



A Position Paper from the  
Working Group on Outdoor  
Equipment

*Draft to be submitted to the noise  
steering group*

Technical issues emerging from the application of Directive  
2000/14/EC to some types of equipment.

08 July 2004

*The contents of this document should not be considered as an official statement  
of the position of the European Commission*

## Background

Directive 2000/14/EC (“the Directive”) defines a complete set of requirements for about 60 types of equipment operating outdoor.

Permissible sound power levels which may not be exceeded are defined for some of these types of equipment and are introduced as successive stages (Stages I & II) coming into force respectively on 3 January 2002 and 3 January 2006.

Both stages are compulsory<sup>1</sup> and have been included in the national transpositions of the Directive by the Member States.

The first years of application of the Directive have revealed issues dealing with the adequacy of some test cycles, the classification of equipment and the feasibility of some permissible noise levels

Various parties (industry, Member States) have presented detailed proposals, some of them intended to modify some aspects of Stage II.

During the sixth meeting of the Noise Steering Group on 16 May 2003, the Commission has given to the Working Group on Outdoor Equipment, often referred to as WG7, the task to advice on the technical aspects of the comments and requests presented. The terms of reference of the group are attached. Stakeholders concerned were invited to submit names for representatives in the WG 7 – proposals were received until 28 January 2004. The membership of the group is presented below.

Having regard of Article 19 of the Directive and depending on the proposals, amendment of the Directive might be introduced through Committee procedure or full co-decision process by the European Parliament and Council.

## WG7 composition

The members of WG 7 are representatives of 6 Member States, 4 stakeholders European associations and a representative from CEN. The Commission Services (DG ENV and DG ENTR) attend the WG meeting as observers. The detailed list follows:

ORGANISATION	NAME	E-MAIL
Italy - Environment Ministry/UNACOMA	Giorgio BILLI (Chair)	giorgio.billi@unacoma.it
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<sup>1</sup> Only permissible noise power levels for some lawnmowers, lawn trimmers and lawn edge trimmers are marked as indicative pending a specific report by the Commission and successive directive amendment.

### **Work method:**

WG 7 has discussed every position presented by industry and Member States considering each type of equipment separately. Some of the proposals presented evolved following the discussion in the Group.

On this basis, this position paper presents the agreements reached by WG7, and suggests corresponding amendments to the Directive, these might require comitology, codecision procedures or communication via the Guidelines.

Conclusions were drawn by consensus, no vote was taken on any occasion.

### **Conclusions for each type of equipment:**

**Dozers, tracked.** Listed in Article 12 Annex I definition and Annex III test code: item 16.

#### **CECE comment/request:**

As permissible noise levels have been reduced (see Directives 86/662/EEC, 95/27/EC), successive re-designs have reduced the level of the major noise sources down to a point where steel tracks have become the major one. Despite several studies and experiences carried out in the past, no viable solution has been found to reduce tracks noise.

As Stage II permissible sound power levels come into force there would be no possibility to maintain compliance for these machines so it is proposed to suspend the application of Stage II for these machines.

#### **WG 7 position:**

The group agreed that the track noise has become the dominant source for these machines and that there is apparently no technical possibility to lower this source, so it supports maintaining Stage I permissible levels also for the duration of Stage II.

Given the information available through the Article 16 data collection there is no evidence that permissible sound power levels between those imposed by Stage 1 and Stage 2 can be fixed.

#### **Corresponding amendment of the Directive (Codecision).**

**Loaders, Tracked.** Listed in Article 12 Annex I definition and Annex III test code: item 37.

#### **CECE comment/request:**

Tracked loaders are present on the Community market with both steel and rubber tracks. A natural division between these solutions can be identified at 55 kW.

Just like tracked dozers, as permissible noise levels have been reduced (see Directives 86/662/EEC, 95/27/EC), successive re-designs have reduced the level of the major noise sources down to a point where steel tracks have become the major one. Despite several studies and experiences carried out in the past, no viable solution has been found to reduce tracks noise.

