

Code of good practice for the re-use of (W)EEE

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1 Introduction

1.1 Background and summary

According to the European waste hierarchy (preparation for) re-use is preferable to recycling. However re-use does not always have the lowest environmental impact. In some cases it may be more environmentally responsible to immediately recycle the waste product instead of re-using it. In the case of waste electrical and electronic equipment for example the question may arise whether the re-use of old appliances which consume a lot of energy or contain polluting substances (such as CFCs, PCBs, Hg, etc.) is environmentally responsible. OVAM commissioned a study¹ with the aim of establishing specific criteria for various product categories making it possible to determine whether an electrical or electronic appliance can be re-used in an environmentally responsible way. These criteria are described in Chapter 2 of the Code of Good Practice.

From an environmental perspective, electrical and electronic equipment which does not meet these re-use criteria should not be re-used. Such equipment should no longer be made available on the market or exported as a (second-hand) product. When a used electrical or electronic equipment, which the holder wants to make available on the market as a (second-hand) product, does not meet the re-use criteria, that used electrical or electronic equipment should be regarded as waste according to the OVAM, and must be discharged to a licensed waste treatment facility or a re-use center.

Used electrical and electronic equipment which does not meet the re-use criteria but which can potentially be re-used can be prepared for this purpose by a re-use centre. This process of preparing for re-use, which is a waste treatment operation, has to meet certain requirements. These conditions are described in Chapter 3 of the Code of Good Practice.

Currently the Code of Good Practice has the status of a guideline. At a later stage, in the frame of the next review of VLAREMA² (2013), the elements in the Code of Good Practice shall be transposed in a Ministerial Order and VLAREMA shall refer to this order. From then on the re-use criteria shall be legally enforceable.

1.2 Definitions

The following definitions are used in the frame of this Code of Good Practice and shall not affect existing definitions.

- **WEEE**
Waste electrical and electronic equipment.

¹ *Hergebruikscriteria AEEA*, OVAM, March 2011.

² Flemish regulation on sustainable management of material cycles and waste materials.

- **EEE**
Electrical and electronic equipment³.
- **Used EEE**
EEE that has been used but which is not necessarily considered as waste.
- **EEE for professional use**
Equipment that is designed to be solely used by professional users.
- **Second-hand EEE**
EEE that has already been used but which meets all the applicable re-use criteria.
- **Re-use**
Any act whereby products or components which are not waste are re-used for the same purpose for which they were intended.
- **Re-use centre**
A company or organisation where used electrical and electronic equipment which is suitable for product re-use is stored, sorted, tested, cleaned and/or repaired and where re-usable EEE is separated from non re-usable EEE.
- **Preparing for re-use**
'Preparing for re-use' means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing.

1.3 Target audience

The Code of Good Practice describes the criteria which electrical and electronic appliances should meet to be made available on the market or exported as a (second-hand) product. Additionally the Code of Good Practice sets out specific guidelines to which re-use centres have to adhere during the process of preparing WEEE for re-use.

The Code of Good Practice is intended for natural or legal persons wishing to:

- prepare used EEE for re-use;
- make used EEE available on the market as a second-hand product;
- transport used EEE (transboundary) as a (second-hand) product;
- facilitate or organise the marketing of used EEE as an intermediary or a broker.

In addition the Code of Good Practice is destined for supervisory authorities who inspect (transboundary) transports of used EEE. A significant share of WEEE is exported as 'second-hand' EEE in order to circumvent waste legislation. The re-use criteria were designed as a tool for supervisory authorities in order to enable them to better distinguish between WEEE and second-hand EEE and to facilitate enforcement. Used EEE which does not meet the re-use criteria set out in this document, in addition to existing requirements of a European or global nature, should be considered as waste. This means amongst others that the transboundary shipment of WEEE, in accordance with Regulation 1013/2006/EC, is subject to the notification procedure and that exports to countries to which the OECD Decision does not apply are prohibited.

1.4 Objectives

The following objectives shall be achieved if the Code of Good Practice is properly adhered to:

- **Improvement of the environmental score of equipment which is re-used**
The environment shall benefit when equipment that is being re-used meets the re-use criteria. Equipment with a very high energy consumption for example shall no longer be able to be re-used.

³ For a definition of 'electrical and electronic equipment': see Article 1.2.1§2 of VLAREMA.

— **The prevention of exports of WEEE under the guise of second-hand goods**

A significant share of WEEE is illegally exported to non-OECD countries as second-hand goods. A share of the WEEE that was generated in neighbouring countries also passes through Flemish ports (transit). A clearer distinction may be made between second-hand EEE and WEEE (=waste) based on the re-use criteria. The re-use criteria, as described in Chapter 2 of the Code of Good Practice, were designed as a tool for supervisory authorities in order to enable them to better distinguish between WEEE and second-hand EEE and to facilitate enforcement. The first objective (improving the environmental score of the equipment that is re-used) is also important in the frame of these exports. The application of the re-use criteria prevents used EEE which are no longer considered suitable for re-use in their own country from ending up in vulnerable regions around the world where the (W)EEE is added to the local landfill in the short term.

