SLOVENSKI STANDARD
SIST-TS CLC/TS 50625-3-5:2018

01-januar-2018

Zahteve za zbiranje, logistiko in obdelavo odpadne električne in elektronske opreme (WEEE) - 3-5. del: Tehnična specifikacija za preprečevanje onesnaženja - Fotonapetostne plošče

Collection, logistics & Treatment requirements for WEEE - Part 3-5: Technical specification for de-pollution - Photovoltaic panels

Exigences de collecte, logistique et traitement pour les DEEE - Partie 5: Spécification relative au traitement final des fractions de DEEE - Cuivre et métaux précieux

Ta slovenski standard je istoveten z: **CLC/TS 50625-3-5:2017**

ICS:

13.020.40	Onesnaževanje, nadzor nad onesnaževanjem in ohranjanje	Pollution, pollution control and conservation
13.030.99	Drugi standardi v zvezi z odpadki	Other standards related to wastes
27.160	Sončna energija	Solar energy engineering

SIST-TS CLC/TS 50625-3-5:2018 **en**

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CLC/TS 50625-3-5

November 2017

ICS 13.030.99; 27.160

English Version

Collection, logistics & Treatment requirements for WEEE - Part 3-5: Technical specification for de-pollution - Photovoltaic panels

Exigences de collecte, logistique et traitement pour les DEEE - Partie 5: Spécification relative au traitement final des fractions de DEEE - Cuivre et métaux précieux

Sammlung, Logistik und Behandlung von Elektro- und Elektronik-Altgeräten (WEEE) - Teil 3-5: Spezifikation für die Endbehandlung der Fraktionen von Elektro- und Elektronik-Altgeräten - Kupfer und Edelmetalle

This Technical Specification was approved by CENELEC on 2017-09-18.

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

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Ref. No. CLC/TS 50625-3-5:2017 E

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European foreword

This document (CLC/TS 50625-3-5:2017) has been prepared by CLC/TC 111X “Environment”.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under mandate M/518 given to CENELEC by the European Commission and the European Free Trade Association.

This document is to be used in conjunction with CLC/TS 50625-3-1:2015.

CLC/TS 50625-3-5 supplements or modifies the corresponding clauses in CLC/TS 50625-3-1:2015, so as to convert that publication into the Technical Specification: Treatment specification for photovoltaic panels.

When a particular subclause of part 3-1 is not mentioned in this part 3-5, that subclause applies as far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text in part 3-1 is to be adapted accordingly.

NOTE The following numbering system is used:

– Subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;

– unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;

– additional annexes are lettered AA, BB, etc.

Introduction

In order to support EN 50625-2-4, Collection, logistics and Treatment requirements for WEEE - Part 2: Treatment requirements for photovoltaic panels, covering treatment of WEEE and thereby fulfil the requirement of the European Commission's Mandate M/518 it is necessary to include normative requirements, such as target values and limit values for the analysis, into a document that is able to be revised to take into account both practical experience and changes in treatment technologies.

1 Scope

Clause 1 is replaced with the following:

This European Technical Specification is intended to be used in conjunction with the WEEE Treatment Standard for photovoltaic panels, EN 50625-2-4 and Technical Specification for de-pollution – General CLC/TS 50625-3-1:2015.

2 Normative references

Clause 2 is replaced with the following:

EN 13650, *Soil improvers and growing media - Extraction of aqua regia soluble elements*

EN 14899, *Characterization of waste - Sampling of waste materials - Framework for the preparation and application of a Sampling Plan*

EN 15002, *Characterization of waste - Preparation of test portions from the laboratory sample*

CEN/TR 15310-1, *Characterization of waste - Sampling of waste materials - Part 1: Guidance on selection and application of criteria for sampling under various conditions*

CEN/TR 15310-2, *Characterization of waste - Sampling of waste materials - Part 2: Guidance on sampling techniques*

CEN/TR 15310-3, *Characterization of waste - Sampling of waste materials - Part 3: Guidance on procedures for sub-sampling in the field*

CEN/TR 15310-4, *Characterization of waste - Sampling of waste materials - Part 4: Guidance on procedures for sample packaging, storage, preservation, transport and delivery*

CEN/TR 15310-5, *Characterization of waste - Sampling of waste materials - Part 5: Guidance on the process of defining the sampling plan*

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

EN 50625-2-4:2017, *Collection, logistics & treatment requirements for WEEE - Part 2-4: Treatment requirements for photovoltaic panels*