As Stage II permissible sound power levels come into force there would be no possibility to maintain compliance for steel tracked loaders thus it is proposed to:

- ▶ Maintain the permissible sound power level of Stage II for tracked loaders with an installed power not larger than 55 kW.
- ▶ Suspend the application of Stage II (i.e. maintain Stage I) for tracked loaders with an installed power larger than 55kW.

**WG 7 position:**

The group agreed that for steel tracked loaders the situation is equivalent to tracked dozers and decided to support the requests presented by CECE, thus recommending that:

- ✦ For tracked loaders with an installed power not larger than 55 kW, Stage II will apply.
- ✦ For tracked loaders with an installed power larger than 55 kW, Stage I is maintained for the duration of Stage II.

**Corresponding amendment of the Directive (Codecision).**

**Certain types of equipment with an installed power larger than 250 kW**

- ◆ **Dozers, wheeled.** Listed in Article 12 Annex I definition and Annex III test code: item 16.
- ◆ **Landfill compactors.** Listed in Article 12 Annex I definition and Annex III test code: item 31.
- ◆ **Loaders, wheeled.** Listed in Article 12 Annex I definition and Annex III test code: item 37.
- ◆ **Excavators.** Listed in Article 12 Annex I definition and Annex III test code: item 20.
- ◆ **Dumpers.** Listed in Article 12 Annex I definition and Annex III test code: item 18.

**CECE comment/request:**

CECE requested to delay Stage II for the above mentioned types of equipment when the installed power is larger than 250 kW until 3 January 2008 for the following reasons:

- ✦ The introduction of Stage II at a unique date for the whole installed power range poses a major challenge for equipment and components manufacturers. Machines > 250 kW are less than 2% of total earthmoving population but consume about 25% of R&D resource (in their respective family: Excavator, Loader wheeled, Dumper...) because their "extra large" critical components are not available on the shelf. It would be natural to allocate resources both human and financial to the machines which are sold in larger volumes and are predominantly used in populated areas.
- ✦ Meeting Stage II for these machines is a manpower / resource issue, not a technical issue which is the reason to ask only for a 2 years delay rather than a complete exemption.

**WG 7 position:**

**WG7**

- ◆ agreed that there is no technical justification for the proposal.
- ◆ noted the difficulty but cannot give advice as the main reason given is the availability of resources and manpower.
- ◆ noted that Stage II limits had been known for a long time.

**Landfill compactors.** Listed in Article 12 Annex I definition and Annex III test code: item 31.

**WG7 comment:**

As part of the discussion on this type of equipment it appeared that there is an inconsistency in the test code prescribed by the Directive as machines have to be tested on a hard reflective surface, while normally steel tracked or wheeled (as in this case) machines are tested on sand.

WG7 investigated the revision of ISO 6395 and agreed the new draft standard answers the question raised.

**WG7 Position:**

WG7 recommends to make reference to this new standard as soon as available through Committee procedure Article 18.

**Corresponding amendment of the Directive (Comitology).**

**Dumpers.** Listed in Article 12 Annex I definition and Annex III test code: item 18.

**CECE comment/request:**

Complete the general definition taking into consideration the various types of dumpers in order to have a more accurate data collection.

**WG 7 Position:**

WG7 recommends to add a definition of

- ✦ Rigid frame dumper
- ✦ Articulated frame dumper
- ✦ Seated operator compact dumper
- ✦ Pedestrian controlled or standing operator compact dumper.

Specific instruction for the compilation of the EC DoC can be given through an updated version of the Guidelines. An amendment of the Directive can be foreseen at a later stage.

**Corresponding amendment of the Guidelines (later Codecision).**

**See Annex 1 for details**

**Paver Finishers** Listed in Article 12 and 13 Annex I definition and Annex III test code: item 41.

**CECE comment/request :**

The reality of the paver finishers on the market is significantly more complex than the definition in the Directive. This differentiation corresponds to different noise emission and needs to be taken into account for the determination of the permissible sound power levels as it was done when including high compaction screed paver finishers (i.e. equipped with high compaction screed) in Article 13.

