

# PAS 141:2010

## Specification for the processing for reuse of waste and used electrical and electronic equipment (WEEE and UEEE)

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## Foreword

### Publishing information

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Acknowledgement is given to the following organizations that were involved in the development of this PAS as members of the Steering Group:

- Association of Manufacturers of Domestic Appliances
- British Retail Consortium
- British Standards Institution (Healthcare & Testing Services)
- Chartered Institute of Wastes Management
- Community Recycling Network
- Environment Agency
- Intellect
- Mobile Takeback Forum
- WEEE Advisory Body

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The PAS process enables a specification to be rapidly developed in order to fulfil an immediate need in industry. A PAS may be considered for further development as a British Standard, or constitute part of the UK input into the development of a European or International Standard.

### Relationship with other publications

This PAS was developed from the WEEE Advisory Body's *Specification for the reuse of waste electrical and electronic equipment (WEEE) and used electrical and electronic equipment (EEE)*.

### Environmental management system

Processes used by organizations involved in the reuse of WEEE and UEEE need to be designed to identify and minimize the impact they have upon the natural environment. Users of this PAS are advised to consider the desirability of working to an environmental management system such as BS EN ISO 14001 or the Eco-Management and Audit Scheme (EMAS).

### Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

*Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.*

## Contractual and legal considerations

Attention is drawn to the WEEE Directive (2002/96/EC) [1], the Waste Framework Directive (2008/98/EC) [2] and other relevant legislation.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

**Compliance with a PAS cannot confer immunity from legal obligations.**

# 0 Introduction

## 0.1 Background

The WEEE Directive [1] aims to minimize the impact of EEE on the environment, by increasing reuse and recycling and reducing the amount of waste electrical and electronic equipment (WEEE) and used electrical and electronic equipment (UEEE) going to landfill.

Reuse of WEEE is encouraged by the WEEE Directive. Reuse is viewed as a means of diverting material from the waste stream and is seen as preferable to recycling in the European Union waste hierarchy, commonly referred to as “reduce, reuse, recycle”.

Early experience in the management, treatment and control of WEEE and UEEE in the UK saw stakeholders identify the need for the development of standards to increase the amount of EEE being processed for reuse in the UK.

## 0.2 EEE, WEEE, UEEE and REEE

EEE is defined (as given in **3.1.3**) as equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields and designed for use with a voltage rating not exceeding 1 000 V for alternating current and 1 500 V for direct current.

UEEE is EEE that has been put into service and used but has subsequently been taken out of service and not yet discarded as waste (see **3.1.12**).

*NOTE UEEE includes, for example, second hand and pre-owned equipment, excess and obsolete equipment, service and warranty returns and display stock.*

WEEE is EEE that the holder discards or intends to or is required to discard and so is regarded as waste (see **3.1.15** and **3.1.13**). Attention is drawn to the WEEE Directive [1], which gives requirements on how WEEE is handled, tracked and reported on.

Reuse EEE (REEE) is equipment that has been prepared for reuse to produce equipment and/or components that are electrically safe and functionally operational as originally intended.

*NOTE Attention is drawn to current national and international standards on EEE and relevant legislation.*

The term REEE is used to differentiate equipment that has been processed for reuse and determined as electrically safe and functionally operation as originally intended from WEEE and UEEE that hasn't been and also from new EEE.

