

## Notice ProAV Repair Index for Loudspeakers and Projectors

### 1. Product information

#### a) **Passive vs. active speakers**

In the case of passive enclosures, only mechanical parts are taken into account for criteria 2 and 3.

In the case of active loudspeakers and amplifiers, additional electronic parts are taken into account for criteria 2 and 3.

Consequently, the details of the scoring grids are different for these two criteria, depending on whether the speaker is passive (mechanical) or active (electronic).

It is therefore necessary to enter the type of product (asset or liability) being calculated (PRODUCT INFORMATION tab).

However, even if the scale of each sub-criterion is larger in the case of active loudspeakers, their weight in the final score is the same.

#### b) **LED projectors vs. lamps**

The parts list differs for LED spotlights and lamps.

You must therefore select a product type beforehand (PRODUCT INFORMATION tab).

### Criterion 1 - Documentation

#### a) **Documents**

The information can be freely distributed at the producer's initiative in various physical or dematerialized documents. Scoring points are awarded if the information in question is available in any document available free of charge to the target user (repairer, installer, integrator, end customer or user) and unequivocally relates to the product model being calculated.

If access to the documentation is conditional on the target user taking out a subscription of some kind, points cannot be awarded.

#### b) **Document language**

Documents must be written in the language of the local legislation applying to the products concerned; English is tolerated in all cases for highly technical aspects intended for professional repairers (e.g. technical bulletins).

#### c) **Circuit diagram**

The wording covers the following cumulatively:

- The circuit diagram or schematic diagram, which details the designations and values of the electronic components and their interconnections on the circuit board;
- Any other circuit diagrams that may be relevant to the repair of the product (block diagrams, electrical wiring diagrams, layout diagrams, etc.).

#### d) **Information on access to professional repairers**

The manufacturer or importer is free to indicate to end-users/customers the professional repairers of his choice.

## Criterion 2 - Removability and access, tools, fixings

### a) Operating procedure - Understand the concept of steps for disassembly and access to a single part.

A step is an operation which results in the removal of a component or part, or a tool change.

A component may comprise one or more parts.

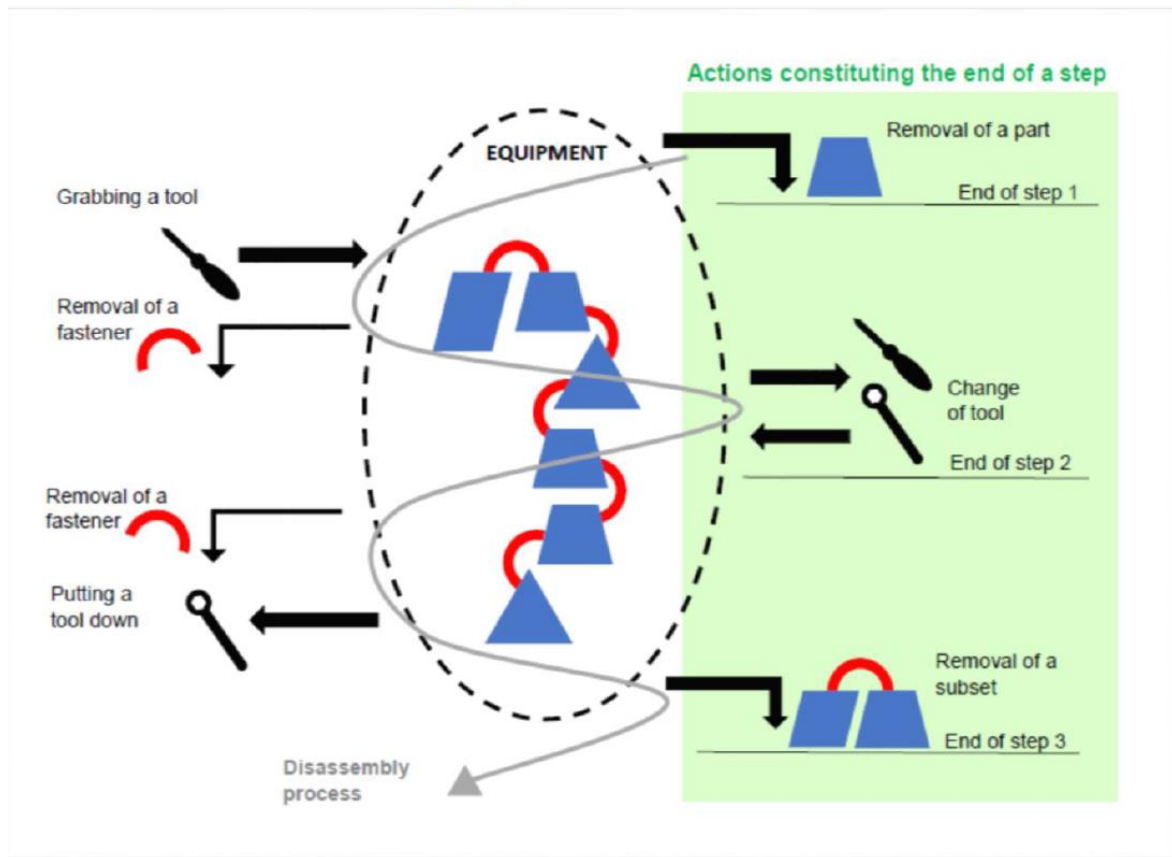
This general definition may admit exceptions justified by practical or safety considerations.