Three types need to be defined:

- ▶ Pre compacting screed paver finisher (Article 12)
- ▶ Compacting screed paver finisher (Article 12)
- ▶ High compaction screed paver finisher (Article 13)

Considering the fact that compacting screed paver finishers include a compaction system it requested to establish a new type of equipment for which compaction machines permissible sound power levels will apply.

**WG 7 Position:**

WG7 recommends to split paver finishers according to the definitions given above and to maintain Stage I permissible sound power levels for the duration of Stage II for compacting screed paver finishers.

**Corresponding amendment of the Directive (Codecision).**

See Annex 2 for the detailed definitions

**Compaction machine** Listed in Article 12 and 13 Annex I definition and Annex III test code: item 10.

**CECE comment/request:**

CECE states that the test code for "hand guided" compaction machines includes the noise from the equipment operation up to a level that makes any noise reduction action on the machine itself almost irrelevant. Three proposals have been presented:

- ◆ Deducting 3 dB(A) from the measured value
- ◆ Maintaining Stage I permissible sound power levels after 3 January 2006
- ◆ Moving hand guided compaction equipment to the list of Article 13.

**WG7 position:**

Having in mind the fact that:

- ◆ Vibratory plates
- ◆ Vibratory rammers
- ◆ Walk behind vibrating rollers

were not in the scope of the repealed directives on construction equipment, so the experience of noise regulation was limited when drafting the Directive, and that the test code underwent different changes during the discussion in Council, WG7 agreed that there are conditions suggesting a gradual approach to this type of equipment, the first step being Stage I.

WG7 agreed that the operation noise during the test of the above mentioned types of equipment should be avoided to follow the general philosophy of the Directive and recommends to review the test method following the work being done at CEN and ISO. Since changing the test code would definitely involve a change of the measured values, a new set of permissible sound power levels should be determined for Stage II. This work will have a duration incompatible with a new Stage II being in place by January 2006, so WG 7 recommends to suspend the implementation of the present Stage II for this type of equipment until a new one, complete with test code and permissible sound power levels, comes into force following Directive amendment.

**Corresponding amendment of the Directive (Codecision).**

**Concrete Breakers and Picks, hand held** Listed in Article 12 and 13 Annex I definition and Annex III test code: item 10.

**CECE comment/request:**

CECE is of the opinion that internal combustion engine driven breakers should be transferred into the category “not smaller than 30 kg” regardless of the actual mass.

**WG7 position:**

WG7 recommend to include internal combustion engine powered concrete breakers and picks in the category not lighter than 30 kg. The amendment will bring back the Directive inline with the repealed directive 84/537/EEC.

**Corresponding amendment of the Directive (Codecision).**

**EPTA**

EPTA (European Power Tools Manufacturers) aims at the exemption of chiselling hammers claiming that although they fulfil the letter of the definition given in Annex I they are not really the equipment that was intended in the spirit of the Directive.

**WG7 position:**

WG7 examined the request presented and agreed that the equipment referred to by EPTA, as a general rule, is covered by the directive;

From available noise data, the proposed 20 J limit as the threshold between chiseller hammers and concrete breakers and picks is not relevant for noise .

**Lift trucks, combustion engine driven, counterbalanced** Listed in Article 12 and 13 Annex I definition and Annex III test code: item 10.

**FEM comment/request:**

Given the lack of clarity in the Directive concerning both definitions and test cycles for the various types of machinery within this category, FEM presented a detailed set of proposals :

- ✦ Re-structure the definitions
- ✦ Revise the test code to take into consideration the peculiarities of variable reach lift trucks
- ✦ Align the speed in “drive mode” of rough terrain lift trucks with wheeled loaders as they are working in similar conditions
- ✦ Maintain Stage I permissible levels for lift trucks with a capacity larger than 10 t due to technical difficulties in meeting Stage II and the small impact on the environment.