### 0.3 The reuse process

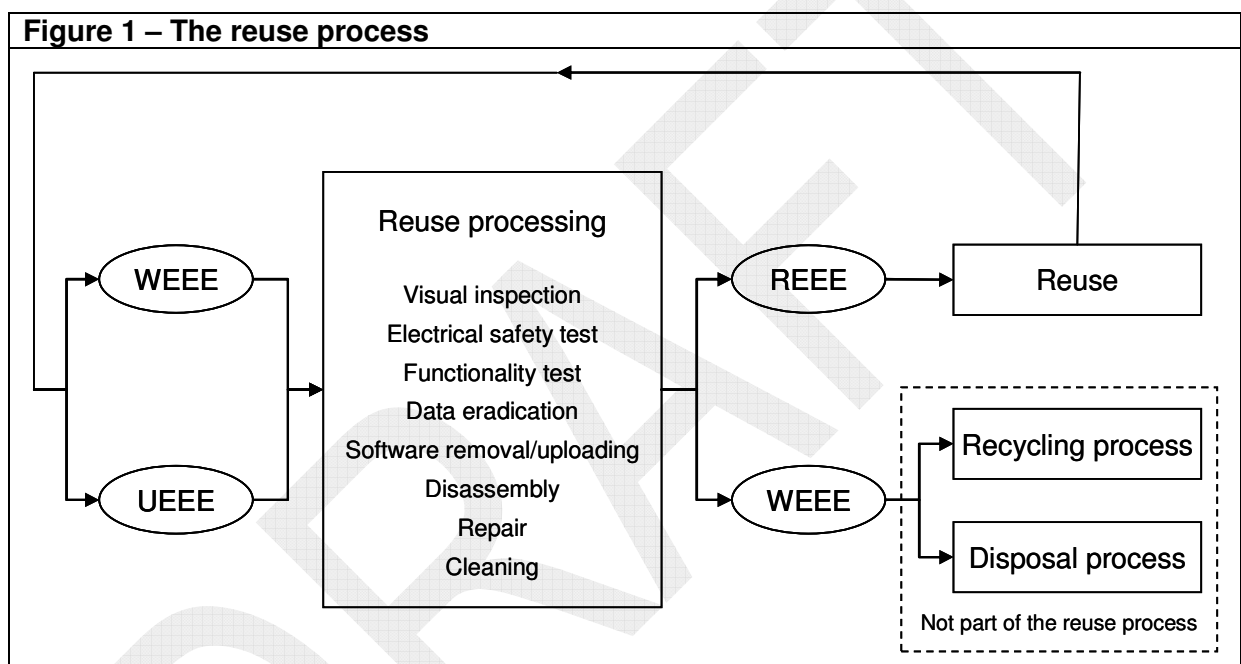
The reuse process is illustrated in Figure 1. WEEE and UEEE enter the reuse process.

The equipment and its constituent components are prepared for reuse through processing such as visual inspection, electrical safety and functionality testing, data eradication, software removal/loading, repair and cleaning. The output of the reuse process is either REEE or WEEE.

REEE can be sold or donated for further use. Following its reuse, it is possible for REEE to re-enter the reuse process as WEEE or UEEE.

WEEE is assigned for recycling or disposal. Attention is drawn to the WEEE Directive [1], which gives requirements on how WEEE is handled, tracked and reported on.

*NOTE 2 The recycling and disposal process is beyond the scope of this PAS.*



Equipment that enters the reuse process as WEEE and leaves as REEE ceases to be classified and regarded as waste. Waste records of such equipment and the weight recovered from the waste stream can be duly amended and, where required, reported to regulatory authorities.

Equipment that enters the reuse process as UEEE and leaves as WEEE (as it cannot be repaired because of technical and/or economic constraints), will be subject to the WEEE Directive [1]. Equipment can be identified as WEEE and assigned for recycling or disposal at any stage of the reuse process.

### 0.4 Export for reuse

The UK Government, the European Union and the United Nations have identified the illegal export of WEEE as leading to problems of health and safety and environmental contamination in developing countries. There is a need to differentiate between illegal exports being misdescribed as equipment for reuse and tested bona fide exports.

## 0.5 Aims

The main aims of this PAS are to:

- a) encourage the reuse of WEEE as favoured by environmental groups and promoted by the WEEE Directive [1], Article 1;
- b) reduce WEEE to landfill and incineration by diverting WEEE to be prepared for reuse;
- c) assure and protect consumers of the quality and safety of REEE as differentiated from untested WEEE and UEEE;
- d) deter the export of equipment misdescribed as being fit for reuse to developing countries that has led to dumping of large amounts of non working and difficult to dispose of WEEE with associated problems in dealing with the hazardous elements of WEEE;
- e) provide a tool for identifying REEE and constituent components that have been subject to the tests set out in this PAS from untested WEEE and UEEE;
- f) encourage job creation in organizations involved in WEEE and UEEE reuse.

## 1 Scope

This PAS specifies requirements for managing the reuse process for waste and used electrical and electronic equipment (WEEE and UEEE).

It covers the reuse of equipment and components.

It does not cover the recycling process, although it does include requirements for assigning WEEE and UEEE for recycling.

It is applicable to organizations that process WEEE and UEEE and prepare such equipment for reuse.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

HB 10194, *Code of practice for in-service inspection and testing of electrical equipment*. The Institution of Engineering and Technology.

CESG IAS 5, *Secure sanitisation of protectively marked or sensitive information*. Cabinet Office and Her Britannic Majesty's Communications Electronic Security Group.

## 3 Terms, definitions and abbreviated terms

### 3.1 Terms and definitions

For the purposes of this PAS, the following terms and definitions apply.

