d = 1$ m

Operating conditions during test

Test free of load shall be carried out according to the Part A point 2.2. hereof.

Periods of observation (determination) of resulting (final) sound power level if more than one operating condition is used, shall at least be 15 seconds.

1. Aerial access platforms with combustion engine

Shall be tested according to the point 0 hereof.

2. Brush cutters

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Tests shall be carried out according to: MEST ISO 10884.

Measurement surface/number of microphone positions/measuring distance, according to: MEST ISO 10884.

Operating conditions during test

Test under load, according to: MEST ISO 10884 point 5.3.

Period of observation, according to: MEST ISO 10884.

3. Builders' hoist for the transport of goods

Shall be tested according to the point 0 hereof.

The geometrical centre of the engine shall be positioned above the centre of the hemisphere; the lift shall move without load and leave the hemisphere – if necessary – in direction of point 1.

4. Building site band saw machines

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Measurement surface/number of microphone positions/measuring distance, according to the Annex J – ISO 7960 with $d = 1$ m.

Operating conditions during test

Test under load in accordance with the Annex J – ISO 7960 (point J2(b) only).

Period of observation in accordance with the Annex J – ISO 7960:1995.

5. Building site circular saw benches

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Measurement surface/number of microphone positions/measuring distance, according to the Annex A – ISO 7960, measurement distance $d = 1$ m.

Operating conditions during test

Test under load, according to the Annex A – ISO 7960, Annex A (point A2(b) only).

Period of observation, according to the Annex A ISO 7960.

6. Chain saws, portable

Noise emission shall be measured according to the standard MEST EN ISO 3744:2008.

Test area, according to ISO 9207:1995.

Measurement surface/number of microphone positions/measuring distance, according to ISO 9207:1995.

Operating conditions during test

Test under load/Test free of load.

Full load sawing wood/engine at maximum revolution without load:

a) combustion-engine driven: ISO 9207:1995 points 6.3 and 6.4

b) electric motor operated: a test corresponding to ISO 9207:1995 point 6.3 and a test with the motor at maximum revolution without load.

Period of observation (determination) of resulting (final) sound power level if more than one operating condition is used, according to ISO 9207:1995 points 6.3 and 6.4.

The resulting (final) sound power level L_{WA} is calculated by the equation where L_{W1} and L_{W2} are the average sound power levels of the two different modes of operation defined above.

7. Combined high pressure flushers and suction vehicles

If it is possible to operate both items of equipment simultaneously, this shall be done according to points 26 and 52 hereof. If not, they shall be measured separately and the higher values are to be stated.

8. Compaction machines

1) Non-vibrating rollers

Shall be tested according to the point 0 hereof.

2) Vibrating rollers for ride-on operators

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Mounting of equipment

The vibrating roller shall be installed on one or more appropriate elastic materials(s) such as air-cushion(s).

These air-cushions shall be made of a supple material (elastomer or similar) and shall be inflated to a pressure ensuring that the machine is elevated by at least 5 cm; resonance effects shall be avoided and the dimension of the cushion(s) shall be such that the stability of the machine under test is ensured.

Test under load

The machine shall be tested in a stationary position with the engine at rated speed (stated by the manufacturer) and the moving mechanism(s) disconnected.

The compacting mechanism shall be operated using the maximum compaction power corresponding to the combination of the highest frequency and the highest possible amplitude for that frequency as declared by the manufacturer.

The period of observation shall be at least 15 seconds.

3) Vibratory plates, vibratory rammers, explosive rammers and walk-behind vibrating rollers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Tests shall be carried out according to: Annex C-EN 500-4 rev. 1.

Operating conditions during test

Test under load, according to: Annex C-EN 500-4 rev. 1.

Period of observation, according to: Annex C-EN 500-4 rev. 1.

9. Compressors

Noise emission shall be measured according to the standard MEST EN ISO 3744:2008.

Measurement surface/number of microphone positions/measuring distance

Hemisphere/six microphone positions according to Part A point 5 hereof or parallelepiped according to the standard MEST EN ISO 3744:2008 with measurement distance $d = 1$ m.

Mounting of equipment

The compressors shall be installed on the reflecting plane; skid-mounted compressors shall be placed on a support 0,40m high, unless otherwise required by the manufacturer's conditions of installation.

Test under load

The compressor under test shall have been warmed up and be operating in stable conditions as for continuous operation.

It shall be properly serviced and lubricated as specified by the manufacturer.

The determination of the sound power level shall be made at full-load or in an operating condition that is reproducible and is representative of the noisiest operation of typical usage of the machine under test, whichever is the noisier.

Should the layout of the complete plant be such that certain components, e.g. inter-coolers are mounted away from the compressor, endeavours shall be made to separate the noise generated from such parts when performing the noise test.

Separation of the various noise sources may require special equipment for the attenuation of the noise from these sources during the measurement, and the noise characteristics and description of the operating conditions of such parts shall be given separately in the test report.

During the test, the gas exhausted from the compressor shall be piped clear of the test area, and care shall be taken to ensure the noise generated by the gas being exhausted is at least 10dB lower than the noise to be measured at all measurement locations (e.g. by the fitting of a silencer).

Care shall be taken that air discharge does not introduce any extra noise due to turbulence at the compressor discharge valve.

The period of observation shall be at least 15 seconds.

10. Concrete-breakers and picks, hand-held

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Measurement surface/number of microphone positions/measuring distance

Hemisphere/six microphone positions according to Part A point 5 hereof and according to mass of equipment as given in the following table:

Mass of equipment in kg	Radius of hemisphere	z for microphone positions 2, 4, 6 and 8
m < 10	2 m	0,75 m
m ≥ 10	4 m	1,50 m

Mounting of equipment

All appliances shall be tested in the vertical position.

If the test appliance has got an air exhaust, its axis shall be equidistant from two microphone positions, and the noise of the power supply shall not influence the measurement of the noise emission from the tested appliance.

Support of the appliance

The appliance shall be coupled during the test run to a tool embedded in a cube-shaped concrete block placed in a concrete pit, sunk into the ground.

A steel element may be inserted between the appliance and the support element during the test.

This element forms a stable structure between the appliance and the support element. (Figure 10.1 of this Part).

Block characteristics

The block shall be in the shape of a cube 0,60 m ± 2 mm long at the edge and as regular as possible; it shall be made of reinforced concrete and thoroughly vibrated in layers of up to 0,20 m to avoid excessive sedimentation.

Quality of the concrete

The quality of concrete shall correspond to the class C 50/60 of ENV 206, and the cube shall be reinforced by 8mm-diameter steel rods without ties, each rod being independent of the other, as shown in Figure 10.2 of this Part.

Supporting tool

The tool shall be sealed into the block and shall consist of a rammer of no less than 178mm or no more than 220mm diameter and a tool chuck component identical to that normally used with the appliance being tested and complying with the standard ISO 1180:1983, but sufficiently long to enable the practical test to be carried out.

Suitable treatment shall be carried out to integrate the two components.

The tool shall be fixed in the block so that the bottom of the rammer is 0,30m from the upper face of the block (see Figure 10.2 of this Part).

The block shall remain mechanically sound, particularly at the point where the supporting tool and the concrete meet.

Before and after each test, it shall be established that the tool sealed in the concrete block is integrated with it.

Positioning of the cube

The cube shall be set in a pit cemented throughout, covered by a screening slab of at least 100kg/m², as indicated in Figure 10.3, so that the upper surface of the screening slab is flush with the ground.

To avoid any parasitic noise, the block shall be insulated against the bottom and sides of the pit by elastic blocks, the cut-off frequency of which shall not be more than half the striking rate of the appliance tested, expressed as strokes per second. The opening in the screening slab through which the tool chuck component passes shall be as small as possible and sealed by a flexible sound-proof joint.

Test under load

The appliance tested shall be supported to the supporting tool.

The appliance tested shall be operated in stable conditions having the same acoustical stability as in normal service, and at the maximum power specified in the instructions supplied to the purchaser.

The period of observation shall be at least 15 seconds.