**WG7 position:**

WG7 recommends to re-structure the “lift trucks” equipment type based on the experience brought forward by FEM as follows:

1. Split the definition of lift trucks into:
  - 1.1. Vertical mast lift trucks
  - 1.2. variable reach lift trucks

2. Modify the test code:
  - 2.1. define a specific lift height for vertical mast lift trucks (rough terrain) and variable reach lift trucks, while presently the definition is tailored only for industrial vertical mast lift trucks
  - 2.2. align the speed in "drive mode" between rough terrain lift trucks and wheeled loaders. Both machines have the same top speeds, but on building sites they operate at the same, much lower speed, which is already recognised by the wheeled loaders test cycle.
3. Keep Stage II permissible levels of rough terrain lift trucks despite the changes due to the modification of the test code (drive mode) so as to maintain the same level of stringency for types of equipment that operate in similar way and locations.
4. WG7 noted that there is a lack of coherence in the Directive for industrial lift trucks, as, contrary to all other cases, larger machines are subject to permissible levels and smaller ones are without permissible levels. Given the technical difficulties met by industrial lift trucks larger than 10 t WG7 recommends to maintain Stage I levels after 3 January 2006.

**Corresponding amendment of the Directive (Codecision).**

Details on the equipment classification and test cycles are given in Annex 3

**Mobile cranes**, Listed in Article 12 Annex I definition and Annex III test code: item 38.

**FEM comment/request:**

Based on the foreseen challenges to install engines compliant with Stage III A of 2004/26/EC (amending 97/68/EC) FEM proposed a series of changes in the timing of Stage II of the Directive for different kinds of mobile cranes :

- \* One year postponement after 3 January 2006 for all mobile cranes with an installed power between 75 and 130 kW
- \* Maintain Stage I permissible levels for 2 years for AT (all terrain) cranes with an installed power larger than 130 kW because of the amount of models to improve
- \* Maintain Stage I permissible levels for rough terrain and crawler cranes for 3 years due to the difficulties to meet Stage II as shown by the data produced by FEM and the limited number of machines placed on the market.

**WG7 position:**

WG7 agreed that there is no technical evidence justifying the negative effects on noise emission due to the installation of Stage III A engines in this type of equipment. The data supplied by FEM show that AT cranes are in a position to meet Stage II limits. For RT (rough terrain) and crawler cranes the issue might be more about economical and human resources, but in any case WG 7 noted that the noise Directive was adopted years before the emissions Directive. WG7 noted the difficulty but cannot give advice as the main reason given is the availability of resources and manpower.

**Tower cranes**, Listed in Article 12 Annex I definition and Annex III test code: item 53.

**Italian comment/request:**

Italy drew the attention of the Group on the test code which is lacking the calculation method to define the measured value.



**WG7 position:**

WG7 agreed that the calculation method existing in the repealed directive 84/534/EEC is valid and support the modification of the Directive to reintroduce the calculation method. The necessary part of the text was lost due to wrong editorial transfer from the old to the new Directive.

**Corresponding amendment of the Directive (Comitology).**

**Concrete or mortar mixers**, Listed in Article 13 Annex I definition and Annex III test code: item 11.

**Italian comment/request:**

Italy presented the case of self loading concrete or mortar mixers. These self propelled machines do not have, as other (mobile) mixers, a fixed ratio between engine and drum speed. Italy proposed to define the test conditions for these machines, otherwise noise markings might be incoherent.

**WG7 position:**

WG7 considered the Italian proposal and agreed to support it as it solves the uncertainty of application of the Directive.

**Corresponding amendment of the Directive (Comitology).**

**All diesel engine powered equipment listed in Article 12**

**CECE/FEM comment/request:**

CECE and FEM requested to introduce a 1 year transition period for equipment with an installed power within the range between 75 and 130 kW. The request is based on the wish to align the application of Stage II of the Directive with Stage III A of Directive 2004/26/EC on exhaust emission from NRMM engines.

**WG7 position:**

WG7 agreed that the issue has no technical justification. WG7 noted the difficulty but cannot give advice as the main reason given is the availability of resources and manpower.