#### 3.1.1

##### **collection**

gathering of **waste**, including the preliminary sorting and preliminary storage of **waste** for the purposes of transport to a waste treatment facility

[The Waste Framework Directive (2008/98/EC) [2], Article 3(10)]

#### 3.1.2

##### **disposal**

operation which is not **recovery** even where the operation has, as a secondary consequence, the reclamation of substances or energy

[The Waste Framework Directive (2008/98/EC) [2], Article 3(19)]

*NOTE* A list of **waste** operations that may lead to **disposal** is given in the Waste Framework Directive (2008/98/EC) [2], Annex I.

#### 3.1.3

##### **electrical and electronic equipment (EEE)**

equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields and designed for use with a voltage rating not exceeding 1 000 V for alternating current and 1 500 V for direct current

[Derived from the WEEE Directive (2002/96/EC) [1], Article 3(a)]

#### 3.1.4

##### **hazardous waste**

**waste** which displays one or more hazardous properties

[The Waste Framework Directive (2008/98/EC) [2], Article 3(2)]

*NOTE* Hazardous properties include being as flammable, toxic, and carcinogenic. A list of hazardous properties is given in the Waste Framework Directive (2008/98/EC) [2], Annex III.

#### 3.1.5

##### **original equipment manufacturer (OEM)**

natural or legal person who manufactures a product or has a product designed or manufactured, and markets that product under their name or trademark

[Derived from Market Surveillance and Accreditation Regulations (765/2008) [3], Article 2(3)]

#### 3.1.6

##### **reuse electrical and electronic equipment (REEE)**

**UEEE** or **WEEE** that has been processed for reuse to produce equipment that is electrically safe and functionally operational as originally intended

**3.1.7****recovery**

operation the principal result of which is **waste** serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or **waste** being prepared to fulfil that function, in the plant or in the wider economy

[The Waste Framework Directive (2008/98/EC) [2], Article 3(15)]

*NOTE 1 Recovery includes, for example, **reuse**, **recycling** and energy recovery. A list of waste operations that may lead to **recovery** is given in the Waste Framework Directive (2008/98/EC) [2], Annex II.*

*NOTE 2 Recovery is a term often used incorrectly to mean the collection of waste. Collection is defined in 3.1.1.*

**3.1.8****recycling**

reprocessing in a production process of the **waste** materials for the original purpose or for other purposes, but excluding energy **recovery** which means the use of combustible **waste** as a means of generating energy through direct incineration with or without other **waste** but with **recovery** of the heat

[The WEEE Directive (2002/96/EC) [1], Article 3(e)]

**3.1.9****repair**

correction of a technical fault to prepare the equipment for **reuse**

*NOTE This may involve the addition of missing or the replacement of faulty components by equivalent components.*

**3.1.10****reuse**

operation by which **WEEE** and **UEEE** or constituent components are used for the same purpose for which they were conceived, including the continued use of the equipment or constituent components which are returned to collection points, distributors, recyclers or manufacturers

*NOTE The definition has been expanded to include **UEEE**.*

[Derived from the WEEE Directive (2002/96/EC) [1], Article 3(d)]

**3.1.11****treatment**

any activity after the **WEEE** has been handed over to a facility for depollution, disassembly, shredding, **recovery** or preparation for **disposal** and any other operation carried out for the **recovery** or **disposal** or both of the **WEEE**

[The WEEE Directive (2002/96/EC) [1], Article 3(h)]

**3.1.12****UEEE**

**EEE** that has been put into service and used but has subsequently been taken out of service and not yet discarded as **waste**

*NOTE This includes, for example, second hand and pre-owned equipment, excess and obsolete equipment, service and warranty returns and display stock.*

**3.1.13****waste**

object which the holder discards or intends to or is required to discard

[Derived from the Waste Framework Directive (2008/98/EC) [2], Article 3(1)]

**3.1.14****waste management**

**collection**, transport, **recovery** and **disposal** of **waste**, including the supervision of such operations and the after care of disposal sites and including actions taken as a dealer or broker

[Derived from the Waste Framework Directive (2008/98/EC) [2], Article 3(9)]

**3.1.15****waste electrical and electronic equipment (WEEE)**

**EEE** which is **waste**, including all components, subassemblies and consumables which are part of the product at the time of discarding

[Derived from the WEEE Directive (2002/96/EC) [1], Article 3(b)]