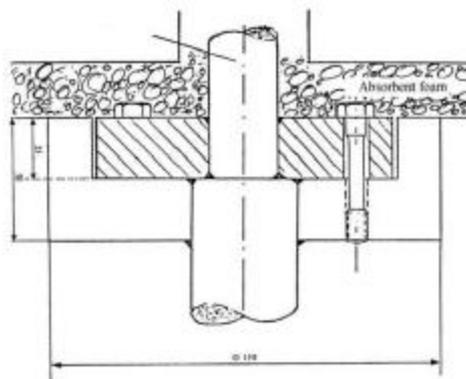


Figure 10.1. Schematic diagram of intermediate piece (Support tool, screening slab, absorbent foam, 12 traction pins, 12 K M12)

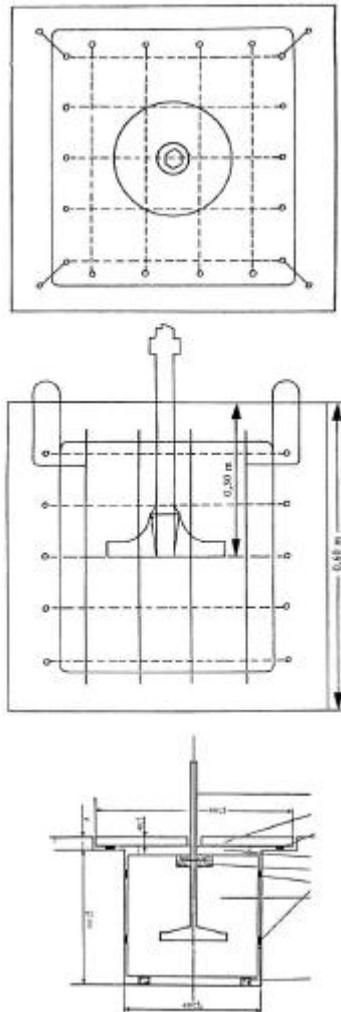


Figure 10.3. Testing device (Support tool, screening slab, elastic joint J, absorbing foam, intermediate piece, elastic joints, concrete block, elastic support)

The value A should be such that the screening slab resting on the elastic joint J is flush with the ground.

11. Concrete or mortar mixers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The mixing device (drum) shall be filled to its rated capacity with sand of granulation 0 to 3 mm, the humidity shall be 4% to 10%. The mixing device shall be operated at least at the rated speed.

The period of observation shall be at least 15 seconds.

12. Construction winches

Test shall be carried out according to the point 0 hereof.

The geometrical centre of the engine shall be positioned above the centre of the hemisphere; the winch shall be connected but no load shall be applied.

13. Conveying and spraying machines for concrete and mortar

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Operating conditions during test

If the machine is equipped with a boom, this is set upright and the pipe shall be lead back to the filler funnel (of the machine).

If the machine is not equipped with a boom, the machine shall be equipped with a horizontal pipe of at least 30m leading back to the filler funnel.

Test under load:

1) For machines conveying and spraying concrete:

The conveying system and the pipe shall be filled with a medium similar to concrete, the cement being replaced by an admixture, e.g. finest ash.

The machine shall operate at its maximum output, the period of one working cycle being not more than 5 seconds (if this period is exceeded, water shall be added to the "concrete" in order to reach this value).

2) For machines conveying and spraying mortar:

The conveying system and the pipe shall be filled with a medium similar to finishing mortar, the cement being replaced by an admixture, e.g. methyl cellulose.

The machine shall operate at its maximum output, the period of one working cycle being not more than 5 seconds (if this period is exceeded, water shall be added to the "mortar" in order to reach this value).

The period of observation shall be at least 15 seconds.

14. Conveyor belts

Test shall be carried out according to the point 0 hereof.

The geometrical centre of the engine shall be positioned above the centre of the hemisphere; the belt shall move without load and leave the hemisphere, if necessary, in the direction of point 1.

15. Cooling equipment on vehicles

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The cooling equipment shall be installed in a real or simulated cargo space and be tested in a stationary position, where the height of the cooling equipment shall be representative of the intended installation requirements according to the instructions.

The power source of the cooling equipment shall operate at the rate that causes the maximum speed of the cooling compressor and the fan specified in the instructions.

If the cooling equipment is intended to be powered by the driving engine of the vehicle, the engine shall not be used during the test, and the cooling equipment shall be connected to a suitable electrical power source.

Removable tractor units shall be removed during the test.

Cooling equipment installed in cargo-space refrigeration units which have different power sources shall be tested separately for each power source, and the test result reported shall as a minimum reflect the mode of operation which leads to the maximum noise output.

The period of observation shall be at least 15 seconds.

16. Dozers

Noise emission shall be measured according to the standard MEST EN ISO 3744:2008.

Tests of dozers shall be carried out according to the standard ISO 6395:1988.

Measurement surface/number of microphone positions/measuring distance, according to the standard ISO 6395:1988.

Mounting of equipment

Crawler dozers shall be tested on the test site corresponding to the point 6.3.3 of ISO 6395:1988.

Test under load shall be carried out according to the Annex B - ISO 6395:1988.

The period of observation and consideration of different operating conditions, if any, shall be carried out according to the Annex B - ISO 6395:1988.

17. Drill rigs

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Operating conditions during test

Test under load shall be carried out according to: EN 791:2008, Annex A (EN 791).

The period of observation shall be at least 15 seconds.

18. Dumpers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Tests of dumpers shall be carried out according to ISO 6395:1988.

Measurement surface/number of microphone positions/measuring distance, according to ISO 6395.

Operating conditions during test

Test under load, according to ISO 6395, paragraph 2 Annex C, except the point C 4.3.

When the engine operates at its maximum governed speed (high idle), the transmission control shall be set to neutral.

Bring the bucket to the tipped position (emptying) up to about 75% of its maximum movement and return it to its travelling position, this operation is repeated three times.

This sequence of events is considered to be a single cycle for the stationary hydraulic mode, and if no engine power is used to tip the bucket, the engine shall be operated at idling speed with the transmission in neutral.

The measurement shall be performed without tipping the bucket, and the period of observation shall be 15 seconds.

The period of observation (determination) of resulting sound power level if more than one operating condition is used, according to ISO 6395, Annex C.

19. Equipment for loading and unloading tanks or silos on trucks

Noise emission shall be measured according to the standard MEST EN ISO 3744:2008.

Test under load

The equipment shall be tested with the truck in a stationary position.

The engine driving the equipment shall operate at the speed that causes the maximum output of the equipment specified in the instructions.

The period of observation shall be at least 15 seconds.

20. Excavators

Noise emission shall be measured according to the standard MEST EN ISO 3744:2008.

Tests of excavators shall be carried out according to ISO 6395:1988.

Measurement surface/number of microphone positions/measuring distance, according to ISO 6395:1988.

Operating conditions during test

Test under load, according to Annex A-ISO 6395.

The period of observation (determination) of resulting (final) sound power level if more than one operating condition is used, according to the Annex A-ISO 6395.

21. Excavators-loaders

Noise emission shall be measured according to the standard MEST EN ISO 3744:2008.

Tests shall be carried out according to ISO 6395:1988.

Measurement surface/number of microphone positions/measuring distance, according to ISO 6395:1988.

Operating conditions during test

Test under load shall be carried out according to the Annex D-ISO 6395.

The period of observation (determination) of resulting sound power level if more than one operating condition is used, according to the Annex D-ISO 6395.

22. Glass recycling containers

Noise emission shall be measured according to the standard MEST EN ISO 3744:2008.

For the purpose of this noise test code the single-event sound pressure level L_{pls} , as defined in the point 3.2.2 of the standard MEST EN ISO 3744:2008.

Environmental correction K_{2A}

Measurement in the open air $K_{2A} = 0$

Measurement indoors

The value of the constant K_{2A} , determined without the artificial surface in accordance with the Annex A to the standard MEST EN ISO 3744:2008 shall be $\leq 2,0$ dB in which case K_{2A} shall be disregarded.

Operating conditions during test

The noise measurement shall be carried out during a complete cycle beginning with the empty container and completed when 120 bottles have been thrown into the container.

The glass bottles are defined as follows:

- capacity: 75 cl;
- mass: (370 ± 30) g.

The testing operator holds each bottle by its neck and with its bottom towards the filling aperture and then he pushes it gently through the filling aperture in the direction of the centre of the container, avoiding if possible the bottle hitting against the walls.

Only one filling aperture is used for throwing the bottles and it is the one nearest to microphone position 12.

The period of observation (determination) of resulting sound power level if more than operating condition is used

1. The A-weighted single-event sound pressure level is preferably simultaneously measured at the six microphone positions for each bottle thrown into the container.
2. The A-weighted single-event sound level averaged over the measurement surface is calculated according to the point 8.1 of the standard MEST EN ISO 3744:2008.
3. The A-weighted single-event sound pressure level averaged over all 120 throwings of bottles is calculated as the logarithmic mean of the A-weighted single-event sound pressure levels averaged over the measurement surface.

23. Graders

Noise emission shall be measured according to the standard MEST EN ISO 3744:2008.

Tests are carried out according to ISO 6395:1988.

Measurement surface/number of microphone positions/measuring distance, according to ISO 6395:1988.

Operating conditions during test

Test under load, according to the Annex B-ISO 6395.

The period of observation (determination) of resulting (final) sound power level if more than operating condition is used, according to the Annex B-ISO 6395.

24. Grass trimmers/grass edge trimmers

Noise emission shall be measured and tests shall be carried out according to the item 2 hereof.

The trimmer shall be positioned by a suitable device in such a way that its cutting device is above the centre of the hemisphere.

For grass trimmers, the centre of the cutting device shall be held at a distance of about 50mm above the surface. In order to accommodate the cutting blades, grass edge trimmers should be positioned as close as possible to the test surface.

25. Hedge trimmers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test shall be carried out according to ISO 11094.

In case of dispute, measurements shall be carried out in the open air on the artificial surface (point 4.1.2 of ISO 11094).