— **Encouraging the re-use of WEEE which meets the re-use criteria**

Currently only a very small percentage of the collected WEEE is re-used. OVAM encourages the re-use of WEEE insofar as the provisions of the Code of Good Practice are complied with.

2 Re-use criteria for (W)EEE

This chapter describes the criteria which used electrical and electronic equipment should meet in order to be made available on the market or shipped transboundary as (second-hand) products.

2.1 Scope of the re-use criteria for (W)EEE

The (W)EEE re-use criteria apply to:

1 *All waste electrical and electronic equipment:*

When a holder discards a used electrical or electronic appliance it becomes waste. This WEEE has to undergo a selection on re-use in accordance with Article 3.4.4.4 of VLAREMA⁴. Only discarded appliances which, after a preparation for re-use according to the guidelines as described in Chapter 3, meet the re-use criteria can be made available on the market as second-hand products. When a discarded product after a preparation for re-use does not meet the re-use criteria then this appliance shall continue to be considered as waste and will have to be transferred to a licensed waste treatment plant or re-use centre.

2 *All used EEE which the holder wishes to make available on the market:*

Used appliances can only be made available on the market again as second-hand EEE when the re-use criteria are met. When a used appliance, which the holder wishes to make available on the market as second-hand EEE, does not meet the re-use criteria, this used EEE is considered as waste (WEEE) by the OVAM, and will have to be transferred to a licensed waste treatment plant or a re-use centre.

Appliances for personal use do not fall under the scope. As long as the holder uses the appliance for personal purposes the appliance does not necessarily have to meet the re-use criteria. This means that used appliances for personal use which do not meet the re-use criteria do not obtain the status of waste as long as the holder does not discards it.

3 *All used EEE that is shipped transboundary:*

Used EEE that is transboundary shipped has to meet the re-use criteria in order to be able to be shipped as a (second-hand) product. When the re-use criteria are not met, the used EEE should be regarded as waste. This means amongst others that the transboundary shipment of this WEEE, according to Regulation 1013/2006/EC, is subject to the notification procedure, and that export to countries to which the OECD Decision does not apply is prohibited.

However, if supported by conclusive proof that the shipment is taking place in the framework of a business-to-business transfer agreement and that at least one of the following conditions are met, then the used EEE does not has to meet the re-use criteria and can be shipped as a *(second-hand) product*:

- The EEE is sent back to the producer or a third party acting on his behalf as defective for repair under warranty with the intention of re-use;
- The used EEE for professional use is sent to the producer or a third party acting on his behalf or a third-party facility in countries to which Decision C(2001)107/Final of the OECD Council concerning the revision of Decision C(92)39/Final on control of transboundary movements of wastes destined for recovery operations applies, for refurbishment or repair under a valid

⁴ This should not be taken to mean that *all* WEEE has to *always* undergo a selection on re-use. In practice WEEE only has to be selected for re-use if there is a specific demand (e.g., from a re-use centre) for potentially reusable WEEE. A *pre*-selection (based on a visual inspection, see § 3.2.1 for more information) can already be carried out at the level of a collection or centralisation point. A more extensive selection on re-use (in keeping with the criteria described in Chapter 3.2) needs to be done onsite at the re-use centre.

- contract with the intention of re-use;
- The defective used EEE for professional use, such as medical devices or their parts, is sent to the producer or a third party acting on his behalf for root cause analysis under a valid contract, in cases where such an analysis can only be conducted by the producer or third parties acting on his behalf.

EEE which falls under the above scope and which does not meet the re-use criteria shall be considered waste and is thus subject to waste legislation.

Only when this WEEE, after a preparation for re-use, according to the guidelines set out in Chapter 3, meets the re-use criteria again, can it be regarded as a (second-hand) product.

2.2 Re-use criteria for 9 product groups

The Code of Good Practice covers all electrical and electronic equipment. Household EEE as well as EEE for professional use falls under the scope of the re-use criteria, insofar that they do not fall under one of the exceptions described in section 2.1. But not all re-use criteria are applicable to all types of appliances. A distinction is made between various product categories, each with their specific re-use criteria.

There are specific re-use criteria for the following 8 household appliance groups:

- Refrigerators, freezers, portable air conditioners
- Laundry machines, dishwashers, tumble-dryers
- Cooking stoves, ovens, microwave ovens and related equipment
- Television equipment and monitors
- ICT equipment (computers and peripherals)
- Video recorders, DVD equipment, digicorders, game consoles, ...
- Small electronic appliances (cell phones, MP3 players, tablets, and so on)
- Small electronic household appliances

Next to this the more general re-use criteria also apply to a residual category. This residual category includes all household EEE which cannot be defined as belonging to one of the other 8 categories and all EEE for professional use.