**3.2 Abbreviations**

EEE	electrical and electronic equipment
EMC	electromagnetic compatibility
OECD	Organisation for Economic Co-operation And Development
OEM	original equipment manufacturer
PCB	polychlorinated biphenyls
REEE	reused electrical and electronic equipment
UEEE	used electrical and electronic equipment
WEEE	waste electrical and electronic equipment

**4 Handling**

*NOTE* Attention is drawn to the WEEE Directive [1], which requires that WEEE and constituent components are handled and transported in a way which facilitates the reuse and recycling of those components or whole appliances capable of being reused or recycled by avoiding their damage. Damage may include scratches or discolouration to external surfaces, impairment due to vibration, falling objects or leakages/spillages from other equipment/components, infestation or ingress.

**4.1 Tracking**

On receipt of the equipment by the reuse organization, each piece of equipment shall be uniquely identified and tracked through the reuse process and records maintained to demonstrate completed and outstanding reuse processing.

*NOTE 1* Reuse processing is specified in Clause 5.

*NOTE 2* Once equipment or constituent components are identified as waste, it does not need to be uniquely tracked.

## 4.2 Segregation and storage

**4.2.1** Equipment and components shall be segregated and stored in accordance with a documented segregation and storage process.

**4.2.2** The segregation and storage process shall cover how to identify, segregate and store equipment and components under the following categories:

a) WEEE and UEEE;

*NOTE* Equipment may be identified as waste by visual inspection or following testing.

b) untested and tested;

c) for reuse, recycling and disposal;

d) equipment type (e.g. refrigerators, computers, mobile telephones);

e) non-hazardous and hazardous waste.

*NOTE 1* Attention is drawn to waste management regulations that require equipment for material reclamation by recycling to be stored in specific types of containers, for example batteries removed from equipment should have sealable containers to prevent water damage.

*NOTE 2* The mass of equipment and components should be considered in storing. Heavy equipment or components should be stored in such ways as to prevent them crushing or falling upon and damaging smaller/less robust equipment or components.

*NOTE 3* Equipment and components can contain materials and chemicals hazardous to the natural environment, such as asbestos, brominated flame retardants, electrolyte capacitors, heavy metals and PCBs.

## 4.3 Protection

*NOTE* Any equipment/component packaging should be reused, recovered or recycled.

**4.3.1** Equipment and/or components shall be protected in transit and during processing to maximize potential for reuse.

*NOTE* For example, by use of packaging and packing to prevent vibration, electrical contact and risk of shorting and collision between loose equipment.

**4.3.2** Where accessories, peripherals and internal furniture are available, they shall accompany the equipment through the reuse process.

*NOTE* For example, a television with its remote control, a fridge with its internal shelves and drawers (furniture), a laptop with its power supply.

**4.3.3** Components that can be damaged by static electricity shall be protected from electrostatic discharge.

*NOTE* Components that can be damaged by static electricity include, for example, computer memory and electronic circuitry.

## 5 Reuse processing

### 5.1 Visual inspection

Each piece of equipment shall be visually inspected in accordance with a documented visual inspection test to determine whether the equipment or component(s) are to be assigned for reuse or for recycling or disposal.

*NOTE The documented visual inspection test may include, for example, criteria for assigning for recycling/disposal:*

- a) cracked casing or sharp edges that could cut or scratch;*
- b) exposed wiring/components that could lead to electric shock injury and risk of fire;*
- c) water or battery damaged equipment as it is dangerous to connect such equipment to an electrical power source;*
- d) missing accessories, peripherals and internal furniture that will impair functionality and are not easily replaceable;*
- e) cosmetic damage (blemishes may be acceptable depending upon equipment type and intended market);*
- f) hygiene factors on equipment of a personal/medical nature.*

*Equipment which fails to meet any of the above criteria, may be subject to repair and/or sterilization to facilitate its reuse.*

### 5.2 Electrical safety

**5.2.1** The equipment shall be electrically safe such that it can be connected to a power supply without the risk of electric shock or fire.

**5.2.2** Electrical safety shall be verified by testing in accordance with HB 10194.

*NOTE HB 10194 comprises different tests for different types of equipment.*

**5.2.3** Test equipment shall be calibrated in accordance with the manufacturers' instructions.

### 5.3 Functionality

**5.3.1** The equipment's functionality shall meet the ordinary use for which the product was originally placed on the market.