## Executive summary

Type of equipment	Requests from industry or member state	WG7 position	Instrument
Dozers - Tracked	Maintain Stage I limits in place of Stage II	In favour	Codecision
Loaders - Tracked	Maintain Stage I limits in place of Stage II for tracked loaders with an installed power > 55 kW	In favour	Codecision
Dozers – Wheeled, Landfill compactor, Loaders – Wheeled, Excavators, Dumpers > 250kW	Maintain Stage I limits until 3 January 2008	No technical issue, resources, manpower availability issue, WG7 cannot take a position	
Dumpers	Revision of the definition to include new classification	In favour	Guidelines and later codecision
Paver-finishers	Revise the definition and the corresponding limit values	In favour	Codecision
	Revise the classification and suspend Stage II for compacting screed paver finishers	In favour	Codecision
Hand guided compaction machines: Vibratory plates Vibratory rammers Walk behind vibrating rollers	Revise the test code as the existing one include the noise coming from process which is not in line with the philosophy of the directive	In favour to keep Stage I and develop a new cycle in CEN/ISO standard	Codecision
IC engine powered hand held breakers	Include IC engine powered breakers into the category not smaller than 30 kg, regardless of the actual mass Come back to the requirement existing in the old directive	In favour to include IC engine powered concrete breakers and picks in the category not lighter than 30 kg. The change is due to wrong transposition of the old directive	Codecision
Hand held breakers	Revise the definition to exclude hammer below 20j	Not in favour	
Lift trucks (excluding those specifically constructed for container handling)	Revise the classification between industrial and rough terrain trucks  Revise the test code to cover adequately variable reach trucks and align it with wheeled loaders as they have similar mode of actual operation  Maintain Stage I limits in place of Stage II for industrial trucks > 10t	In favour of:  1. classification change 2. test code adaptation 3. suspension of Stage II for ind. trucks > 10 t	Codecision
Mobile cranes	Maintain Stage I values	No technical issue, resources, manpower availability issue, WG7 cannot take a position	
<i>Landfill compactors (presented by Italy)</i>	<i>Clarification how to perform the test cycle</i>	<i>In favour</i>	<i>Comitology</i>
<i>Tower cranes (presented by Italy)</i>	<i>Complete the test code</i>	<i>In favour</i>	<i>Comitology</i>
<i>Concrete or mortar mixers (presented by Italy)</i>	<i>Adapt the test</i>	<i>In favour</i>	<i>Comitology</i>
One year transition period for all diesel engine powered equipment in Article 12 with an installed power between 75 and 130 kW	One year transition period for equipment having engine between 75kW and 130kW to be in line with directive 2004/26/EC	No technical issue, resources, manpower availability issue, WG7 cannot take a position	

## Annex 1

### Dumpers

self-propelled crawler or wheeled machine, with an open body, which transports and dumps or spreads material

#### **rigid frame dumper**

dumper with a rigid frame and wheel or crawler steering

#### **articulated frame dumper**

dumper with an articulated frame for steering

#### **seated operator compact dumper**

articulated or rigid dumper having an operating mass (see ISO 6016) of 4500 kg or less, the operator being seated on the dumper

#### **pedestrian controlled or standing operator compact dumper**

rigid dumper having an operating mass (see ISO 6016) of 4500 kg or less, the operator being standing on the dumper or walking behind.

Note: this definition is in line with ISO 6165

## Annex 2

### Paver Finishers

**Pre compacting screed paver finishers:** mobile road construction machine integrating a compaction machine used for the purpose of applying layers of construction material, such as bituminous mix, concrete and gravel on surfaces. The construction material is compacted by the weight of the screed (pre compacting system).

**Compacting screed paver finishers :** mobile road construction machine integrating a compaction machine used for the purpose of applying layers of construction material, such as bituminous mix, concrete and gravel on surfaces. In addition to the pre compacting system, a single additional compaction system, which may consist of vibrators, tamper bars or pressure bars, is fitted.

**High compaction screed paver finishers :** mobile road construction machine integrating a compaction machine used for the purpose of applying layers of construction material, such as bituminous mix, concrete and gravel on surfaces. In addition to the pre-compacting system, at least two compaction systems, which may consist of vibrators, tamper bars or pressure bars, are fitted.