Environmental correction K_{2A}

Measurement in the open air

$K_{2A} = 0$

Measurements indoor

The value of the constant K_{2A} , determined without the artificial surface and in accordance with the Annex A to the standard MEST EN ISO 3744, shall be $\leq 2,0$ dB, in which case K_{2A} shall be disregarded.

Measurement surface/number of microphone positions/measuring distance, according to ISO 11094.

Mounting of equipment

The hedge trimmer shall be held in the natural manner for normal use either by a person or by a suitable device in such a way that its cutting device is above the centre of the hemisphere.

Test under load

The hedge trimmer shall be operated at its normal speed with the cutting device working.

The period of observation shall be at least 15 seconds.

26. High pressure flushers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The high pressure flusher shall be tested in a stationary position.

The engine and auxiliary units operate at the speed provided by the manufacturer for the operation of the working equipment; the high pressure pump(s) is (are) operating its (their) maximum speed and operating pressure provided by the manufacturer.

Using an adapted nozzle, the pressure reduction valve shall be just on the point of reacting, and the flow noise shall not have any influence on the results of the measurements.

The period of observation shall be at least 30 seconds.

27. High pressure water jet machines

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Measurement surface/number of microphone positions/measuring distance.

Parallelepiped/according to the standard MEST EN ISO 3744 with measuring distance $d = 1$ m.

Mounting of equipment

The high pressure water jet machine shall be installed on the reflecting plane; skid-mounted machines shall be placed on a support 0,40m high, unless otherwise required by the manufacturer's conditions of installation.

Test under load

The high-pressure cleaning machine shall be brought to its steady-state within the range specified by the manufacturer.

During testing the nozzle shall be coupled to the high-pressure cleaning machine that causes the highest pressure if used according to the manufacturer's instructions.

The period of observation shall be at least 15 seconds.

28. Hydraulic hammers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Measurement surface/number of microphone positions/measuring distance

Hemisphere/six microphone positions according to the Part A, point 5 hereof/ $r = 10$ m.

Mounting of the equipment

For the test, the hammer is attached to a carrier and a special test block structure shall be used. Figure 28.1 hereof gives the characteristics of this structure and Figure 28.2 hereof shows the position of the carrier.

Carrier

The carrier for the test hammer shall meet the requirements of the test hammer's technical specifications especially in weight range, hydraulic output power, supply of oil flow and return line back pressure.

Mounting

Mechanical mounting as well as connections (hoses, pipes) shall correspond to specifications given in the hammer's technical data.

All significant noise caused by pipes and various mechanical components needed for installation, ought to be eliminated, and all component connections have to be well tightened.

Hammer stability and static hold force

The hammer shall be firmly held down by the carrier in order to give the same stability as that existing under normal operating conditions, and during operation the hammer shall be held in an upright position.

Tool

A blunt tool shall be used in the measurements, and the length of the tool shall meet the requirements given in Figure 28.1 (test block) hereof.

Test under load

Hydraulic input power and oil flow

Operating conditions of the hydraulic hammer shall be appropriately adjusted, measured and reported along with the corresponding technical specification values.

The hammer under the test shall be used in such way that 90% or more of the maximum hydraulic input power and oil flow of the hammer can be reached, and the total uncertainty of the measurement chains of p_s and Q is kept within $\pm 5\%$, which assures the hydraulic input power determination within $\pm 10\%$ accuracy.

Assuming linear correlation between hydraulic input power and emitted power this would mean variation of less than $\pm 0,4$ dB in the determination of the sound power level.

Adjustable components having effect on the hammer power

Pre-settings of all accumulators, pressure central valves and other possible adjustable components shall meet the values given in technical data. If more than one fixed impact rate is optional, measurements have to be made using all settings and minimum and maximum values are presented.

Quantities to be measured

- p_s the mean value of the hydraulic supply line pressure during the hammer's operation including at least ten blows;
- Q the mean value of the breaker inlet oil flow, measured simultaneously with p_s ;
- T the oil temperature shall be between + 40°C and + 60°C during measurements.

The temperature of the hydraulic breaker body shall have been stabilised to normal operating temperature before starting the measurements;

- P_a the prefill gas pressures of all accumulators shall be measured in static situation (breaker not operating) at stable ambient temperature between + 15°C and + 25°C.

The measured ambient temperature shall be recorded with the measured accumulator prefill gas pressure.

Parameters to be evaluated from the measured operating parameters:

P_{IN} hydraulic input power of the breaker, $P_{IN} = p_s \cdot Q$

Hydraulic supply line pressure measurement, p_s

- p_s shall be measured as close to the breaker IN-port as possible;
- p_s shall be measured with a pressure gauge (minimum diameter: 100 mm; accuracy class $\pm 1,0\%$ FSO)

Breaker inlet oil flow, Q

- Q shall be measured from the supply pressure line as close to the breaker IN-port as possible;

- Q shall be measured with an electric flowmeter (accuracy class $\pm 2,5\%$ of the flow reading);

Measuring point of the oil temperature T shall be measured from the oil tank of the carrier or from the hydraulic line connected to the hammer. Measuring point shall be specified in the report.

Accuracy of the temperature reading shall lie within $\pm 2^\circ\text{C}$ of the actual value;

The period of observation (determination) of resulting sound power level shall be at least 15 seconds.

The measurements are repeated three times, or more if necessary.

The final result is calculated as the arithmetic mean of the two highest values that do not differ by more than 1 dB.

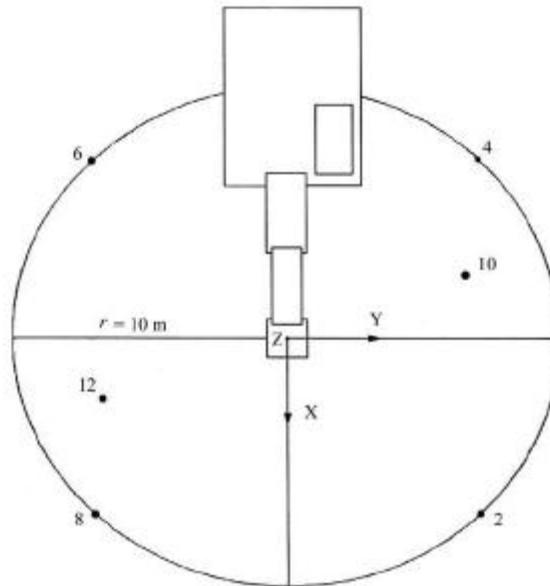


Figure 28.1

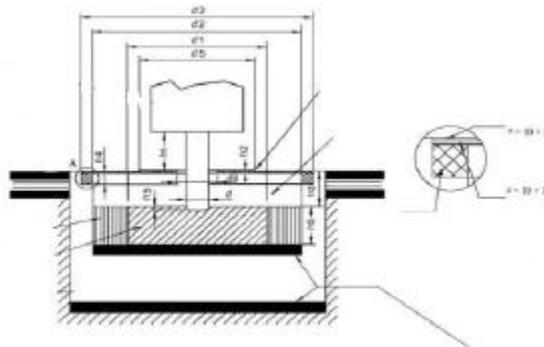


Figure 28.2 d – tool diameter (mm), d_1 – anvil diameter, (1200 ± 100) mm, d_2 – inner diameter of the anvil support structure, ≤ 1800 mm, d_3 – diameter of the test block desk, ≤ 2200 mm, d_4 – diameter of the tool opening in the deck, ≤ 350 mm, d_5 – diameter of the tool seal, ≤ 1000 mm, h_1 – visible tool length between the lowest part of the housing and tool seal upper surface (mm), $h_1 = d \pm d/2$, h_2 – tool seal thickness above the deck, ≤ 20 mm (if the tool seal is located

below the deck, its thickness is not limited; it may be made of foam rubber), h_3 – distance between deck upper surface and anvil upper surface, (250 ± 50) mm, h_4 – isolating foam rubber deck seal thickness, ≤ 30 mm, h_5 – anvil thickness, (350 ± 50) mm and h_6 – tool penetration, ≤ 50 mm

If the quadratic shape of the test block structure is used, the maximum length dimension equals $0,89$ x corresponding diameter. The empty space between the deck and the anvil can be filled with elastic foam rubber or another absorption material, density $< 220 \text{ kg/m}^3$.

29. Hydraulic power packs

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Mounting of equipment

The hydraulic power pack shall be installed on the reflecting plane; skid-mounted hydraulic power packs shall be placed on a support $0,40\text{m}$ high, unless otherwise required by the manufacturer's conditions of installation.

Test under load

During testing, no tools shall be coupled to the hydraulic power pack.

The hydraulic power pack shall be brought to its steady state within the range specified by the manufacturer.

It shall operate at its nominal speed and its nominal pressure.

The nominal speed and pressure are those appearing in the instructions.

The period of observation shall be at least 15 seconds.

30. Joint cutters

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The joint cutter shall be equipped with the largest possible blade foreseen by the manufacturer's instructions. The engine shall operate at its maximum speed, with the blade idling.

The period of observation shall be at least 15 seconds.