Fasteners are defined as assembly, fixing or sealing techniques.

Fastening or connecting elements are not considered parts.

#### Stage definition

The figure below shows how to count steps.



In this example, all the actions carried out (listed on the left and right) can be broken down into three stages. Thus, only the removal of a part, the removal of a sub-assembly or a tool change constitutes the end of a step. On the other hand, the following do not constitute the end of a step: gripping a tool, removing a tool, removing a fastener, and partial disassembly of a pipe or sub-assembly.

For safety reasons, the action of "securing the active internal parts of the device" constitutes a step, regardless of the number of manipulations required, even if this does not involve changing a tool or removing a part or component. This includes, for example, "Disconnecting the equipment from the mains".

#### Start and end of stage counting

Counting the dismantling steps for a given part always starts with the equipment complete and connected to the mains and/or under voltage and/or under pressure.

Disassembly is completed when the part is disassembled. Special cases are dealt with below.

If the removal of the part in question involves the prior removal of a block (made up of several parts) of which this part is a part, the end of disassembly occurs when the part in question is finally removed from this block. The actions constituting the end of a step remain the same: removal of a part, tool change, removal of a component (subset of parts).

If the disassembly target is a sub-assembly of parts, disassembly is completed when each part of the sub-assembly has been disassembled, and is therefore individually accessible.

Nota bene :

- The hand is not considered a tool.
- A fastener is not considered a part.

#### **b) Definition of a fastener**

Material device that mechanically or magnetically connects or fixes two or more objects, parts or components. A fastener is generally non-permanent (removable and reusable), i.e. it can be easily removed or dismantled without damaging the objects, parts or components connected or fastened together (e.g. screws or clips). Welding and certain types of gluing, on the other hand, are permanent fixings, i.e. non-removable and non-reusable. Adhesives are considered removable and non-reusable fasteners, unless new ones are supplied with the spare part.

If a part requires the removal of different types of fasteners, the most unfavorable type of fastener should be used for scoring.

#### **c) No part can be disassembled**

A part is considered non-dismantlable if it cannot be accessed individually and cannot be disassembled from the equipment or a sub-assembly, with a view to its replacement. In this case, the points for the corresponding criterion 2.1 are not awarded.

A link is established between the scoring of sub-criterion 2.1 and that of sub-criterion 3.1: if a part cannot be dismantled, the zero score is then passed on from one sub-criterion to the other.

#### **d) The case of the loudspeaker**

The loudspeaker may comprise a woofer and/or a midrange and/or a tweeter.

The room to be considered is primarily the woofer, if present. If there is no woofer, the midrange is taken into account. As a last resort, the tweeter is taken into account.

### **Criterion 3 - Availability of spare parts**

#### **a) Definition of spare parts distributor**

Any natural or legal person in the supply chain, other than the producer or importer, who offers a spare part for sale.

#### **b) Commitments on spare parts availability and delivery times**

For points to be awarded in column A, the manufacturer must have its own in-house repair service (e.g. via the after-sales department).

Whether it's the availability of spare parts or the delivery time, the manufacturer or importer must choose, from among all its practices, the most penalizing time for each part. If the producer or importer does not make spare parts directly available, then points are not awarded.

Spare parts must be made available as part of a direct commercial relationship between the manufacturer or importer and the recipient.

#### **c) Delivery time**

Delivery time is defined as the number of working days between the day the order is validated and the day it reaches the actor concerned.