*NOTE The functionality specified in the manufacturer's user manual or technical manuals should be used and if these are not available with the equipment, then online manuals may be consulted.*

**5.3.2** Each piece of equipment shall be tested for functionality in accordance with a documented functionality test.

*NOTE Product specific protocols may be developed detailing functionality tests for specific categories of equipment. These may exist or need to be developed for products such as mobile telephones, computers, refrigerators, freezers, ovens.*

**5.3.3** Where product specific protocols are used, they shall be referred to in the documented functionality test.

**5.3.4** Test equipment shall be operated in accordance with the manufacturers' instructions.

*NOTE* Equipment that is incomplete may be transferred from one organization to another for continuance of repair but transboundary movement may be restricted where non-fully functional equipment may be considered waste.

## 5.4 Data

*NOTE 1* The functionality test and data eradication may be conducted as one combined part of the process.

*NOTE 2* Attention is drawn to the Data Protection Directive (95/46/EC) [4].

**5.4.1** Data stored within data bearing equipment/components shall be eradicated in accordance with a documented data eradication procedure.

**5.4.2** The data eradication procedure shall document which data eradication tools are to be used.

**5.4.3** Data eradication tools to be used with ICT equipment shall conform to CESG IAS 5. For other data bearing equipment, data shall be eradicated in accordance with the manufacturer's guidance.

**5.4.4** Faulty data bearing equipment/components or where data eradication cannot be verified to have been carried out, the data bearing component shall be destroyed to prevent unauthorized access to confidential data.

## 5.5 Software

**5.5.1** Non-transferable copyrighted software on equipment/components shall be removed in accordance with either a documented software removal procedure or the software's own removal command.

**5.5.2** Where software is removed from a piece of equipment/component, any software licence stickers or certificates shall be removed.

**5.5.3** Where software is integral to the equipment/component and requires replacement (e.g. because of corruption), the software uploaded shall have the same operational rating as the original product.

## 5.6 Disassembly

*NOTE 1* Equipment and components may require disassembly for testing, repair or recycling activities to proceed. Disassembly should be carried out with due regard for the removal of components in such a way as to minimize the risk of damage to the components where such components are to be considered for reuse.

Where a piece of equipment/component is disassembled, it shall be disassembled in accordance with a documented disassembly process that identifies any associated hazards, risks and controls to reduce risk.

*NOTE 2* Risks associated with disassembly may include:

- a) residual electrical charge stored in equipment that could lead to electric shock;
- b) sharp edges in internal components that may cut or puncture;
- c) the weight of equipment with risks in lifting and handling and risk of harm from falling/dropped equipment;

- d) chemicals and materials that may be hazardous from occasional or long-term exposure;
- e) bio-hazards from food, chemicals or medical equipment that were previously stored in the piece of equipment.

## 5.7 Repair

*NOTE 1 Repair is encouraged to try to divert and/or recover equipment from the waste stream. Equipment may be identified as in need of repair by the electrical safety and functionality tests as given in 5.2 and 5.3 respectively.*

*NOTE 2 Attention is drawn to the differing regulatory requirements operating in different international markets into which the equipment/component may be resold.*

### 5.7.1 OEM product warranty

Where products are still under the OEM's product warranty, repair shall only be carried out in accordance with the OEM's warranty conditions.

*NOTE Failure to carry out repair in accordance with the OEM's warranty conditions could invalidate the warranty. OEM's warranties could be invalidated where some, or all, of the following conditions occur:*

- a) the work is carried out by unauthorized persons or service facilities;
- b) where components or software/firmware is used other than that approved by the OEM;
- c) product type or serial numbers have been removed, altered or damaged;
- d) the equipment has been damaged by unapproved ancillary equipment.

### 5.7.2 Replacement components

*NOTE Failure to use appropriate replacement components has the potential to alter a piece of equipment's compliance with both operational and regulatory (including safety) standards.*

**5.7.2.1** Replacement components used in the repair of a piece of equipment shall have as a minimum the same functionality as the OEM component being replaced.

*NOTE For non-safety or system critical functions, pattern components may be used. Pattern components are non-OEM components that have comparable quality and serve the same purpose as the relevant OEM component and are used where OEM components are not available.*

**5.7.2.2** For safety or system critical functions, genuine, generic or reused genuine components shall be selected and used in accordance with the OEM's instructions.

*NOTE Safety or system critical functions include any function where impaired functionality could result in injury or harm, for example, electrical power supply, heat controls, speed controls, sound controls, safety switches.*

### 5.7.3 Electromagnetic compatibility

Where components critical to the protection of safety or radio frequency interference have been replaced with components different from those specified by the OEM, the equipment shall be tested for electromagnetic compatibility in accordance with the relevant EMC standards.