31. Landfill compactors

Noise emission shall be measured according to the item 37. hereof.

32. Lawnmowers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Tests are carried out according to MEST ISO 11094.

In case of dispute, measurements shall be carried out in the open air on the artificial surface (point 4.1.2 of the standard MEST ISO 11094).

Environmental correction K_{2A}

Measurement in the open air

$K_{2A} = 0$

Measurements indoors

The value of the constant K_{2A} , determined without the artificial surface and in accordance with the Annex A to the standard MEST ISO 3744 shall be $\leq 2,0$ dB, in which case K_{2A} shall be disregarded.

Measurement surface/number of microphone positions/measuring distance, according to MEST ISO 11094.

Mounting of equipment

If the wheels of the lawnmower could cause a compression of the artificial surface of more than 1 cm, the wheels shall be placed on supports so that they are level with the artificial surface before compression.

If the cutting device cannot be separated from the driving wheels of the lawnmower, the mower shall be tested on supports with the cutting device operating at its maximum speed laid down by the manufacturer, and the supports shall be made in such a way that they do not influence the measurement results.

Test free of load, according to MEST ISO 11094.

The period of observation, according to ISO 11094

33. Lawn trimmers/lawn edge trimmers

Noise emission shall be measured according to the point 32 hereof.

The trimmer shall be positioned by a suitable device in such a way that its cutting device is above the centre of the hemisphere.

For lawn trimmers, the centre of the cutting device shall be held at a distance of about 50 mm above the surface. In order to accommodate the cutting blades, lawn edge trimmers should be positioned as close as possible to the test surface.

34. Leaf blowers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Tests shall be carried out according to MEST ISO 11094.

In case of dispute, measurements shall be carried out in the open air on the artificial surface (point 4.1.2 of the standard MEST ISO 11094).

Environmental correction K_{2A}

Measurement in the open air $K_{2A} = 0$.

Measurements indoors

The value of the constant K_{2A} , determined without the artificial surface and in accordance with the Annex A to the standard MEST ISO 3744 shall be $\leq 2,0$ dB, in which case K_{2A} shall be disregarded.

Measurement surface/number of microphone positions/measuring distance, according to MEST ISO 11094.

Operating conditions during test

Mounting of equipment

The leaf blower shall be positioned in the natural manner for normal use in such a way that the outlet of its blowing device is situated (50 ± 25) mm above the centre of the hemisphere; if the leaf blower is hand-held, it shall be held either by a person or by a suitable device.

Test under load

The leaf blower shall be operated at its nominal speed and the nominal air flow stated by the manufacturer.

The period of observation shall be at least 15 seconds.³

35. Leaf collectors

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Tests shall be carried out according to MEST ISO 11094.

In case of dispute, measurements shall be carried out in the open air on the artificial surface (point 4.1.2 of the standard ISO 11094).

Environmental correction K_{2A}

Measurement in the open air $K_{2A} = 0$

Measurements indoors

The value of the constant K_{2A} , determined without the artificial surface and in accordance with the Annex A to the standard MEST ISO 3744 shall be $\leq 2,0$ dB, in which case K_{2A} shall be disregarded.

Measurement surface/number of microphone positions/measuring distance, according to ISO 11094.

Operating conditions during test

Mounting of equipment

The leaf collector shall be positioned in the natural manner for normal use in such a way that the inlet of the collecting device is situated (50 ± 25) mm above the centre of the hemisphere.

If the leaf collector is hand-held, it shall be held either by a person or by a suitable device.

Test under load

The leaf collector shall be operated at its nominal speed with the nominal air flow in the collection device stated by the manufacturer.

The period of observation shall be at least 15 seconds⁴.

36. Lift trucks

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Operating conditions during test

Safety requirements and the manufacturer's information shall be observed.

Lifting conditions

With the truck stationary, the load (non-sound absorbent material, e.g. steel or concrete; at least 70% of the actual capacity stated in the manufacturer's instruction) shall be lifted, from the lowered position, at maximum speed to the standardised lift height applicable to that type of industrial truck in accordance with the relevant Montenegrin standard in the series "Safety of Industrial Trucks".

If the actual maximum lift height is less, it may be used in individual measurements.

The lift height shall be listed in the test report.

Drive condition

Drive the truck, without load, at full acceleration from standstill over a distance of three times its length to reach line A-A (line connecting microphone positions 4 and 6), continue driving the truck at maximum acceleration to line B-B (line connecting microphone positions 2 and 8).

When the rear of the truck has crossed line B-B, the accelerator may be released.

If the truck has a multi-gear transmission, select the gear that ensures the highest possible speed over the measurement distance.

The periods of observation (determination) of resulting (final) sound power level if more than one operating condition is used, are the following:

- for lifting condition: the whole lift cycle;

- for drive condition: the time period starting when the truck's centre crosses the line A-A and ends when its centre reaches the line B-B.

The resulting sound power level for all types of lift trucks, however, is calculated by:

$L_{WA} = 10 \log (0,7 \times 10^{0,1LWAc} + 0,3 \times 10^{0,1LWAc_a})$ where subscript "c" indicates "driving mode", and subscript "a" indicates "lifting mode".

³ If a leaf blower can be also used as a leaf collector it shall be tested in both configurations, in which case the higher value shall be used

⁴ If a leaf collector can be also used as a leaf blower it shall be tested in both configurations, in which case the higher value shall be used.

37. Loaders

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Tests shall be carried out according to ISO 6395.

Measurement surface/number of microphone positions/measuring distance, according to ISO 6395.

Mounting of equipment

Crawler loaders shall be tested on the test site corresponding to the point 6.3.3 of ISO 6395.

Test under load, according to the Annex C-ISO 6395:1988.

The period of observation (determination) of resulting (final) sound power level if more than one operating condition is used, according to the Annex C-ISO 6395:1988.

38. Mobile cranes

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Mounting of equipment

If the crane is equipped with outriggers, they shall be fully extended and the crane shall be levelled on its pads in mid position of possible support height.

Test under load

The mobile crane to be tested shall be presented in its standard version as described by the manufacturer.

The engine power considered for determination noise limit is the nominal power of the engine used for the crane motion.

The crane shall be equipped with its maximum permitted counterweight mounted on the slewing structure.

Before carrying out any measurement, the engine and the hydraulic system of the mobile crane shall be brought to their normal working temperature following the instruction of the manufacturer and all relevant safety-related procedures given in the instruction handbook shall be carried out.

If the mobile crane is equipped with several engines, the engine used for the crane's function shall be run.

The carrier engine shall be turned off, if the engine of the mobile crane is fitted with a ventilator, it shall run during the test.

If the ventilator can be operated at several speeds, the test shall be carried out with the ventilator running at the highest speed.

Measurements on the mobile crane shall be carried out when:

- engine speed at $\frac{3}{4}$ of maximum speed specified for crane operation mode with a tolerance of $\pm 2\%$;
- acceleration and deceleration at the maximum value without dangerous movements of the load or the hook block;
- motions at maximum possible speed.

a) Hoisting

The mobile crane shall be loaded with a load which creates 50% of the maximum rope force. The test consists of hoisting of the load and the immediately following lowering to the starting position. The length of the boom shall be chosen so that the full test lasts 15 to 20 seconds.

b) Slewing

With the boom adjusted to an angle of 40-50° to the horizontal and without load the upper carriage shall be slewed 90° to the left immediately followed by slewing back to the starting position.

The jib shall be at its minimum length.

The observation period shall be the time needed to carry out the working cycle.

c) Derricking

The test starts with raising the short jib from the lowest working position immediately followed by the lowering of the jib to its original position.

The movement shall be executed without load and the duration of the test shall be at least 20 seconds.

d) Telescoping (if applicable)

With the jib adjusted to an angle of 40°-50° to the horizontal without load and the jib fully retracted, the telescoping cylinder for the first section only shall be extended together with the first section to its full length and immediately retracted together with the first section.

The period of observation (determination) of resulting (final) sound power level if more than one operating condition is used

The resulting sound power level is calculated by:

1) if telescoping is applicable:

$$L_{WA} = 10 \log (0,4 \times 10^{0,1L_{WAa}} + 0,25 \times 10^{0,1L_{WAb}} + 0,25 \times 10^{0,1L_{WAc}} + 0,1 \times 100,1^{L_{WAd}})$$

2) if telescoping is not applicable:

$$L_{WA} = 10 \log (0,4 \times 10^{0,1L_{WAa}} + 0,3 \times 10^{0,1L_{WAb}} + 0,3 \times 10^{0,1L_{WAc}})$$

Where:

L_{WAa} is the sound power level for the hoisting cycle;

L_{WAb} is the sound power level for the slewing cycle;

L_{WAc} is the sound power level for the derricking cycle

L_{WAd} is the sound power level for the telescoping cycle (if available).

39. Mobile waste containers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test area:

- reflecting surface of concrete or non-porous asphalt;
- laboratory room which provides a free field over a reflecting plane.