2.3 General overview of the re-use criteria

Below is an overview of the various re-use criteria. Some criteria apply to all the product categories, others are specific to one or more product categories.

2.3.1 Criteria which allow for an evaluation of the condition of the appliance

- *“The appliance is fully functional”*
An appliance is fully functional when it has been tested and demonstrated that it can perform the originally intended functions of the appliance. There are specific test procedures in place for a number of specific products such as mobile phones and computers (see paragraph 3.2.3).
- *“The appliance is electrically safe”*
Only equipment of which the electrical safety has been tested may be re-used (see paragraph 3.2.2 for more information).
- *“Full housing”*
If part of the appliance’s housing is missing the appliance cannot be re-used.

- *“Presence of all the essential components”*
The product type will determine which components certainly have to be in place. Without the presence of a key part the appliance cannot properly function.
- *“The components are in good condition”*
That is to say that the components may not be wet, dirty, worn or defective.
- *“Complete and intact insulation”*
Fridges and freezers have two types of insulation, i.e., the insulation in the walls of the appliance and the seal of the door. Both should be in excellent condition in order to avoid high energy consumption.
- *“No calcification on the heating elements”*
Calcification on the heating elements of appliances used to heat water can substantially increase energy consumption. That is why a visual inspection should check whether there is any calcification on the heating elements. If this is the case then the appliance’s heating elements should be replaced or decalcified before re-use of the appliance.
- *“No or only very little rust”*
- *“No or very little cosmetic damage”*

2.3.2 Environment-related criteria

- *“Absence of environmentally hazardous substances such as PCBs, PBBs, PBDEs, lead, mercury, cadmium, hexavalent chromium, asbestos”*
This criterion is highly relevant from an environmental point of view. At the same time it is practically impossible to apply given that it is nearly impossible to determine visually whether an appliance contains hazardous materials. This criterion can only be used with the help of a complete EEE-database. For the time being this criterion shall not be retained given that such a database does not yet exist or is not yet available.
- *“Absence of CFCs / HCFCs”*
CFCs and HCFCs, which were used as coolants in refrigerators, are considered harmful to the ozone layer. Appliances which contain one of the controlled substances as set out in Regulation 1005/2009/EG may not be made available on the market as a second-hand appliance. Other coolants are allowed. Usually the coolants used are listed on the refrigerator. If the used coolants are not listed on the appliance there has to be assumed that the appliance does indeed contain CFCs or HCFCs and therefore it may not be re-used.
- *“Energy label”*
The re-use of appliances that consume a lot of energy is environmentally irresponsible. A study⁵ commissioned by OVAM about re-use criteria showed that the re-use of the following household appliances only makes sense from a given energy label:
 - Refrigerators: Re-use from energy label B or higher;
 - Freezers: Re-use from energy label B or higher;
 - Portable air conditioning units: Re-use from energy label C or higher;
 - Laundry machines: Re-use from energy label B or higher;
 - Dishwashers: Re-use from energy label B or higher;

⁵ *Hergebruikscriteria AEEA, OVAM, March 2011.*

- Tumble-dryers: Re-use from energy label C or higher;

Appliances with an energy label⁶ under the above threshold have to be transferred to a licensed waste treatment plant and may not be re-used. In the future this minimum threshold will probably be raised again.

A database can be used to check an appliance's energy label. If the appliance is not found in the database or if such a database cannot be used then the energy consumption needs to be measured. The measurement of energy consumption needs to be done based on a test procedure that is approved by OVAM.

- *No CRT screen*
The use of new flat panel displays is preferred over the re-use of CRT screens (CRT monitors and CRT televisions) for energy reasons. Furthermore, there is virtually no market anymore for second-hand CRT screens. When these are exported to non-OECD countries most second-hand CRT screens end up with informal 'recyclers', who limit themselves to the recovery of valuable metals, such as copper. The 'remainder' of the appliance is then dumped or burned, releasing materials that are hazardous for the environment, such as the lead in CRT screens, which cause environmental and health problems. OVAM is of the opinion that CRT screens should not be re-used but immediately be recycled.

2.3.3 Criteria about the level of certainty that the appliance will effectively be re-used

- *"There is a regular market for the appliance"*
An outdated appliance may still be fully functional and in perfect condition, but when there is no longer a market for the appliance (whereby the appliance is used for the same objectives as originally intended) in the destination country, then chances are that the appliance will not be re-used. For example, a perfectly working PC with a Pentium I processor is a rather outdated appliance, for which there no longer is a regular market. When this appliance is exported to Africa as a 'second-hand' product one can be reasonably certain that this appliance will probably not be re-used, but instead will be 'cannibalized', giving rise to environmental and health problems.
- *"The appliance is sufficiently secured and protected during transport"*
The appliance needs to be transported in an appropriate manner and be sufficiently protected (by adequate packaging and a suitable stacking of the load) so that it will not be damaged during the loading and unloading process and during transport. If the equipment has not been sufficiently packed or appropriately stacked the equipment will be considered as waste.