*NOTE Attention is drawn to the CE Marking Directive [5] and EMC Directive [6].*

### 5.7.4 RoHS compliant equipment and components

*NOTE 1 The RoHS restrictions apply to equipment and components that are placed on the market in the EU after 1 July 2006.*

*NOTE 2 RoHS compliant components may be used in non-RoHS compliant equipment so long as they meet the electrical safety and functionality requirements given in 5.2 and 5.3 respectively.*

*NOTE 3 Adding non-RoHS compliant components may invalidate the RoHS compliance status of such equipment.*

Where equipment is compliant with the EC Restriction of Hazardous Substances Directive (RoHS) [7], RoHS compliant components shall be used in the repair of such equipment.

### 5.7.5 Retesting

Following repair, equipment/components shall be (re)tested for electrical safety in accordance with 5.2 and for functionality in accordance with 5.3.

*NOTE 1 The equipment may be repairable technically but may be deemed “beyond economic repair” where the costs of the repair may be greater than the revenue from the resale value of the equipment. Whether equipment is repairable should be determined based upon knowledge of the prevailing conditions of the markets in which they operate.*

*NOTE 2 Attention is drawn to the regulations pertaining to wastes management and environmental permitting [2].*

### 5.8 Cleaning

*NOTE The equipment may be cleaned cosmetically or it may be left to the new user to undertake this.*

**5.8.1** All former user identification (e.g. asset tags, company logos) shall be removed.

**5.8.2** Manufacturers brand labels and rating plates shall not be removed as such information will be of use to new users.

*NOTE Care should be taken to avoid accidental removal of brand labels and rating plates whilst cleaning the equipment.*

**5.8.3** Bio-hazard residues shall be cleaned from food preparation and storage equipment.

## 6 Reuse

### 6.1 General

*NOTE Any equipment/component that has been processed in accordance with Clause 5 and identified as REEE, may be offered for sale or donation.*

The reuse organization shall maintain records of the organization(s) to which they sell or donate their reused equipment/components.

### 6.2 Reuse label

A reuse label shall be applied to each piece of equipment/component that has been processed in accordance with Clause 5 and identified as REEE. The label shall be indelible and durable, and contain the following minimum information:

- a) “Processed by a PAS 141:2010 compliant organization”<sup>1)</sup>;
- b) name and contact details of the reuse organization;
- c) unique equipment identification number (see 4.1);
- d) date(s) of the test(s); or if conducted over more than one day, the date(s) of the final test(s);
- e) where authorized, the conformity mark and certificate number of a third party certification body.

### 6.3 Supporting documentation

**6.3.1** The reuse organization shall maintain the supporting documentation for each piece of equipment that has been processed and identified as REEE.

**6.3.2** Supporting documentation shall contain the following minimum information:

- a) information provided on the reuse label (see 6.2);
- b) reference to the reuse processing carried out in accordance with PAS 141:2010:
  - 1) visual inspection test (see 5.1);
  - 2) electrical safety test (see 5.2 and 5.7.4);
  - 3) functionality test (see 5.3 and 5.7.4);
  - 4) data eradication (see 5.4);
  - 5) software removal/uploading (see 5.5);
  - 6) electromagnetic compatibility test, where relevant (see 5.7.3);
  - 7) cleaning (see 5.8).

**6.3.3** The supporting documentation shall be made available to customers of the reuse organization upon their request.

### 6.4 Description of reused equipment/components

Any equipment/component that is offered for reuse shall be referred to as “reused” equipment or “REEE”.

*NOTE 1 This applies to any sales literature and promotions, including websites and direct mailing.*

*NOTE 2 “Reused” is presently also known as “refurbished”, “used” and “second hand”. For the purposes of PAS 141, only the term “reused” should be used for clarity and for alignment with the terminology used in the WEEE Directive (2002/96/EC) [1].*

### 6.5 Product warranty

The sale of each reused piece of equipment/component shall be covered by a product warranty with a defined timeframe of at least 28 days from date of supply to the new user.

*NOTE 1 The product warranty may be open to negotiation to cover longer defined periods as the purchaser may be a reseller or retailer who chooses to offer their own product warranty to supplement the*

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<sup>1)</sup> Marking PAS 141:2010 on or in relation to a product represents an organization’s declaration of conformity, i.e. a claim by or on behalf of the organization that the product meets the requirements of the standard. The accuracy of the claim is solely the claimant’s responsibility. Such a declaration is not to be confused with third-party certification of conformity.