Environmental correction K_{2A}

Measurement in the open air $K_{2A} = 0$

Measurements indoors

The value of the constant K_{2A} , determined without the artificial surface and in accordance with the Annex A to the standard MEST ISO 3744 shall be $\leq 2,0$ dB, in which case K_{2A} shall be disregarded.

Measurement surface/number of microphone positions/measuring distance

Hemisphere/six microphone positions according to Part A item 5 hereof/ $r = 3$ m

Operating conditions during test

All the measurements shall be carried out with an empty container.

Test no. 1: Free shutting down of the lid along the container body

To minimise his influence on the measurements, the operator shall stand at the back side of the container (hinge side).

The lid shall be released by its middle, to prevent warping during its fall.

The measurement is carried out during the following cycle, repeated 20 times:

- initially, the lid is raised vertically;

- the lid is released forward, if possible without giving an impulse, with the operator at the back of the container, unmoving until the lid is shut;

- after complete shutting, the lid is raised to its initial position.

Note: If necessary the operator can move temporarily to raise the lid.

Test no. 2: Complete opening of the lid

To minimise his influence on the measurements, the operator shall stand at the back side of the container (hinge side) for the four-wheel containers, or on the right side of the container (between microphone positions 10 and 12) for the two-wheel containers.

The lid shall be released by its middle or as near as possible to its middle.

To prevent any moving of the container, wheels shall be locked during the test. For the two-wheel containers, and to prevent any bounce of the container, the operator can maintain it by placing his hand on the top rim.

The measurement is carried out during the following cycle:

- initially, the lid is opened horizontally;

- the lid is released without having an impulse;

- after complete opening, and before a possible rebound, the lid is raised to its initial position.

Test no. 3: Rolling of the container over an artificial irregular track

For this test, an artificial test track, simulating irregular ground is used. This test track consists of two parallel strips of steel mesh (6 m long and 400 mm wide), fastened in the reflecting plane approximately every 20 cm. The distance between the two strips is adapted according to the type of container, in order to allow the wheels to roll all over the whole length of the track.

The mounting conditions shall ensure a flat surface.

If necessary, the track is fastened on the ground with resilient material to avoid emission of parasitic noise⁵.

An example of adequate track is given in Figures 39.1 and 39.2 hereof.

The operator is situated at the lid hinge side.

The measurement is carried out while the operator draws the container along the artificial track, with a constant speed of approximately 1 m/s, between points A and B (4,24 m distance – see Figure 39.3 hereof) when the wheel axle, for a 2-wheel container, or the first wheel axle for a 4-wheel container, reaches point A or point B.

This procedure is repeated three times in each direction.

During the test, for a 2-wheel container, the angle between the container and the track shall be 45°.

For a 4-wheel container, the operator shall ensure an appropriate contact of all the wheels with the track.

Period(s) of observation/determination of resulting sound power level if more than one operating condition is used.

Test nos. 1 and 2: Free shutting down of the lid along the container body and complete opening of the lid, if possible, the measurements are carried out simultaneously at the six microphone positions.

Otherwise, the sound levels measured at each microphone position will be classified in increasing order and the sound power levels are calculated by associating the values at each microphone position according to their row. The A-weighted single-event sound pressure level is measured for each of the 20 shuttings and the 20 openings of the lid at each measurement point.

The sound power levels $L_{WAshutting}$ and $L_{WAopening}$ are calculated from the quadratic mean of the five highest values among those obtained.

Test no. 3: Rolling the container over and artificial irregular track, and the period of observation T shall be equal to the duration necessary to cover the distance between point A and point B on the track.

The sound power level $L_{WArolling}$ is equal to the mean of six values differing by less than 2 dB.

If this criterion is not fulfilled with six measurements, the cycle is repeated as far as necessary.

The resulting (final) sound power level is calculated by:

$$L_{WA} = 10 \log \frac{1}{3} (10^{0,1L_{WAshutting}} + 100,1^{L_{WAopening}} + 10^{0,1L_{WArolling}})$$

⁵ Every strip can be composed of several 400 mm wide elements fitted together.

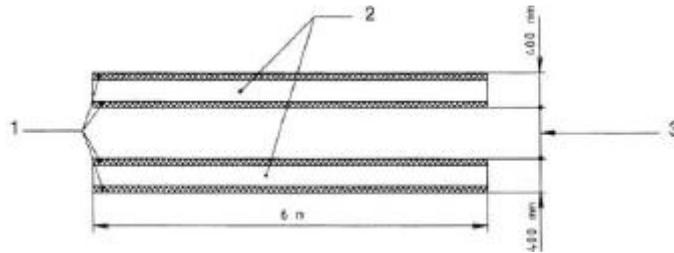


Figure 39.1 Drawing of the rolling track (1. Wooden wire mesh cleat 2. rolling parts 3. adjusted to the container)

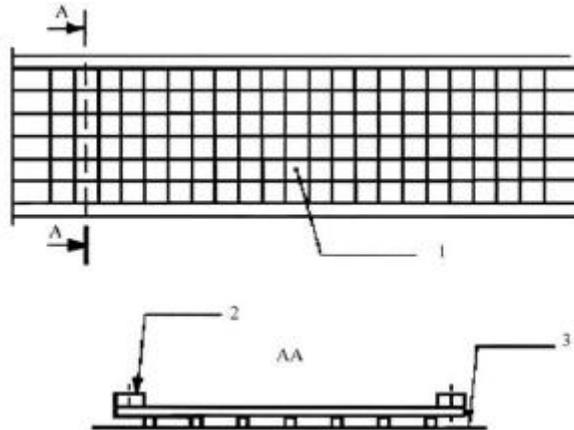


Figure 39.2 Detail of construction and mounting of the rolling track (1. rigid steel thread (4 mm) 2. wooden wire mesh cleat (20 mm x 25 mm) mesh of net (50 mm x 50 mm) 3. reflecting plane)

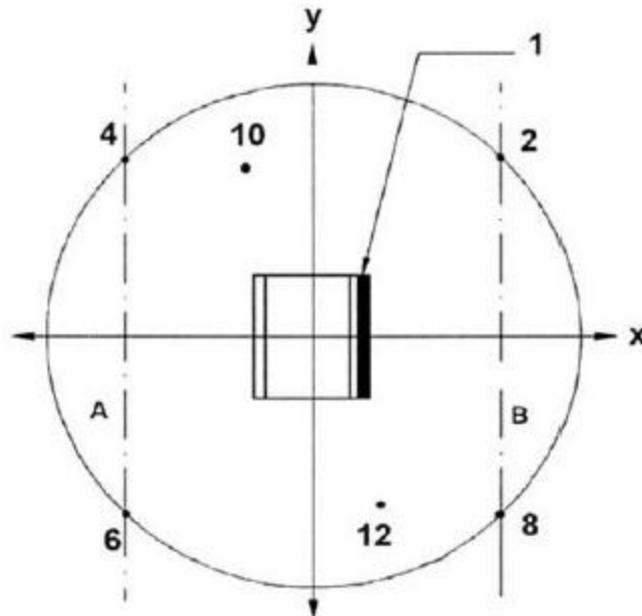


Figure 39.3 Measurement distance (1. hinge)

40. Motor hoes

Noise emission shall be measured according to the item 32 hereof.
The tool shall be disconnected during measurement.

41. Paver-finishers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The engine of the machine shall operate at the nominal speed indicated by the manufacturer. All working units shall be activated and operate at the following speeds:

1. conveying system: at least 10% of maximum value
2. spreading system: at least 40% of maximum value

3. tamper (speed, stroke): at least 50% of maximum value
 4. vibrators (speed, unbalance moment): at least 50% of maximum value
 5. pressure bars (frequency, pressure): at least 50% of maximum value
- The period of observation shall be at least 15 seconds.

42. Piling equipment

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test area, according to MEST ISO 6395.

Test under load

The piling equipment is installed at the top of a pile which has sufficient resistance in the ground to allow the equipment to work at a steady speed.

In the case of impact hammers, the cap shall be supplied with a new, wooden filling. The head of the pile is 0,50 m above the test area.

The period of observation shall be at least 15 seconds.

43. Pipelayers

Noise emission shall be measured according to the point 0 hereof.

44. Piste caterpillars

Noise emission shall be measured according to the point 0 hereof.

45. Power generators

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Environmental correction K_{2A}

Measurement in the open air $K_{2A} = 0$

Measurement indoors

The value of the constant K_{2A} , determined without the artificial surface in accordance with the Annex A to the standard MEST EN ISO 3744:2008 shall be $\leq 2,0$ dB in which case K_{2A} shall be disregarded.

Measurement surface/number of microphone positions/measuring distance

Hemisphere/6 microphone positions according to the Part A item 5 hereof/according to the Part A item 5 hereof.

If $l > 2$ m: a parallelepiped according to the standard MEST EN ISO 3744 may be used with measuring distance $d = 1$ m.

Mounting of equipment

The power generators shall be installed on the reflecting plane; skid-mounted power generators shall be placed on a support 0,40m high, unless otherwise required by the manufacturer's conditions of installation.