2.4 Re-use criteria by product category

2.4.1 Refrigerators, freezers and portable air conditioning units

- General condition of the appliance
 - The appliance is fully functional
 - The appliance is electrically safe
 - Full housing
 - Presence of all the essential components⁷
 - The components are in good condition
 - Complete and intact insulation
 - No or only very little rust
 - No or very little cosmetic damage
- Potential environmental hazard of the appliance
 - Absence of CFCs / HCFCs⁸

⁶ Naturally the energy label of the appliance when it was put on the market as a new product needs to be taken into account.

⁷ Essential components include: the plug, compressor, inner and outer door, joints, controls ...

- Energy label⁹:
 - Refrigerators: Re-use from energy label B or higher;
 - Freezers: Re-use from energy label B or higher;
 - Portable air conditioning units: Re-use from energy label C or higher;
- Intention of re-use
 - There is a regular market for the appliance
 - The appliance is sufficiently secured and protected during transport

2.4.2 Laundry machines, dishwashers, tumble-dryers

- General condition of the appliance
 - The appliance is fully functional
 - The appliance is electrically safe
 - Full housing
 - Presence of all the essential components¹⁰
 - The components are in good condition
 - No calcification on the heating elements
 - No or only very little rust
 - No or very little cosmetic damage
- Potential environmental hazard of the appliance
 - Energy label¹¹:
 - Laundry machines: Re-use from energy label B or higher;
 - Dishwashers: Re-use from energy label B or higher;
 - Tumble-dryers: Re-use from energy label C or higher;
- Intention of re-use
 - There is a regular market for the appliance
 - The appliance is sufficiently secured and protected during transport

2.4.3 Cooking stoves, ovens, microwave ovens and related equipment

- General condition of the appliance
 - The appliance is fully functional
 - The appliance is electrically safe
 - Full housing
 - Presence of all the essential components¹²
 - The components are in good condition
 - Microwave ovens: no radiation loss
- Intention of re-use
 - There is a regular market for the appliance
 - The appliance is sufficiently secured and protected during transport

8 Usually the coolants used are listed on the refrigerator. When one of the regulated substances of Regulation 1005/2009/EC is used the appliance may not be brought into re-use nor may it be exported as a second-hand product. Other coolants are allowed. If the used coolants are not listed on the appliance the appliance cannot be re-used.

9 A database can be used to check an appliance's energy label. If the appliance is not found in the database or if such a database cannot be used then the energy consumption needs to be measured. The measurement of energy consumption needs to be done based on a test procedure that is approved by OVAM.

10 Essential components include: laundry machines: plug, glass window, display, controls, supply and drain hoses; washing machines: plug, baskets, sprinklers, course under door, controls, supply and drain hoses ; tumble-dryers: plug, door seal, clearance on bearings, controls.

11 A database can be used to check an appliance's energy label. If the appliance is not found in the database or if such a database cannot be used then the energy consumption needs to be measured. The measurement of energy consumption needs to be done based on a test procedure that is approved by OVAM.

12 Essential components include: cooking stoves: plug, controls ; ovens: plug, oven dishes, enamel ; microwave ovens: plug, hinges ; related appliances: plug, door.

2.4.4 Televisions and monitors

- General condition of the appliance
 - The appliance is fully functional
 - The appliance is electrically safe
 - Full housing
 - Presence of all the essential components¹³
 - The components are in good condition
- Potential environmental hazard of the appliance
 - No CRT screen¹⁴
- Intention of re-use
 - There is a regular market for the appliance
 - The appliance is sufficiently secured and protected during transport

2.4.5 ICT equipment (computers and peripherals)¹⁵

- General condition of the appliance
 - The appliance is fully functional¹⁶
 - The appliance is electrically safe
 - Full housing
 - Presence of all the essential components¹⁷
 - The components are in good condition
- Potential environmental hazard of the appliance
 - No CRT screen¹⁸
- Intention of re-use
 - There is a regular market for the appliance
 - The following minimum system requirements apply:
 - Processor: Pentium III, 1 Ghz
 - RAM memory: 512 MB
 - Hard drive space: 5 GB
 - The appliance is sufficiently secured and protected during transport

2.4.6 Video recorder, DVD players, digicorders, game consoles, ...

- General condition of the appliance
 - The appliance is fully functional
 - The appliance is electrically safe
 - Full housing
 - Presence of all the essential components¹⁹
 - The components are in good condition
- Intention of re-use
 - There is a regular market for the appliance

13 Essential components include: connectors, plug, remote control.

14 CRT monitors may not be made available on the market as second-hand products. CRT TVs may not be made available on the market as second-hand products from 01.01.2015. CRTs that are part of appliances that do not fall under the WEEE acceptance obligation are not included in the scope of this code of good practice.