*sale warranty. Providing a product warranty provides the customer with confidence in the product, indicating that the equipment has been verified as fit for reuse.*

*NOTE 2 The product warranty should include that if the reused equipment fails to perform as specified during the warranty period, the product will either be repaired, replaced or any purchase cost refunded, whichever is agreed in the warranty provision at the time of sale. The aim is to ensure reusable products are offered for sale to reassure new users of the equipment and to avoid doubt that any equipment exported is waste.*

*NOTE 3 Attention is drawn to the warranty regulations affecting reused equipment/component, which may be country specific.*

## 6.6 Export for reuse

*NOTE 1 Reused EEE and refurbished WEEE designed for a particular market, or region, will need to be compliant with standards and regulations relevant to that market or region. These standards include electrical power supply (for example equipment may be compatible with 110 or 240 volts or switchable between either).*

*NOTE 2 Attention is drawn to legislation covering the export of WEEE, especially hazardous WEEE such as the European Waste Shipment Regulations [8] and the Basel Convention Guidance document on transboundary movements of hazardous wastes destined for recovery operations, Annex 1, Normative references [9]. The Basel Convention specifies requirements for the preparation for shipment of WEEE and components of WEEE destined for materials recovery and recycling.*

## 7 Recycling and disposal

*NOTE 1 The sorting, handling, storage and processing of equipment/components by reuse organizations may generate further waste streams including failed/unwanted equipment or components for disposal or recycling.*

*NOTE 2 Requirements for handling equipment for recycling and disposal is given in Clause 4.*

**7.1** Any equipment/component that has been processed in accordance with Clause 5 and identified as WEEE shall be assigned for recycling or disposal.

**7.2** The reuse organization shall maintain records of the organization(s) to which they transfer their waste and shall hold copies of any waste transfer notes recording all waste transferred to other organizations for processing and/or disposal.

## 8 Operational management

### 8.1 Legal and other requirements

The reuse organization shall document how it evaluates and achieves compliance with its legal and other requirements.

### 8.2 Permits, licenses and other authorizations

*NOTE Attention is drawn to requirements for permits, licenses, exemptions and other authorizations required by the regulatory authorities in regards to waste management, the environment and human health and safety.*

The reuse organization shall identify at a minimum annually which permits, licenses and exemptions are required by them to operate and make available to interested parties.

### 8.3 Competence

*NOTE* Competence means access to the requisite tools, equipment and information is provided so that people working within and for the reuse organization can perform their jobs.

**8.3.1** The reuse organization shall identify the competences needed to carry out the defined tasks.

**8.3.2** The competence of employees and contractors shall be assessed and recorded and shall include identifying any qualifications, training and experience of employees and contractors held and to be provided.

**8.3.3** The management of the reuse organization shall monitor performance and verify employees, volunteers and contractors are capable of carrying out the defined tasks.

### 8.4 Health and safety

**8.4.1** Written instructions, photographs and diagrams shall be used to train people engaged in the reuse process to prevent injury.

**8.4.2** Reuse organizations shall ensure that all persons engaged in reuse operations are provided with training on health and safety at work, including the use of test equipment, materials handling equipment, handling of hazardous materials and how to deal with foreseeable emergencies that may arise.

**8.4.3** Material safety data sheets shall be obtained for all cleaning materials used in the reuse process.

*NOTE 1* BS OHSAS 18001 provides requirements for an occupational health and safety management system.

*NOTE 2* Attention is drawn to legislation on health and safety at work [10].

*NOTE 3* Cleaning materials should be used that are not harmful to persons involved in reuse operations, the potential new user or the environment.

### 8.5 Records and record keeping

**8.5.1** The reuse process shall be documented in paper or electronic format with acceptance/rejection criteria recorded.

**8.5.2** Records of the inspections, testing and assessment of equipment and components processed by the reuse organization (including those assigned for recycling or disposal) shall be maintained.

**8.5.3** Records shall document details of the reuse processing and outcomes for:

- a) visual inspection test (see 5.1);
- b) electrical safety test (see 5.2 and 5.7.4);
- c) functionality test (see 5.3 and 5.7.4);
- d) data eradication (see 5.4);

- e) software removal/uploading (see 5.5);
- f) electromagnetic compatibility test, where relevant (see 5.7.3);
- g) cleaning (see 5.8).