Test under load, according to MEST ISO 8528-10, point 9.

The period of observation shall be at least 15 seconds.

46. Power sweepers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The power sweeper shall be tested in a stationary position.

The engine and auxiliary units operate at the speed provided by the manufacturer for the operation of the working equipment; the broom operates at its highest speed, it is not in contact with the ground; the suction system shall work at its maximum suction power with the distance between ground and mouth of the suction system not exceeding 25 mm.

The period of observation shall be at least 15 seconds.

47. Refuse collection vehicles

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The refuse vehicle shall be tested in a stationary position for the following operating conditions:

1. The engine is running at maximum speed provided by the manufacturer. The equipment shall not be running. This test is not carried out for vehicles with electrical supply only.

2. The compaction system is running.

The refuse collection vehicle and the hopper receiving the waste are empty.

If the engine speed is automatically accelerated when the compaction system is running, this value shall be measured, and if the measured value is lower than the speed provided by the manufacturer by more than 5% the test is carried out with the engine accelerated by the cab accelerator, to ensure the engine speed provided by the manufacturer.

If the engine speed for the compaction system is not provided by the manufacturer or if the vehicle is not provided with an automatic accelerator, then the engine speed, issued by the cab accelerator shall be 1200 rpm.

3. The lifting device is running up and down, without load and without container.

The engine speed is obtained and controlled as for the compaction system running (point 2 of this Part).

4. Material is falling into the refuse collection vehicle.

Materials are emptied in bulk with the lifting device into the hopper (initially empty), for which a two-wheeled container with a 240l capacity, complying with the standard EN 840-1 shall be used.

If the lifting device is not able to pick up such a container, a container with the capacity close to 240l shall be used.

The material shall consist of 30 tubes of PVC, each with a 0,4 kg approximate mass and with the following dimensions:

- length: 150 mm \pm 0,5 mm;

- nominal external diameter: 90 mm + 0,3/- 0 mm;
- nominal wall depth: 6,7 mm + 0,9/- 0 mm;

The period of observation (determination) of resulting sound power level if more than one operating condition is used.

The period of observation shall be:

1. at least 15 seconds. The resulting sound power level shall be L_{WA1} ;
2. at least three complete cycles, if the compaction system is running automatically. If the compaction system is not running automatically, but cycle by cycle, measurements are carried out at least during three cycles. The resulting sound power level (L_{WA2}) shall be the root mean square value of the three (or more) measurements;
3. at least three continuous complete work-cycles, including the entirety of lifting device up and lifting device down. The resulting sound power level (L_{WA3}) shall be the root mean square value of the three (or more) measurements;
4. at least three complete work-cycles, each including the falling of 30 tubes into the hopper. Each cycle shall not exceed five seconds. For these measurements, $L_{pAeq,T}$ is replaced by $L_{pA,1s}$. The resulting sound power level (L_{WA4}) shall be the root mean square value of the three (or more) measurements.

The resulting sound power level is calculated by:

$$L_{WA} = 10 \log (0,06 \times 10^{0,1L_{WA1}} + 0,53 \times 10^{0,1L_{WA2}} + 0,4 \times 10^{0,1L_{WA3}} + 0,01 \times 10^{0,1L_{WA4}})^6$$

48. Road milling machines

Noise emission shall be measured according to the standard MEST EN ISO 3744:2008.

Operating conditions during test

Mounting of equipment

The longitudinal axis of the road milling machine shall be parallel to the y-axis.

Test under load

The road milling machine shall be brought to its steady state within the range specified in the manufacturer's instructions.

The engine and all attachments shall be running at their respective rated speeds in the idling mode.

The period of observation shall be at least 15 seconds.

49. Scarifiers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test area, according to ISO 11094.

In case of dispute, measurements shall be carried out in the open air on the artificial surface (Point 4.1.2 of the standard ISO 11094).

Environmental correction K_{2A}

Measurement in the open air $K_{2A} = 0$

Measurement indoors

The value of the constant K_{2A} , determined without the artificial surface in accordance with the Annex A to the standard MEST EN ISO 3744:2008 shall be $\leq 2,0$ dB in which case K_{2A} shall be disregarded.

Measurement surface/number of microphone positions/measuring distance, according to ISO 11094.

Test under load

The scarifier shall be operated with the engine at its nominal speed and its working device idling (operating, but not ripping).

The period of observation shall be at least 15 seconds.

50. Shredders/chippers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test area, according to ISO 11094.

Environmental correction K_{2A}

Measurement in the open air $K_{2A} = 0$

Measurement indoors

The value of the constant K_{2A} , determined without the artificial surface in accordance with the Annex A to the standard MEST EN ISO 3744:2008 shall be $\leq 2,0$ dB in which case K_{2A} shall be disregarded.

Measurement surface/number of microphone positions/measuring distance, according to ISO 11094:1991

Test under load

The shredder/chipper shall be tested chipping one or more pieces of wood.

The work-cycle consists of chipping a round piece of wood (dry pine or plywood) of at least 1,5m length, that is sharpened at one end and has a diameter approximately equal to the maximum that the shredder/chipper is designed to accept specified in the instructions.

Period of observation/determination of resulting sound power level

The period of observation shall end when there is no more material in the chipping area, but it shall not exceed 20 seconds. If both operation conditions are possible, the higher sound power level has to be given.

51. Snow removing machines with rotating tools

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The snow blower shall be tested in a stationary position.

The snow blower shall, according to the manufacturer's recommendations, operate with the working equipment at its maximum speed and the engine at the corresponding speed.

⁶ In the case of a refuse collection vehicle only electrically supplied, the coefficient associated to L_{WA1} is assumed to be equal to 0.

The period of observation shall be at least 15 seconds.

52. Suction vehicles

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The suction vehicle shall be tested in a stationary position.

The engine and auxiliary units operate at the speed provided by the manufacturer for the operation of the working equipment; the vacuum pump(s) is (are) operating at its (their) maximum speed provided by the manufacturer.

The suction equipment is operated in such a way that the internal pressure is equal to atmospheric pressure (vacuum 0%).

The flow noise of the suction nozzle shall not have any influence on the results of the measurements.

The period of observation shall be at least 15 seconds.

53. Tower cranes

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Measurements at ground-level

Hemisphere/6 microphone positions according to the Part A point 5 hereof/according to the Part A point 5 hereof.

Measurements carried out at jib-height

Where the lifting mechanism is located at the jib-height, the measurement surface shall be a sphere of 4m radius, the centre of which shall coincide with the geometrical centre of the winch.

Where the measurement is carried out with the lifting mechanism on the jib stay of the crane, the area of measurement surface is a sphere; S is equal to 200 m².

The microphone positions shall be as follows (see Figure 53.1 hereof).

Four microphone positions on a horizontal plane passing through the geometric centre of the mechanism ($H = h/2$) with $L = 2,80$ m, $d = 2,80 - l/2$, $L =$ half-distance between two consecutive microphone positions, $l =$ length of mechanism (along axis of jib), $b =$ width of mechanism, $h =$ height of mechanism, $d =$ distance between microphone support and mechanism in direction of jib.

The other two microphone positions shall be located at the points of intersection of the sphere and the vertical line passing through the geometric centre of the mechanism.

Measurement of lifting mechanism

The lifting mechanism during the test shall be mounted in one of the following ways (the exact position shall be described in the test report):

- a) lifting mechanism at ground level – the mounted crane shall be placed on a flat reflecting surface of concrete or non-porous asphalt;
- b) lifting mechanism on the jib stay – the lifting mechanism shall be at least 12m above the ground;
- c) lifting mechanism fixed to the ground – the lifting mechanism shall be fixed to a flat reflecting surface of concrete or non-porous asphalt.

Measurement of the energy generator

Where the energy generator is attached to the crane, whether or not it is linked to the lifting mechanism, the crane should be mounted on a flat reflecting surface of concrete or non-porous asphalt.

Where the lifting mechanism is situated on the jib stay, the noise measurement may be carried out with the mechanism either mounted on the jib stay or fixed to the ground.

Where the energy source powering the crane is independent from it (electrical power generator or mains, or hydraulic or pneumatic power source), only the noise level of the mechanism winch will be measured.

Where the energy generator is attached to the crane, the energy generator and the lifting mechanism shall be measured separately if they are not combined.

Where these two devices are combined, the measurement shall refer to the whole assembly.

During the test the lifting mechanism and the energy generator shall be installed and used in accordance with the manufacturer's instructions.

Test free of load

The energy generator incorporated in the crane shall operate at the full power rating indicated by the manufacturer.

The lifting mechanism shall operate free of load, with its drum turning at the rotation speed corresponding to the maximum hook-displacement speed, in the raising and lowering modes.

This speed shall be specified by the manufacturer. The greater of the two sound power levels (raising or lowering) shall be used for the results of the test.

Test under load

The energy generator incorporated in the crane shall operate at the full power rating indicated by the manufacturer.

The lifting mechanism shall operate with a cable tension at the drum corresponding to the maximum load (for the minimum radius) with the hook moving at the maximum speed.