15 In the frame of this code of good practice ICT equipment shall be taken to mean: computers (PCs), laptops, notebooks, netbooks, ..., including the screen (CRT, LCD, LED, plasma), keyboard, mouse and peripherals such as a printer and a scanner.

16 The functionality of ICT equipment has to be tested according to specific criteria as described in paragraph 3.2.3.

17 Essential components include: connectors, plug; for laptop: battery, adaptor.

18 CRT monitors may not be made available on the market as second-hand products. CRTs that are part of appliances that do not fall under the WEEE acceptance obligation are not included in the scope of this code of good practice.

19 Essential components include: connectors, plug, remote control

- The appliance is sufficiently secured and protected during transport

2.4.7 Small electronic appliances (mobile phones, MP3 players, tablets, and so on)

- General condition of the appliance
 - The appliance is fully functional²⁰
 - The appliance is electrically safe
 - Full housing
 - Presence of all the essential components²¹
 - The components are in good condition
- Intention of re-use
 - There is a regular market for the appliance
 - The appliance is sufficiently secured and protected during transport

2.4.8 Small electronic household appliances

- General condition of the appliance
 - The appliance is fully functional
 - The appliance is electrically safe
 - Full housing
 - Presence of all the essential components²²
 - The components are in good condition
- Intention of re-use
 - There is a regular market for the appliance
 - The appliance is sufficiently secured and protected during transport

2.4.9 Residual category

- General condition of the appliance
 - The appliance is fully functional
 - The appliance is electrically safe
 - Full housing
 - Presence of all the essential components
 - The components are in good condition
- Intention of re-use
 - There is a regular market for the appliance
 - The appliance is sufficiently secured and protected during transport

20 The functionality of mobile phones has to be tested according to specific criteria as described in paragraph 3.2.3.

21 Essential components include: plug if applicable, connectors if applicable, controls and keys.

22 Essential components include: plug if applicable, connectors if applicable, buttons and keys, the shaver of a razor, loose or movable parts (e.g., pot, filter, cover, door, display).

3 Preparing for re-use

Used electrical and electronic equipment which does not meet the re-use criteria but which can potentially be re-used can be prepared for this purpose by a re-use centre. This process of preparing for re-use, which is a waste treatment operation, has to meet certain requirements.

According to the Waste Framework Directive (art.3, 16^a) “preparing for re-use” shall mean:

“checking, cleaning or repairing recovery operations, by which products or components of products, that have become waste are prepared so that they can be re-used without any other pre-processing”

3.1 Minimum requirements for re-use centres

3.1.1 Inspection by an ISO170120-accredited inspection body

Re-use centres wishing to have access to WEEE that is collected at Recupel collection and centralisation points should sign a *cooperation agreement regarding the careful collection of electrical and electronic appliances and the selection on re-use*. The *cooperation agreement* is an agreement between the re-use centre, a Recupel collection or centralisation point and Recupel. This agreement sets out the provisions for mutual collaboration between the Recupel collector and the re-use centre for the transportation and preliminary selection with a view to the re-use of collected appliances from the collection or centralisation point. The cooperation agreement includes a provision that the *Code of Good Practice regarding the re-use of (W)EEE* has to be complied with.

Re-use centres which prepare WEEE from a Recupel collection or centralisation point for re-use will be periodically inspected by an ISO170120 accredited inspection body. Based on a checklist drawn up by OVAM the inspection body will check whether the re-use centre complies with the *Code of Good Practice regarding the re-use of (W)EEE*. Only those re-use centres which comply adequately with the *Code of Good Practice* may prepare WEEE for re-use. Concerning the financing of the controls, the provisions of the current environmental policy agreement apply.

3.1.2 Registration and licensing

Re-use centres who wish to collect WEEE in the Flemish region from third parties (e.g., from Recupel collection or centralisation points) have to register with OVAM as a waste-collector, -dealer or -broker and have an internal quality assurance system. If the re-use centres limit themselves to the transportation of WEEE which has already undergone a pre-selection on re-use (according to the criteria listed in paragraph 3.2.1) and which potentially is suitable for re-use they will not be required to register as a waste-collector, -dealer or -broker for the transportation of this WEEE.

Preparing for re-use of WEEE is a waste treatment operation. Re-use centres who limit themselves to only preparing WEEE for re-use which has already undergone a pre-selection on re-use (according to the criteria listed in paragraph 3.2.1) shall not be considered as waste treatment plants²³. This implies that no permit is required for the storage and sorting of waste (Vlarem-section 2). By contrast re-use centres who collect WEEE which has not yet undergone a pre-selection on re-use, which implies that the first selection on re-use only takes place on the site of the re-use centre, are considered waste treatment plants. When no pre-selection on re-use has been conducted before the WEEE is processed onsite at the re-use centre the re-use centre effectively requires a permit.

