
Zahteve za zbiranje, logistiko in obdelavo odpadne električne in elektronske opreme (WEEE) - 5. del: Specifikacija za obdelavo frakcij WEEE - Baker in plemenite kovine

Collection, logistics & Treatment requirements for WEEE - Part 5: Specification for the final treatment of WEEE fractions - Copper and precious metals

Sammlung, Logistik und Behandlung von Elektro- und Elektronik-Altgeräten (WEEE) - Teil 5: Spezifikation für die Endbehandlung der Fraktionen von Elektro- und Elektronik-Altgeräten - Kupfer und Edelmetalle

Exigences de collecte, logistique et traitement pour les déchets d'équipements électriques et électroniques (DEEE) - Partie 5: Spécification pour le traitement final des fractions de DEEE - Cuivre et métaux précieux

Ta slovenski standard je istoveten z: CLC/TS 50625-5:2017

ICS:

13.030.99	Drugi standardi v zvezi z odpadki	Other standards related to wastes
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SIST-TS CLC/TS 50625-5:2017 **en**

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TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CLC/TS 50625-5

August 2017

ICS 13.030.99

English Version

**Collection, logistics & Treatment requirements for WEEE - Part
5: Specification for the final treatment of WEEE fractions -
Copper and precious metals**

Exigences de collecte, logistique et traitement pour les
déchets d'équipements électriques et électroniques (DEEE)
- Partie 5: Spécification pour le traitement final des fractions
de DEEE - Cuivre et métaux précieux

Anforderungen an die Sammlung, Logistik und Behandlung
von Elektro- und Elektronikaltgeräten (WEEE) - Teil 5:
Spezifikation für die Endbehandlung der Fraktionen von
Elektro- und Elektronik-Altgeräten - Kupfer und Edelmetalle

This Technical Specification was approved by CENELEC on 2017-05-29.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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CLC/TS 50625-5:2017 (E)

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European foreword

This document (CLC/TS 50625-5:2017) has been prepared by CLC/TC 111X "Environment".

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CLC/TS 50625-5:2017 (E)**Introduction**

In order to support EN 50625-1, *Collection, logistics & Treatment requirements for WEEE - Part 1: General treatment requirements*, covering treatment of WEEE, it is essential to include normative requirements, such as management and technical requirements and target and limit values, into a document that is able to be revised to take into account both practical experience and changes in treatment technologies.

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1 Scope

This Technical Specification addresses the processes regarding the recycling of copper and/or precious metals contained in WEEE and fractions of WEEE.

NOTE 1 For the treatment of WEEE EN 50625-1 applies.

This Technical Specification relates to the chemical and metallurgical processes used for the recycling of copper and/or precious metals contained in WEEE and fractions of WEEE, thereby differentiating it from manual/mechanical processing (see Annex A).

All chemical and metallurgical processes are included up and until the output materials will be used for their original purpose or for other purposes or will be finally disposed of.

NOTE 2 The main precious metals concerned are gold, silver and palladium.

NOTE 3 The majority of the WEEE volumes that are processed by final treatment operators consists of fractions of WEEE (e.g. circuit boards) containing copper and/or precious metals, however there may be whole small WEEE that can be treated directly in final treatment (e.g. USB sticks).

NOTE 4 Chemical and metallurgical processes are processes in which a chemical reaction takes place for example: pyrolysis, smelting, refining, solvent extraction, ion exchange, leaching/dissolution in water acids or base, precipitation, cementation or pressure leaching. They differ from mechanical / physical processes such as sorting and separation based on physical properties (e.g. density, magnetism, colour) and size reduction processes such as shredding and grinding.

NOTE 5 In general, these final treatment facilities are covered by the IED 2010/75/EU, e.g. copper smelters or refiners.

2 Normative references (standards.iteh.ai)

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

EN 50625-1:2014, *Collection, logistics & Treatment requirements for WEEE - Part 1: General treatment requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 50625-1 and the following apply.