The load and speed figures shall be specified by the manufacturer. The speed shall be checked during the test.

The period of observation (determination) of resulting (final) sound power level if more than one operating condition is used

For the measurement of the sound pressure level of the lifting mechanism, the measuring period shall be ($t_r + t_f$) seconds:

1. t_r being the period in seconds prior to activation of the brake, with the lifting mechanism operating in the manner specified above. For the purpose of the test $t_r = 3$ seconds;
2. t_f being the period in seconds between the moment when the brake is activated and that when the hook comes to a complete standstill.

If an integrator is used, the integration period shall be equal to $(t_r + t_f)$ seconds.

The root mean square value at a microphone position "i" shall be given by:

$L_{pi} = 10 \lg [(t_r 10^{0,1L_{ri}} + t_f 10^{0,1L_{fi}})/(t_r + t_f)]$ L_{pi} being the sound pressure level at microphone position "i" during period t_r and L_{fi} being the sound pressure level at microphone position "i" during breaking period t_f .

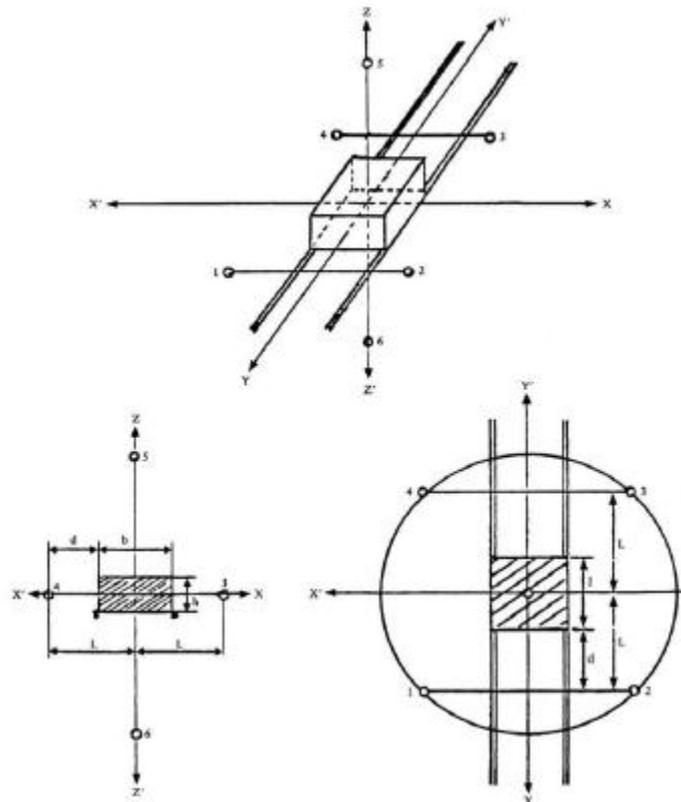


Figure 53.1. Arrangement of microphone positions where the lifting mechanism is located on the jib stay

54. Trenchers

Noise emission shall be measured according to the point 0 hereof.

55. Truck mixers

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Test under load

The truck mixer shall be tested in a stationary position.

The drum is filled with concrete of medium consistency (propagation measure 42 to 47 cm) complying to the rated capacity.

The engine driving the drum shall operate at the speed that causes the maximum speed of the drum specified in the instructions.

The period of observation shall be at least 15 seconds.

56. Water pump units

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Measurement surface/number of microphone positions/measuring distance

Parallelepiped/according to the standard MEST EN ISO 3744 with measurement distance $d = 1$ m.

Mounting of equipment

The water pump unit shall be installed on the reflecting plane; skid-mounted water pump units shall be placed on a support 0,40 m high, unless otherwise required by the manufacturer's conditions of installation.

Test under load

The engine shall operate at the point of best efficiency given in the manufacturer's instructions.

The period of observation shall be at least 15 seconds.

57. Welding generators

Noise emission shall be measured according to the standard MEST EN ISO 3744.

Environmental correction K_{2A}

Measurement in the open air $K_{2A} = 0$

Measurement indoors

The value of the constant K_{2A} , determined in accordance with the Annex A to the standard MEST EN ISO 3744:2008 shall be $\leq 2,0$ dB in which case K_{2A} shall be disregarded.

Measurement surface/number of microphone positions/measuring distance

Hemisphere/6 microphone positions according to the Part A item 5 hereof.

If $l > 2$ m: a parallelepiped according to the standard MEST EN ISO 3744 may be used with measuring distance $d = 1$ m.

Mounting of equipment

The welding generators shall be installed on the reflecting plane; skid-mounted welding generators shall be placed on a support 0,40m high, unless otherwise required by the manufacturer's conditions on installation.

Test under load, according to ISO 8528-10:1998, point 9.

The period of observation shall be at least 15 seconds.

Internal control of production

1) Internal control of production means the procedure of conformity assessment for the equipment with technical requirements, carried out by the manufacturer.

2) Technical documentation for equipment is drawn up by the manufacturer.

Technical documentation shall contain the following information:

- the name and the address of the manufacturer or his authorized representative;
- the name of the type and the model of equipment, including, if appropriate, its trade name;
- a description of the equipment, as well as the technical data for the identification of the equipment and the assessment of its noise emission, including, if appropriate, schematic drawings and any other description and explanation necessary for their understanding;
- the technical instruments applied and the results of the evaluation of the uncertainties due to production variation and their relation to the guaranteed sound power level;
- the technical reports of noise measurements that have been published.

3) Production

The manufacturer shall take all measures necessary in order that the manufacturing process and internal control ensure continuing compliance of the manufactured equipment with the technical documentation for such equipment.

4) Compliance marking and Declaration of Conformity

4.1. The manufacturer shall affix the conformity marking and the indication of the guaranteed sound power level on each piece of equipment that meets technical requirements.

4.2. The manufacturer shall draw up the Declaration of Conformity for equipment in accordance with the Article 10 hereof and shall keep it together with the technical documentation for a period ending at least ten years after the last product has been manufactured.

Internal control of production with assessment of technical documentation and periodical checking

1) Internal control of production with assessment of technical documentation and periodical checking is the procedure of conformity assessment of the equipment with technical requirements.

2) Evaluation by the Notified body

2.1. Evaluation prior to placing on the market

The manufacturer shall present a copy of his technical documentation to a Notified body of his choice before the first item of equipment is placed on the market and/or put into service.

If there are doubts about the plausibility of the technical documentation, the Notified body shall inform accordingly the manufacturer or his authorized representative and, if need be, carry out, or have carried out modifications to the technical documentation, or possibly, tests deemed necessary, and if the technical documentation satisfies the requirements stipulated by this Rulebook, the Notified body shall draw up the report confirming the compliance of the technical documentation.

2.2. Evaluation of equipment during manufacture

The manufacturer shall engage the Notified body to check-control equipment in the production phase:

a) the Notified body shall carry out periodical checks in order to verify continuing compliance of the manufactured equipment with the technical documentation and with the requirements stipulated by this Rulebook; in particular the Notified body shall check the following:

- the correct and complete marking of the equipment according to this Rulebook;
- the Declaration of conformity being drawn up in accordance with this Rulebook;
- the technical instruments applied and the results of the evaluation of the uncertainties due to production variation and their relation to the guaranteed sound power level.

The manufacturer shall give the Notified body free access to all the internal documentation supporting these procedures, the actual results of the internal audits and the corrective actions which have been taken, if any.

In case that the above checks by the Notified body give unsatisfactory results, noise tests shall be carried out, in accordance with the Annex 5 hereof.

b) the Notified body shall carry out product checks at random intervals. An adequate sample of the final equipment, chosen by the Notified body, shall be examined and appropriate noise tests shall be carried out, in accordance with the Annex 5 hereof. The equipment checking shall include the following aspects:

- the correct and complete marking of the equipment according to this Rulebook;
- issuing of the Declaration of conformity according to this Rulebook.

The frequency of the checks shall be defined by the Notified body according to the results of previous evaluations, the need to monitor corrective actions and further guidance for the frequency of the checks that may be given by the yearly production and the general reliability of the manufacturer to maintain the guaranteed values.

By rule, a check shall be carried out at least once every three years.

If there are doubts about the plausibility of the technical documentation or the adherence during production, the Notified body shall inform accordingly the manufacturer.

In those cases where equipment checked does not conform to the provisions of this Rulebook, the Notified body shall inform the competent state administration bodies.

Unit verification

1) The manufacturer shall lodge the application for a unit verification of vessel or equipment to only one Notified body of his choice.

The application referred to in the paragraph 1 hereof, shall include:

- the title and the seat, or the name and the address of the manufacturer, and if the application is lodged by the authorised representative, his business name, or the name and address;
- a written declaration that the same application has not been lodged with any other Notified body;
- a technical documentation for the equipment;
- general description of the equipment, as well as the technical data relevant for the identification of the equipment and the assessment of its noise emission, including, if appropriate, schematic drawings and any description and explanation necessary for their understanding;
- the name of the type and the model of equipment, including its trade name, as well as its serial number, or any other appropriate number under which the equipment has been manufactured, in case of non-serial production.