CLC/TS 50625-3-1:2015, *Collection, logistics & treatment requirements for WEEE - Part 3-1: Specification for de-pollution - General*

EN ISO 15587-1, *Water quality - Digestion for the determination of selected elements in water - Part 1: Aqua regia digestion (ISO 15587-1)*

EN ISO 15587-2, *Water quality - Digestion for the determination of selected elements in water - Part 2: Nitric acid digestion (ISO 15587-2)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025)*

EN ISO 17294-2, *Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (ISO 17294-2)*

EN ISO 17852, *Water quality - Determination of mercury - Method using atomic fluorescence spectrometry (ISO 17852)*

EPA Method 6020A, *Inductively coupled plasma — Mass spectrometry*

3 Terms and definitions

This clause of EN 50625-1 and CLC/TS 50625-3-1:2015 is applicable

4 De-pollution monitoring

4.1 Introduction

This subclause of CLC/TS 50625-3-1:2015 is applicable.

4.2 Target value methodology

This subclause of CLC/TS 50625-3-1:2015 is not applicable.

4.3 Mass Balance methodology

This subclause of CLC/TS 50625-3-1:2015 is not applicable.

4.4 Analysis methodology

Subclause 4.4.is replaced with the following:

This methodology uses the following approach:

- establish the limit value: these values are defined in this Technical Specification;
- sample the fractions: the sample for the analysis shall be prepared according to the sampling procedure defined in this Technical Specification;
- evaluate the analysis results: the concentration of substances shall be determined according to the analysis procedure defined in this Technical Specification;
- evaluate the de-pollution performance: compare the results of the analysis with the defined limit values. If the results are below the limit values then the performance of de-pollution fulfils the requirements.

The limit values for lead, cadmium and selenium are also used as an indicator of de-pollution from other hazardous substances that may be present in the various panels.

A laboratory shall perform the analysis on the samples for the residual amount of these pollutants in the glass fraction.

Depending on the treatment process used, one of the techniques below in Annex AA, shall be used to obtain a representative mixed sample:

- sampling during a treatment process
- sampling after a treatment process

NOTE 1 All the sampling protocols are based on EN 14899.

Analysis protocol will be implemented by laboratories. There are many types of physical-chemical sample processing and analysis. This Technical Specification describes the suitable methods for samples of glass fractions from photovoltaic panel treatment processes.

A laboratory that complies with EN ISO/IEC 17025 shall perform chemical analysis including processing of the samples. If the laboratory does not comply with EN ISO/IEC 17025 then duplicate samples shall be sent for checking to laboratory that does meet EN ISO/IEC 17025 on a regular basis, according to a defined process.

NOTE 2 The laboratory can be internal to the treatment operator or a third party laboratory.

The preparation of the test portion, including homogenization of the heterogeneous samples shall be carried out according to one of the following standards: EN ISO 15587-1, EN ISO 15587-2, EN 15002, EN 13650.

The chemical analysis, separation of the test portion and identification of the heavy metals shall be carried out according to one of the following standards: EN ISO 17852, EPA 6020A - 1 Revision 1, February 2007, EN ISO 17294-2.

5 Overview of the applicable methodologies

5.1 Applicable methodologies

This subclause of CLC/TS 50625-3-1:2015 is applicable.

6 Large appliances

This clause of CLC/TS 50625-3-1:2015 is not applicable.

7 Cooling and freezing appliances

This clause of CLC/TS 50625-3-1:2015 is not applicable.

8 CRT Display /FPD appliances

This clause of CLC/TS 50625-3-1:2015 is not applicable.

9 Lamps

This clause of CLC/TS 50625-3-1:2015 is not applicable.

10 Small appliances

This clause of CLC/TS 50625-3-1:2015 is not applicable.

11 Protocol for components removed during a batch process

This clause of CLC/TS 50625-3-1:2015 is not applicable.

Add the following Clause 12 to CLC/TS 50625-3-1:2015:

12 Photovoltaic panels

12.1 Introduction

This clause refers to the treatment standard of photovoltaic panels EN 50625-2-4:2017, 5.6 (De-pollution monitoring).

12.2 Analysis methodology

According to EN 50625-2-4:2017, 5.6, the limit value for lead, cadmium and selenium in glass fractions from photovoltaic panel treatment is the following:

Glass fractions from the treatment of silicon based photovoltaic panels

- 1 mg/kg (dry matter) cadmium
- 1 mg/kg (dry matter) selenium
- 100 mg/kg (dry matter) lead