23 The following exception has been included in annexe 1 of VLAREM: “*Re-use centres, etc., concretely facilities where second-hand household goods and comparable industrial goods which qualify for product re-use such as clothing, books, furniture, household goods, toys, electrical and electronic equipment are stored, sorted, cleaned or repaired, are not facilities for the treatment of waste.*”

Producers/importers, brokers or end vendors who accept WEEE from customers in the context of extended producer responsibility for WEEE, and who then prepare it for re-use are also excluded from the permit obligation²⁴ if the storage is done at the end vendor, brokers, producer or importer and if the WEEE is stored in function of an organised regular removal of this waste.

But in spite of the fact that no permit is required for the preparation for re-use of this WEEE, the process of preparation for re-use is still considered a waste treatment process. WEEE, which may have already undergone a pre-selection on re-use, retains the status of waste until all the applicable re-use criteria have been met. Only when all the re-use criteria have been met can a discarded appliance be considered as a product again.

In the Brussels-Capital Region and the Walloon Region, other legislative provisions are in force in terms of registrations and authorizations.

3.1.3 Documenting the process of preparation for re-use

The process of preparation for re-use has to be fully documented. This means that every appliance that shall be made available on the market as a second-hand product or will be exported as such requires a *unique identification code* and a *re-use record*. This re-use record (electronic and/or on paper) needs to fully document every step in the process of the preparation for re-use as described in paragraph 3.2. Such a re-use record has to be presented for every appliance in case of an inspection.

Appliances that are discarded during the process of preparation for re-use and which shall not be made available on the market or exported as a second-hand product do not require a unique identification code and re-use record in case of an inspection.

3.2 Steps to be taken in the process of preparing for re-use

Re-use centres wishing to prepare WEEE for re-use have to comply with the following steps during the process of preparing for re-use:

3.2.1 Preselection on re-use – visual inspection

A first step in the process of 'preparing for re-use' is the visual inspection of the discarded or used appliance. This step can already be carried out onsite where the used EEE is collected (e.g., at a Recupel collection or centralisation point). When the appliance meets one or more of the criteria listed below then it needs to be kept separate as 'non re-usable WEEE' and be transferred to a licensed waste treatment plant. For these appliances it is not worth to take further preparatory steps. The following criteria apply:

- Incomplete housing (e.g.: missing door)²⁵
- Essential components are missing (e.g.: compressor of a fridge is missing)²⁶
- Poor general condition of the appliance
- CRT-screen²⁷
- A lot of rust on the body
- A lot of cosmetic damage (e.g.: dents, cracks, holes ...)
- The appliance looks very outdated

24 This exception has been included in annexe 1 of VLAREM.

25 This only applies to defects that are easy to determine.

26 This only applies to missing parts that are easy to determine.

27 CRT-televisions can still be prepared for re-use until 01.01.2015.

3.2.2 Test of the appliance's electrical safety

The electrical safety of each appliance needs to be tested including (if applicable): an insulation measurement, an earthing measurement and a check for short circuits. Only appliances that are electrically safe may be re-used.

When the appliance fails the electrical safety test it has to be repaired or transferred to a licensed waste treatment plant.

3.2.3 Functionality test

The functionality of each appliance has to be tested. Only appliances that are fully functional may be re-used. An appliance is fully functional when it has been tested and demonstrated that it can perform the originally intended functions of the appliance.

When the appliance fails the functionality test it has to be repaired or transferred to a licensed waste treatment plant.

For certain product categories the functionality of the appliance has to be tested on the basis of a number of specific criteria:

- Specific criteria for ICT equipment (computers and peripherals): Reference is made here to the criteria that are listed in appendix 5 of the *'Guidance document on the environmentally sound management of used and end-of-life computing equipment'* (PACE, 15 March 2011, p.45-46). The criteria were developed in the frame of the PACE working group of the Convention of Basel. A copy of appendix 5 is included in annex.
- Specific criteria for mobile phones: Reference is made here to the criteria that are listed in paragraph 2.2 of the *'Guideline for the transboundary movement of collected mobile phones'* (MPPI, 25 March 2009, p.13-14). The criteria were developed in the frame of the MPPI project of the Convention of Basel. A copy is included in annex.
- Specific criteria for fridges and freezers:
 - Refrigerators should be at least capable of cooling to 5°C
 - Freezers should be able to freeze at least to:
 - freezers with one star: min 6°C
 - freezers with two stars: min 12°C
 - freezers with three stars: min 18°C

3.2.4 Test of an appliance's energy consumption

The study²⁸ commissioned by OVAM about re-use criteria showed that the re-use of the following household appliances only makes sense from a given energy label:

- Refrigerators: Re-use from energy label B or higher;
- Freezers: Re-use from energy label B or higher;
- Portable air conditioning units: Re-use from energy label B or higher;
- Laundry machines: Re-use from energy label B or higher;
- Dishwashers: Re-use from energy label B or higher;
- Tumble-dryers: Re-use from energy label C or higher;

So the energy label of refrigerators, freezers, air conditioning units, laundry machines, dishwashers and tumble-dryers at the time that the appliance was put on the market as a new product needs to be

²⁸Hergebruikscriteria AEEA, OVAM, March 2011.

checked. Appliances with an energy label under the above threshold have to be transferred to a licensed waste treatment plant and may not be re-used.