3.1

backfilling

void

Note 1 to entry: Decision 2011/753/EU contains the following: 'backfilling' means a recovery operation where suitable waste is used for reclamation purposes in excavated areas or for engineering purposes in landscaping and where the waste is a substitute for non-waste materials.

3.2

disposal

void

Note 1 to entry: Directive 2008/98/EC defines disposal: "'disposal' means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex I sets out a non-exhaustive list of disposal operations".

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3.3

energy recovery

production of useful energy through direct and controlled combustion or other processing of waste

[SOURCE: EN 50625-1:2014, definition 3.14]

Note 1 to entry: Energy recovery is a recovery operation where the material is used principally as a fuel or other means to generate energy, see R1 of Annex II of Directive 2008/98/EC.

3.4

final treatment

last steps in the treatment of WEEE and fractions of WEEE containing copper and/or precious metals whereby they are transformed using chemical or metallurgical processes and whereby these materials, components and substances are purified into raw materials that can be used for the original purpose or for other purposes

3.5

final treatment facility

location where WEEE and fractions of WEEE containing copper and/or precious metals undergo final treatment

3.6

final treatment operator

entity performing treatment of WEEE and fractions of WEEE in a final treatment

3.7

fraction

separate output stream generated by the treatment of WEEE

[SOURCE: EN 50625-1:2014, definition 3.18]

3.8

hazardous waste

waste which exhibits one or more hazardous properties

[SOURCE: EN 50625-1:2014 definition 3.19]

Note 1 to entry: The term “hazardous waste” is defined in Directive 2008/98/EC; the properties of hazardous waste are described in Annex III of Directive 2008/98/EC.

3.9

Injuries incurred Without resulting in a work Absence**IWA**

number of IWA, sometimes also called a “zero accident”. An IWA is reported when a person is slightly injured at work, but reports to work the following day

3.10

IWA frequency

total number of IWA injuries considered on the basis of one million hours worked. It is computed as the number of IWA events occurring divided by the total number of hours worked corresponding to this number of IWA events and then multiplied by one million hours (10^6)

3.11

logistics

planning, implementing and controlling of the transportation, handling, preliminary storage and/or sorting of WEEE from point of origin to point of delivery

3.12**Lost Time Injuries****LTI**

number of LTI. An LTI is reported when a person is injured at work, and the injury causes him/her to stay away from the work place on sick leave on the following or more days

3.13**LTI frequency**

total number of LTI injuries considered on the basis of one million hours worked. It is computed as the number of LTI events occurring divided by the total number of hours worked corresponding to this number of LTI events and then multiplied by one million hours ($\times 10^6$)

3.14**material recovery**

void

Note 1 to entry: Decision 2011/753/EU contains the following: “material recovery’ means any recovery operation, excluding energy recovery and the reprocessing into materials which are to be used as fuel”.

3.15**metal yield**

amount of copper and precious metals obtained (“output”), as product, from the processing of infeed materials (“input”), shown as a percentage, for each metal

Note 1 to entry: The output products contain the respective metals either as pure (elemental) metals or as alloy metals (added intentionally, not as a contaminant) or as defined metal compounds (e.g. metal salts), but not, e.g., captured in slag.

3.16**near miss**

number of near miss incidents, sometimes called an “incident”. A near miss is to be reported in any instance where a particular situation, an unexpected hazard, a dangerous condition or a failure of some nature could lead to the potential of someone being injured, but no injury actually occurred

3.17**off-spec material**

material provided by an operator which does not comply with the specifications that have been previously agreed upon between operator and final treatment operator

3.18**operator**

entity that performs one or more treatment processes on WEEE

[SOURCE: EN 50625-1:2014, definition 3.25]

Note 1 to entry: Processes on WEEE could include collection, handling, shipping, sorting, storage, transport, trading, treatment, or preparing for re-use.

3.19**other material recovery**

material recovery which is not recycling

Note 1 to entry: An example of other material recovery is backfilling

CLC/TS 50625-5:2017 (E)**3.20****recovery**

void

Note 1 to entry: Directive 2008/98/EC contains the following: “‘recovery’ means any 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. Annex II sets out a non-exhaustive list of recovery operations”.