#### **d) The case of the loudspeaker**

The loudspeaker may comprise a woofer and/or a midrange and/or a tweeter. The room to be considered is primarily the woofer, if present. If there is no woofer, the midrange is taken into account. As a last resort, the tweeter is taken into account.

### **Criterion 4 - Price of spare parts**

#### **a) Procedure - calculating the ratio for the price criterion**

Ratio between the manufacturer's or importer's selling price for parts and the manufacturer's or importer's selling price for equipment.

The criterion is established by dividing :

- [price excluding tax of the most expensive part in list 2 + (average price excluding tax of the other parts in list 2)]/2

and

- the pre-tax price of the equipment model concerned,

Each price is understood to be the pre-tax price of the price list in force at the time of calculation of the index and appearing in the manufacturer's or importer's general terms and conditions of sale, or failing this in any relevant contractual document.

Where a manufacturer or importer has several price lists for the parts or equipment in question, depending on the target audience, the prices used to calculate the index are those of the list that accounted for the highest proportion of the manufacturer's or importer's sales for the type of part or equipment concerned, over the last financial year. For equipment and parts newly launched on the market, where there is more than one price scale, the prices used are those of the lowest price scale.

If some of these parts are inseparable, or if the part in question is integrated into a module which is the only one available, the price to be taken into account is the cumulative price of the parts or the price of the module.

#### Prices to consider

In the absence of a pre-tax price list for professionals, "pre-tax price" could be used for spare parts sold to end-users.

#### Deduction of delivery costs

The principle adopted is to calculate excluding transport or delivery costs. If the latter are included in the general sales conditions, it is up to the producer or importer to deduct them in order to calculate the ratio.

In particular, for the price of spare parts, there are two possible ways of deducting transport or delivery costs: individually for each part on the "breakage/breakdown" list, or on a flat-rate basis (in absolute terms or as a percentage). The same applies to the price of new equipment.

#### Spare part(s) forming part of a batch

If one or more of the parts on the "breakage/panel" list are part of a batch offered for sale or of any other sub-assembly of inseparable parts, the price of the part concerned is the price of this sub-assembly.

#### Part not available

If, at the time of calculating the index, a part from the "breakage/breakdown" list is not available (i.e. from any category of player), the number of points awarded for criterion 4 relating to spare parts prices is 0.

#### Parts not managed by the manufacturer or importer

If parts on the "breakage/breakdown" list are not managed by the producer or importer, the price of the parts to be considered is that shown in the general sales conditions or, failing that, in any other relevant contractual document of the spare parts supplier, at the time the index is calculated. The producer or importer must keep a copy of this document for presentation in the event of an inspection.

#### Product options

If options are offered for the same model, and if they have no influence on the technical characteristics for the purposes of calculating the index, then the price ratio should be calculated from the price of spare parts and the price of the most common version of the product concerned.

#### Absence of a part

If the equipment does not include a listed part, then the price of the missing part does not appear in the ratio calculation.

#### **b) The case of the loudspeaker**

The part taken into account will be the one used for criteria 2 and 3, i.e. the woofer if present. If it's absent, the midrange will be taken into account, and if there's no midrange, the tweeter.

### **Criterion 5 - Specific criteria**

#### **Remote assistance**

Remote assistance includes any system designed to facilitate the search for information in the event of a breakdown, information to identify the origin of a breakdown, or remote assistance to carry out repairs. In the case of remote repair assistance, the device must be capable of providing precise technical support to the user.

Remote assistance devices include remote information (website, FAQ, etc.), remote diagnostic assistance (telephone hotline, chat, application included with the equipment, interactive decision tree, etc.) and remote repair assistance (telephone hotline, visio call, remote control of the device, etc.).

Remote assistance systems must be completely free of charge (including telephone calls in the case of a hotline).

#### **Further details**

#### **Different availability times for documentation and spare parts (criteria 1 and 3)**

The manufacturer or importer may make different commitments regarding the availability of documentation and spare parts for the same piece of equipment, for example: 9 years for the availability of documentation and 7 years for the availability of spare parts.

#### **Lack of equipment documentation**

If the equipment does not have a part or component covered by the documentation listed in criterion 1, then the points corresponding to the documentation in question are awarded.

#### **Missing part on equipment**

If the equipment does not include a listed part from the relevant category, then the points corresponding to the part in question are awarded.

Concerning criterion 4 on price, the price of the missing part does not appear in the calculation.