A database can be used to check an appliance's energy label. If the appliance is not found in the database or if such a database cannot be used then the energy consumption needs to be measured. The energy consumption needs to be measured based on a documented test procedure which has to be submitted to OVAM for approval.

3.2.5 Repairing the appliance

If the previous steps show that the appliance is not in good condition, is unsafe or not fully functional the decision can be made to repair the appliance. If it is uneconomic to repair the appliance then it should be kept separate as 'non re-usable WEEE' and transferred to a licensed waste treatment plant.

If the decision is made to repair the appliance it should preferably be repaired with original parts or with replacement parts that have been approved by the manufacturer. If the appliance is repaired with non-original parts or with replacement parts that have not been approved by the manufacturer then the re-use centre has to guarantee that the appliance complies with all the applicable legislation and norms that apply for appliances that are being put on the market. In this case the party that is making the appliance available on the market for re-use shall ensure that the original manufacturer cannot in any way be held accountable for the appliance that was re-used and has to offer the necessary legal guarantees for this²⁹.

Re-use centres need to repair the appliances according to a documented repair procedure.

Refrigerators, freezers and portable air conditioning units have to be repaired in accordance with the applicable legislation for coolants, e.g., the applicable training requirements for personnel have to be respected.

3.2.6 Deleting personal data

All the personal data has to be erased from IT equipment before it can be re-used. Certified software has to be used for this.

3.2.7 Software

ICT equipment, including computers, always have to have a working operating system. Unless the OS is open source software it always has to be licensed. Copyrighted software for which the license is missing has to be removed.

3.2.8 Does the appliance meet all the re-use criteria?

All appliances which will be made available on the market by the re-use centre have to meet the applicable re-use criteria as set out in Chapter 2.

3.2.9 Warranty

In accordance with the law on consumer protection in the frame of the sale of consumer goods³⁰, re-use centres need to give consumers a warranty of at least one year per appliance, starting from the date of delivery.

29 See Article 6 §1 of the environmental policy agreement regarding the acceptance obligation for waste electrical and electronic equipment of 17 October 2008.

30 Law concerning the protection of consumers in the frame of the sale of consumer goods (1 September 2004).

4 Transboundary shipment of used EEE

Used EEE can be considered as a (second-hand) product in the context of transboundary shipment, in so far the used EEE meets the re-use criteria and the shipment meets the 'minimum requirements for shipments', as specified in Annex 6 of Directive 2012/19/EU.

If the re-use criteria and the 'minimum requirements for shipments' are not met, this used EEE should be regarded as waste. This means amongst others that the transboundary shipment of this WEEE, according to Regulation 1013/2006/EC, is subject to the notification procedure, and that there is an exportban to countries to which the OECD Decision does not apply.

Annex 1: Appendix 5 of the 'Guidance document on the environmentally sound management of used and end-of-life computing equipment' (PACE, 15 March 2011, p.45-46):

Appendix 5

Functionality Tests for Used Computing Equipment

Computing Equipment	Functionality Tests	Test results
Central Processing Units (CPUs), including Desk Top PCs	<p>Power on self test (POST)¹ Switching on the computer and successfully completing the boot up process. This will confirm that the principal hardware is working, including power supply and hard drive.</p> <ul style="list-style-type: none"> • A working monitor would need to be used if none present • Ensure that cooling fans are functioning 	<p>Computer should boot up successfully. Computer should respond to keyboard and mouse input. Cooling fans should operate normally.</p>
Laptops/notebooks	<p>Power on self test (POST)² Switching on the laptop and successfully completing the boot up process. This will confirm that the principal hardware is working, including power supply and hard drive.</p> <ul style="list-style-type: none"> • Test screen • Test battery functionality • Ensure the display is fully functional • Ensure cooling fan(s) is functional 	<p>Laptop should boot up successfully. Laptop should respond to keyboard and mouse input.</p> <p>Display turns on during boot up. Image should be clear and colors contrast and brightness correct with no screen burned images, scratches or cracks (see also below for display devices).</p> <p>Laptop Battery able to retain a minimum of 1 hour³ of run time; or battery tested to determine the Full Charge Capacity in watt-hours also with a minimum of 1 hour remaining (see Laptop batteries section below, paragraph 120)</p>

¹ The Power on self test (POST) is automatically engaged when a personal computer or laptop is switched on. The POST is a software based system integral to all PCs and laptops. The POST will check that the hardware systems of the computer are functioning, including the hard disk drive, computer ports, the motherboard, and video cards. The POST will deliver an audible beep or set of beeps to the refurbisher/operator should any of the hardware systems be faulty. On line guidance exists for better understanding of the beep codes. For example see: <http://www.poweronselftest.com/> and <http://www.computerhope.com/beep.htm>

² Ibid

³ 1 hour is a minimum charge a battery should hold, although some users of laptops may request more useable runtime. It should be noted that some end users will also be able to make use of batteries with less capacity, for example a battery able to hold 40 minutes capacity need not be discarded, and can have use for those principally connecting the laptop to a reliable electricity supply using the charger, however, for the purposes of this guideline and for export, batteries must hold at least a one hour charge.