2) Production

The manufacturer shall undertake any measure necessary to ensure that the production process and its control of manufactured equipment comply with requirements stipulated by this Rulebook.

3) Verification

3.1. The Notified body chosen by the manufacturer shall:

- examine whether the equipment has been manufactured in conformity with the technical documentation;
- agree with the applicant the location where, in accordance with this Rulebook, the noise tests will be carried out;
- carry out or have carried out the necessary noise tests, with the purpose of conformity assessment of the equipment with the requirements stipulated by this Rulebook.

3.2. Where the equipment meets the provisions of this Rulebook, the Notified body shall issue a certificate of conformity.

If the Notified body refuses to issue the certificate of conformity, it shall state the detailed grounds for the refusal.

4) Conformity marking and Declaration of conformity

4.1. The manufacturer shall affix the conformity marking and the indication of the guaranteed sound power level on each piece of equipment that meets the requirements stipulated by this Rulebook.

Full quality assurance

1) Conformity based on a full quality assurance of production process means the procedure of conformity assessment of the manufacturer with quality assurance requirements.

2) Production

The manufacturer shall operate an approved quality assurance system for design, manufacture and final product inspection and shall be subject to surveillance of the Notified body.

3) Quality assurance system

3.1. The application referred to in the paragraph 1 hereof shall include:

1) the title and the seat, or the name and the address of the manufacturer, and if the application is lodged by the authorised representative, his business name, or the name and address;

2) a written declaration that the same application has not been lodged with any other Notified body;

3) the documentation relevant for the quality assurance system;

4) any relevant information on vessels or the respective type of equipment;

5) the technical documentation relevant for each model of the respective type of equipment, including:

- general description of the equipment, as well as the technical data relevant for the identification of the equipment and the assessment of noise emission, including, if appropriate, schematic drawings and any description and explanation necessary for their understanding;

- the technical instruments applied and the results of the evaluation of the uncertainties due to production variation and their relation to the guaranteed sound power level;

- the technical reports of noise measurements published in accordance with requirements stipulated by this Rulebook.

3.2. The quality assurance system shall ensure compliance of the vessel or equipment with corresponding requirements stipulated by this Rulebook.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic and orderly manner in the form of written policies, procedures and instructions. The quality assurance system documentation shall permit a common understanding of the quality policies and procedures such as quality programmes, plans, manuals and records.

The quality assurance system documentation shall contain in particular an adequate description of:

- the quality objectives and the organizational structure, responsibilities and powers of the management with regard to design and product quality;

- the technical documentation to be drawn up for each product, containing at least the information indicated in point 3.1. for the technical documentations mentioned here;

- the corresponding manufacturing, quality control and quality assurance techniques, processes and systematic actions that will be used in relation to design, manufacture, quality control and quality assurance;

- the examinations and test that will be carried out before, during and after manufacture, and the frequency with which they will be carried out;

- the quality records, such as inspection reports and test data, calibration data, qualification reports of the personnel concerned, etc;

- the means to monitor the achievement of the required design and product quality and the effective operation of the quality assurance system.

3.3. The Notified body shall assess the quality assurance system to determine whether it satisfies the requirements referred to in point 3.2. hereof. The Notified body shall presume conformity with these requirements in respect of quality assurance systems that implement MEST EN ISO 9001, for the purpose of assessment of compliance with requirements referred to in the point 3.2. hereof.

The auditing team of the Notifying body, beside the experience in the field of quality assurance system, shall have at least one member with experience in the field of respective equipment and applied technology, as well as the knowledge of applicable requirements stipulated in this Rulebook.

The assessment procedure includes a visit by the auditing team to the manufacturer's premises for auditing purposes, as well as the control of documentation referred to in the point 3.1. hereof, to determine the capability of the manufacturer to identify relevant requirements stipulated by this Rulebook and to carry out necessary examinations and tests to ensure the compliance of the equipment with such requirements.

The decision on quality assurance system shall be notified to the manufacturer; the notification shall contain the conclusions of the auditing team and the reasoned assessment decision.

3.4. The manufacturer shall undertake to fulfil the obligations arising out of the approved quality assurance system and to maintain it in an adequate and efficient manner.

3.5. The manufacturer shall inform the Notified body that has approved the quality assurance system about any intended updating of the quality assurance system.

The Notified body shall evaluate the modifications proposed and decide whether the modified quality assurance system will satisfy the requirements referred to in the point 3.2. hereof or whether a reassessment is required.

The Notified body shall notify its decision to the manufacturer.

The notification shall contain the conclusions of the auditing team and the reasoned assessment decision.

4) Surveillance of the approved quality assurance system by the Notified body

4.1. The purpose of the surveillance is to make sure that the manufacturer duly fulfils the obligations arising out of the approved quality assurance system.

4.2. The manufacturer shall allow the Notified body entrance for inspection purposes to the locations of design, manufacture, inspection and testing, and storage and shall provide it with all necessary information, in particular:

- the quality assurance system documentation;
- the quality records as foreseen by the design part of the quality assurance system, such as results of analyses, calculations, tests, etc.;
- the quality records as foreseen by the manufacturing part of the quality assurance system, such as inspection reports and test data, calibration data, qualification reports of the personnel concerned, etc.

4.3. The Notified body shall periodically carry out audits, in the form of control visits by the auditing team, to make sure that the manufacturer maintains and applies the quality assurance system and shall provide an audit report to the manufacturer.

4.4 The Notified body may also pay unexpected visits to the manufacturer, during which the Notified body may carry out, or cause to be carried out, tests to verify that the quality assurance system is functioning correctly, if necessary.

The Notified body shall provide the manufacturer with a visit report and, if a test has taken place, with a test report.

5) The Notified body shall inform the competent ministry by which it was appointed about issued or withdrawn quality assurance system approvals, as well as about any quality lists it refused to issue, withdrew, suspended or in any other way limited.

The Notified body shall give the other Notified bodies the relevant information concerning the quality assurance system approvals it refused to issue, withdrew, suspended or in any other way limited, and also, at their request, concerning quality assurance system approvals that it has issued.

Requirements to be met by the body for conformity assessment

1) The body for conformity assessment shall be a legal entity registered at the Central Register of Business Entities.

2) The competences of the body for conformity assessment shall be evidenced by the Certificate of Accreditation in accordance with the law.

3) The body for conformity assessment (its director, or executive directors or members of the executive board of directors or members of the auditing body or similar of such body, as well as the persons employed or otherwise engaged) (hereinafter referred to as: the "staff") may be neither the designer, builder, supplier or installer of the equipment tested, examined or checked by the body, nor the authorised representatives of any of those parties.

The staff may not be involved, neither directly nor as authorised representatives, in the design, construction, trade, marketing or maintenance of such equipment, which does not preclude the possibility to exchange technical information between the manufacturer and the body for conformity assessment.

The body for conformity assessment shall not carry out the activities influencing the judgment and integrity of the staff in relation to procedures of conformity assessment for which they were appointed, in particular the provision of consulting services.

The body for conformity assessment shall ensure that the activities of its subsidiaries or subcontractors does not jeopardise confidentiality, objectivity and impartiality in the implementation of activities related to conformity assessment.

4) The body for conformity assessment and its staff shall carry out the assessments and verifications with the highest degree of professional integrity and technical competence and shall be free from all pressures and conflicts of interest, particularly financial, which might influence their judgment and results of their work, especially from persons or groups of persons with an interest in the results of verification.

5) For each equipment type, as well as for each procedure of conformity assessment for which the body for conformity assessment asks to be appointed, this body, before and after the appointment, shall have the staff with technical knowledge and sufficient and appropriate experience for the performance of duties related to conformity assessment.

The staff responsible for the performance of duties related to conformity assessment shall have:

1) corresponding work and practical experience, that is, corresponding technical and professional training that includes all activities of conformity assessment, including tests;

2) corresponding professional and technical qualifications, satisfactory knowledge of the requirements for the assessment of technical documentation as well as the knowledge and understanding of any other requirement stipulated by this Rulebook;

3) the ability and independence to draw up certificates, records and reports in relation to executed activities of conformity assessment stipulated by this Rulebook.

6) The body for conformity assessment shall possess, or have access to, corresponding equipment and facilities for carrying out assessments, and shall dispose of other necessary means to carry out in an appropriate way technical and administrative duties related to the activities of conformity assessment.

7) The impartiality of the body for conformity assessment and its top management and of the staff performing conformity assessment shall be guaranteed.

8) The body for conformity assessment establishes, by means of a normative act, procedures related to conformity assessment, including the procedure of decision upon objections on the work of this body together with decisions taken, whilst ensuring transparency and the possibility to reproduce such procedures.

Procedures related to the performance of activities of conformity assessment shall take in account corresponding aspects of equipment.

9) The body for conformity assessment shall take out professional liability insurance.

10) The body for conformity assessment and its staff shall keep confidential any information received during the execution of activities of conformity assessment, in accordance with the law and the normative act.