**8.5.4** Records of each piece of equipment/component processed in the reuse process including those assigned for recycling or disposal shall be made available to customers of the reuse organization.

*NOTE Attention is drawn to regulatory requirements for record keeping.*

## Bibliography

### Standards publications

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN ISO 14001, *Environmental management systems – Requirements with guidance for use*

BS OHSAS 18001, *Occupational health and safety management systems – Requirements*

### Other publications

[1] EUROPEAN COMMUNITIES. Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE) - Joint declaration of the European Parliament, the Council and the Commission relating to Article 9. (The WEEE Directive). Luxembourg: Office for Official Publications of the European Communities.

[2] EUROPEAN COMMUNITIES. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives. (The Waste Framework Directive). Luxembourg: Office for Official Publications of the European Communities.

[3] EUROPEAN COMMUNITIES. Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93. Luxembourg: Office for Official Publications of the European Communities.

[4] EUROPEAN COMMUNITIES. Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (Data Protection Directive). Luxembourg: Office for Official Publications of the European Communities.

[5] EUROPEAN COMMUNITIES. Council Directive 93/68/EEC of 22 July 1993 amending Directives 87/404/EEC (simple pressure vessels), 88/378/EEC (safety of toys), 89/106/EEC (construction products), 89/336/EEC (electromagnetic compatibility), 89/392/EEC (machinery), 89/686/EEC (personal protective equipment), 90/384/EEC (non-automatic weighing instruments), 90/385/EEC (active implantable medicinal devices), 90/396/EEC (appliances burning gaseous fuels), 91/263/EEC (telecommunications terminal equipment), 92/42/EEC (new hot-water boilers fired with liquid or gaseous fuels) and 73/23/EEC (electrical equipment designed for use within certain voltage limits). Luxembourg: Office for Official Publications of the European Communities.

[6] EUROPEAN COMMUNITIES. Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States

relating to electromagnetic compatibility and repealing Directive 89/336/EEC. Luxembourg: Office for Official Publications of the European Communities.

[7] EUROPEAN COMMUNITIES. Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. Luxembourg: Office for Official Publications of the European Communities.

[8] EUROPEAN COMMUNITIES. Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste. Luxembourg: Office for Official Publications of the European Communities.

[9] BASEL CONVENTION. *Guidance document on transboundary movements of hazardous wastes destined for recovery operations*. Switzerland: Secretariat of the Basel Convention, 2002. (<http://www.basel.int/meetings/sbc/workdoc/techdocs.html>)

[10] EUROPEAN COMMUNITIES. Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work. Luxembourg: Office for Official Publications of the European Communities.

### Further reading

BASEL CONVENTION. *Guidance document on the preparation of technical guidelines for the environmentally sound management of wastes subject to the Basel Convention*. Switzerland: Secretariat of the Basel Convention, (<http://www.basel.int/meetings/sbc/workdoc/techdocs.html>)

BASEL CONVENTION. *Technical guidelines for the identification and environmentally sound management of plastic wastes and for their disposal*. Switzerland: Secretariat of the Basel Convention, 2002. (<http://www.basel.int/meetings/sbc/workdoc/techdocs.html>)

BASEL CONVENTION. *Technical guidelines on the environmentally sound recycling/reclamation of metals and metal compounds (R4)*. Switzerland: Secretariat of the Basel Convention, 2004. (<http://www.basel.int/meetings/sbc/workdoc/techdocs.html>)

EUROPEAN COMMUNITIES. Revised Correspondents' Guidelines No 1 on shipments of waste electrical and electronic equipment (WEEE). Luxembourg: Office for Official Publications of the European Communities. ([http://ec.europa.eu/environment/waste/shipments/pdf/correspondents\\_guidelines\\_en.pdf](http://ec.europa.eu/environment/waste/shipments/pdf/correspondents_guidelines_en.pdf))

US Department of Defense data eradication standard d522022m

US National Security Agency Approved Degausser – Copy of approvals to be supplied by product manufacturer and verified by CESH

### Useful websites

Department for Business, Innovation and Skills	<a href="http://www.bis.gov.uk">www.bis.gov.uk</a>
Electrical Product Environmental Attributes Tool (EPEAT)	<a href="http://www.epeat.net">www.epeat.net</a>
Environment Agency	<a href="http://www.environment-agency.gov.uk">www.environment-agency.gov.uk</a>
NetRegs	<a href="http://www.netregs.gov.uk">www.netregs.gov.uk</a>
Eur-lex	<a href="http://eur-lex.europa.eu">eur-lex.europa.eu</a>