Computing Equipment	Functionality Tests	Test results
Keyboards	Connect to computer and ensure they successfully interface. Test keys for functionality.	Computer should respond to keyboard input. Keyboard should have no missing or non functioning keys.
Mice	Assess mouse casing, cable and parts. Plug into computer or laptop to assess functionality.	Mouse should have all parts present (e.g., the roller ball). Computer should respond to mouse input. Visible cursor on screen should not judder.
Cables and power cords	Assess cable insulation and inspect plugs.	Cabling and plugs should be complete and free of damage, e.g., has no cracked insulation
Display devices	Plug in display and test the picture quality for pixels, color, contrast and brightness. Software based diagnostic testing for display devices are readily available on line ⁴ , and should be used Visual inspection for screen burn (CRTs) or “image persistence” (flat screens), scratches or other damage to screen or housing. Cabling should be inspected and present.	Display devices The picture should not be fuzzy, or have damaged pixels, or be too dark. LCD backlights should all function. Colors, brightness, hue and straightness of lines should be considered. The software diagnostic test should be positive. Cabling should free from damage.
Laser and inkjet printers	A test page can be successfully printed. This can be standalone but also from a computer or local area network to assess connectivity. For inkjet printers, check that the ink heads are not clogged with dry ink.	Printers should successfully print a test page and not jam, or produce smudged or incomplete copy.
Components (removed from equipment) including mother boards, other circuit boards, sound cards, graphics cards, hard drives, power supplies and cords/ cables	Components should be tested for functionality either before removal from the host computer or laptop, or by insertion in a test bench computer using diagnostic software, or a known working device as applicable.	Components should be fully functional Power supplies and cords/ cables should be complete and free of damage, e.g., has no cracked insulation

⁴ See for example: <http://www.softpedia.com/progDownload/Nokia-Monitor-Test-Download-464.html>

Annex 2: Paragraph 2.2 of the 'Guideline for the transboundary movement of collected mobile phones' (MPPI, 25 March 2009, p.13-14):

2.2 Evaluation, Testing and Labelling

The Evaluation and/or Testing and Labelling decision point, whether functionality has been tested or not, may include evaluation and/or testing for defects that materially affect the mobile phones functionality, such as whether the device powers up, and or whether it performs an internal set-up routine and/or self-checks, and/or whether it communicates; physical damage that impairs functionality or safety may include but is not limited to whether the mobile phone screen is broken, cracked, heavily scratched or marked, or that the image is distorted. Used mobile phones destined for re-use, including repair, refurbishment or upgrading should be packaged in an appropriate protective manner.

Batteries that are unable to be charged or to hold power and the absence of sufficient packaging to protect the mobile phones from damage may also be considered in determining whether collected phones are being managed for re-use. The functionality evaluation and/or test should determine whether the collected mobile phones are suitable for reuse as is, require repair or refurbishment before reuse, or whether the used mobile phones are suitable only for the material recovery and recycling.

For testing the functionality of a collected mobile phone the test numbers can be applied¹. At a minimum the following basic tests should be applied as an efficient minimum test procedure:

"Air" or "Ping" (automatic phone response) test. The tester is to dial the above-mentioned number, which will then "ping" a network and receive a customer service response from the nearest network. In North America the number is "611". If a response is received then it can be assumed that the mobile phone is essentially functional.

"Loop back test". The tester to blow or speak into the handset, whilst on a call, to determine whether or not the microphone and speaker are functional.

Microphone and speaker test. The tester is to blow or speak into the microphone and listen to see if the same input sound can be heard out of the speaker. If this is working, then the sound system of the phone can be considered as functional.

Screen and keypad test: The tester is to turn on the phone so that the screen is displayed and the keypad is punched to show that it is functioning for each key. If the numbers appear on the screen for each key then the screen and keypad can be considered as functional.

¹¹ Test-numbers of other regions may be available

Battery test: Battery should be charged (either through the phone it accompanies or by using commercial charging and measuring equipment) and tested with a volt meter to determine whether or not the battery is functional and hold an appropriate charge¹². The battery will be tested to guarantee accepting and holding a charge and operate correctly under load of standard mobile phone. In addition, the test will include a guarantee that the battery protection circuit is present and functioning properly. All batteries tested for reuse possibilities will only be OEM product and not created from used or recycled power.

¹ In other locations other numbers are used.