## Annex 3

### Lift trucks, combustion engine driven, counterbalanced

#### Definition (Annex 1 Point 36)

Replace the definition by

36 Lift trucks (except those specifically constructed for container handling)

#### 36 a) Counterbalanced internal combustion lift trucks with vertical mast

**Industrial type:** Stacking lift truck fitted with fork arms (which can be replaced by another device) on which the load, either palletised or not, is put in a cantilever position in relation to the front wheels and balanced by the mass of the truck.

**Rough terrain type:** Wheeled counterbalanced trucks, intended primarily for operation on unimproved natural terrain and on the disturbed terrain of , for example, construction sites.

#### 36 b) Counterbalanced variable reach lift trucks

Counterbalanced rough terrain or industrial lift trucks with one or more articulated arms, telescopic or not. They are fitted with a fork or other type of device like bucket, hooks or working platform.

#### Test code (Annex III point 36)

#### 36 Lift trucks

##### (i) Counterbalanced internal combustion lift trucks with vertical mast, industrial type:

(existing text of point 36 unchanged)

##### (ii) Counterbalanced internal combustion lift trucks with vertical mast, rough terrain type

#### Basic noise emission standard

EN ISO 3744:1995

#### Operating conditions during test

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

#### Lifting condition

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 standard lift height as defined in EN1726-1; 1998 of 2,5 m for pallet stackers and high-lift platform trucks having a width across fork arms of platform up to and including 690 mm or 3,3 m for all other types of trucks. If the actual maximum lift height is less, it may be used in individual measurements. In that case it shall be indicated in the report.

### **Drive condition**

The truck shall be operated at maximum governed engine speed in a constant travel velocity.

Drive the truck without load, at steady forward speed in the gear giving the closest speed to, but not exceeding 8 km/h, 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 the steady speed 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.

Hydrostatic drive machines may use a range of 7 to 8 km/h because of the difficulty in setting ground speed controls for exact travel speeds.

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

The periods of observation are:

- 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

$$L_{WA} = 10 \log (0,7 \times 10^{0,1LWAc} + 0,3 \times 10^{0,1LWAa}).$$

where superscript 'a' indicates 'lifting mode' and superscript 'c' indicates 'driving mode'.

### **(iii) Counterbalanced variable reach lift trucks.**

#### **Basic noise emission standard**

EN ISO 3744:1995

#### **Operating conditions during test**

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

#### **Lifting condition**

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 (in relation with the load) to the standard lifting heights as defined in EN 1459:1998 of 3.3 m for capacity < 10 tonnes and 5 m for capacity > 10 tonnes. If the actual maximum lift height is less, it may be used in individual measurements. In that case it shall be indicated in the report.

#### **Drive condition**

The truck shall be operated at maximum governed engine speed in a constant travel velocity.

Drive the truck without load, at steady forward speed in the gear giving the closest speed to, but not exceeding 8 km/h, 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 the steady speed 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.

Hydrostatic drive machines may use a range of 7 to 8 km/h because of the difficulty in setting ground speed controls for exact travel speeds.

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

The periods of observation are:

- for lifting and telescoping condition: the whole 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 is calculated by

$$L_{WA} = 10 \log (0,7 \times 10^{0,1 L_{WA}^c} + 0,3 \times 10^{0,1 L_{WA}^a}).$$

where superscript 'a' indicates 'lifting mode' and superscript 'c' indicates 'driving mode'.

## **TERMS OF REFERENCE FOR THE "OUTDOOR EQUIPMENT" WORKING GROUP**

### **SCOPE**

This Working Group (WG), reporting through the Noise Steering Group, shall assist the Commission and the Member States in the implementation of Directive 2000/14/EC on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors. The WG is expected to use the material provided by former WG 7.

### **TASKS**

1. Exchange of information and experience concerning the implementation of directive 2000/14/EC.
2. Provide the Commission with advice supporting the preparation of the report foreseen in Article 20.1 of the Directive (implementation report). In particular, the WG may be consulted by the Commission on documents submitted by stakeholders involved in the implementation of the directive.
3. Assist the Commission in the adaptation to technical progress of Annex III of the directive (method of measurement of airborne noise emitted by equipment for use outdoors).
4. Investigate the connection between emission and perception for noise from outdoor equipment (e.g. benefit assessment, dose-effect relations...).