3.21**recovery rate**

calculation of rates as the percentage of the total mass of all output fractions originating from WEEE accounting for recycling, other material recovery and energy recovery in proportion to the total mass of the WEEE input fractions entering the final treatment

3.22**recycling**

void

Note 1 to entry: Directive 2008/98/EC contains the following: “‘recycling’ means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations”.

3.23**recycling rate**

calculation of rates as the percentage of the total mass of output fractions originating from WEEE accounting for recycling in proportion to the total mass of the WEEE input fractions entering the final treatment

Note 1 to entry: The formula for calculating the recycling rate is given in EN 50625–1:2014, Figure C.1.

3.24**thermal disposal**

combustion for disposal without energy recovery

3.25**treatment**

void

Note 1 to entry: Directive 2008/98/EC contains the following: “‘treatment’ means recovery or disposal operations, including preparation prior to recovery or disposal”.

3.26**waste**

void

Note 1 to entry: Directive 2008/98/EC contains the following: “‘waste’ means any substance or object which the holder discards or intends or is required to discard”.

3.27**WEEE (Waste Electrical and Electronic Equipment)**

void

Note 1 to entry: Directive 2012/19/EU contains the following: “‘waste electrical and electronic equipment’ or ‘WEEE’ means electrical or electronic equipment which is waste within the meaning of Article 3(1) of Directive 2008/98/EC, including all components, subassemblies and consumables which are part of the product at the time of discarding”.

4 Administrative and organisational requirements

4.1 General

The administrative and organisational requirements concern management principles, environmental, health and safety requirements and the agreement on acceptance of materials.

4.2 Management principles

The final treatment operator shall ensure that a documented management system is in place for all activities in the fields of environment, health, safety and quality.

NOTE ISO 9001, ISO 14001, EMAS and OHSAS 18001 are examples of management systems, but other management systems may exist.

The final treatment operator shall demonstrate continuous improvement of their activities by a review and management process. This management process shall be updated or revised as changes occur to the activities of the treatment operator and evaluated in order to monitor its effectiveness.

The management system shall include the following documented points:

- Legal compliance report: a list of relevant legislation and associated requirements, which applies to the final treatment operator and their facility and evidence of compliance to this legislation and associated requirements;
- Organisational plan: an up to date organisation chart that shall include all management and production personnel levels, including those positions regarding acceptance and treatment of WEEE and/or fractions thereof, waste management, the transport and the handling of materials that exhibit hazardous properties;
- Work instructions: work procedures shall be in place regarding all processes performed, including the handling of any off-spec materials and/or waste materials produced from the final treatment of WEEE and/or fractions of WEEE containing copper and/or precious metals;
- Fire and explosion prevention plan and emergency plan: fire and explosion-prevention systems as well as related emergency plans and emergency testing procedures and records of tests performed and any corrective actions or amendments to the plans;
- A process description and a process flowchart;
- Data register: a record of data including input and output description, weight, origin and destination. This shall be kept for a minimum period of three years; and
- Sub-contractors and sub-processors report: information such as company name, address, legal registration, permits of contractors and operators that handle the wastes from the final treatment operator (if used), along with work procedures and proof of the monitoring procedures.
- Insurance: Document in which the actual insurance coverage is stated.

4.3 Environment, Health and Safety - EHS requirements

To ensure a safe working environment there shall be a number of different exposure limits depending on the substance or conditions. The exposure limits for inhalable inorganic dust and lead are given in Annex C, as well as guidance values for other substances. If competent or governing authorities impose more stringent limit values, then this latter value shall apply. Appropriate personal protection equipment shall be used in case the limits are exceeded in certain working areas.

The final treatment operator shall possess infrastructure, in terms of size, technologies installed, and characteristics of the operations, that is suitable for the activities performed at the facility. Suitability of the site shall be assessed by a risk management process for all tasks performed on site and include