



SLOVENSKI STANDARD
SIST EN 16602-60-14:2015
01-januar-2015

**Zagotavljanje varnih proizvodov v vesoljski tehniki - Postopek oživljanja
komponent EEE**

Space product assurance - Relifing procedure - EEE components

Raumfahrtproduktsicherung - Wiederbelebungsprozeduren für EEE-Komponenten

Assurance produit des projets spatiaux - Procédure de déstockage - Composants EEE

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Ta slovenski standard je istoveten z: EN 16602-60-14:2014

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ICS:

49.140 Vesoljski sistemi in operacije Space systems and
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EUROPEAN STANDARD

EN 16602-60-14

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2014

ICS 49.140

English version

**Space product assurance - Relifing procedure - EEE
components**Assurance produit des projets spatiaux - Procédure de
déstockage - Composants EEERaumfahrtproduktsicherung - Wiederbelebungsprozeduren
für EEE-Komponenten

This European Standard was approved by CEN on 13 March 2014.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN and CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 16602-60-14:2014) has been prepared by Technical Committee CEN/CLC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16602-60-14:2014) originates from ECSS-Q-ST-60-14C.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2015, and conflicting national standards shall be withdrawn at the latest by March 2015.

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

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document has been developed to cover specifically space systems and has therefore precedence over any EN covering the same scope but with a wider domain of applicability (e.g. aerospace).

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This standard specifies the requirements, also known as “relifing requirements”, for the planned, intentional storage, control, and removal from storage of electronic, electrical and electromechanical parts which are intended to be used for space applications.

The relifing process is a lot quality control activity. The inspections and tests defined do not constitute an up-screening or up-grading of components to a higher level of quality than procured to.

This standard is applicable to all EEE parts covered by ECSS-Q-ST-60 and used in space programmes.

This standard is not applicable to naked dice.

This standard does not cover the relifing of commercial parts.

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Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this ECSS Standard. For dated references, subsequent amendments to, or revision of any of these publications do not apply. However, parties to agreements based on this ECSS Standard are encouraged to investigate the possibility of applying the more recent editions of the normative documents indicated below. For undated references, the latest edition of the publication referred to applies.

EN reference	Reference in text	Title
EN 16601-00-01	ECSS-S-ST-00-01	ECSS system – Glossary of terms
EN 16602-10-09	ECSS-Q-ST-10-09	Space product assurance – Nonconformance control system
EN 16602-60	ECSS-Q-ST-60	Space product assurance – Electrical, electronic and electromechanical (EEE) components
EN 16602-70-01	ECSS-Q-ST-70-01	Space product assurance – Cleanliness and contamination control
	ESCC 24900	Minimum Requirements for Controlling Environmental Contamination of Components
	IPC/JEDEC J-STD-033 July 2002 version A	Standard for Handling, Packing, Shipping and Use of Moisture/ re-flow Sensitive Surface Mount Devices
	ESCC 20600	Preservation, Packaging and dispatch of SCC Electronic Components

3

Terms, definitions and abbreviated terms

3.1 Terms from other standards

For the purpose of this Standard, the terms and definitions from ECSS-S-ST-00-01 and ECSS-Q-ST-60 apply.

For the purposed of this Standard the following terms from ECSS-Q-ST-70-01 apply:

clean area

cleanroom

3.2 Terms and definitions specific to the present standard

3.2.1 antistatic material

material that minimizes the generation of static charges

NOTE 1 This term refers to the reduction of triboelectric charge generation.

NOTE 2 This property is not dependent upon material resistivity.

3.2.2 conductive material

<ESD protection> material with the following characteristics:

- surface conductive type: materials with a surface resistivity less than $10^5 \Omega/\square$.
- volume conductive type: materials with a volume resistivity less than $10^4 \Omega\text{-cm}$.

3.2.3 contaminant

unwanted molecular or particulate matter (including microbiological matter) on the surface or in the environment of interest that can affect or degrade the relevant performance or life time

3.2.4 container

receptacle which holds, restrains or encloses an item

3.2.5 (original) date code

code used by the EEE part manufacturer at assembly step that indicates the production date

NOTE 1 Generally four-figure codes; two for the year and two for the week.

NOTE 2 Special lot number can also identify the date code.

3.2.6 (relifing) date code:

code indicating the date an item is submitted to relifing

NOTE Four-figure code, two for the year and two for the week.

3.2.7 dissipative material

<ESD protection> material with the following characteristics:

- surface conductive type: materials with a surface resistivity equal to or greater than $10^5 \Omega/\square$ but less than $10^{12} \Omega/\square$.
- volume conductive type: materials with a volume resistivity equal to or greater than $10^4 \Omega\text{-cm}$ but less than $10^{11} \Omega\text{-cm}$.

3.2.8 electrostatic charge

negative or positive electrical charge present on the material or item surface, at rest

3.2.9 electrostatic discharge (ESD)

transfer of electrostatic charge between objects at different potentials caused by direct contact or induced by an electrostatic field

3.2.10 electrostatic discharge sensitive (ESDS)

tendency of the performance of EEE parts to be affected or damaged by an ESD event

3.2.11 ESD protected area

area which is constructed and equipped with the necessary ESD protective materials, equipment, and procedures, to limit ESD voltages below the sensitivity level of ESDS items handled therein

3.2.12 ESD protective material

material with one or more of the following properties: limits the generation of electrostatic charge, dissipates electrostatic charge, and provides shielding from electric fields

3.2.13 ESD protective packaging

packaging with ESD protective materials to prevent ESD damage to ESDS items

3.2.14 electrostatic shield

barrier or enclosure that prevents or attenuates the penetration of an electric field

3.2.15 handled or handling

actions during which items are hand manipulated or machine processed

3.2.16 identification

application of appropriate markings to ensure that the identity of an item is unfaillingly indicated after preservation and each stage of packing

3.2.17 isolating material

<ESD protection> material not defined as conductive or dissipative are considered to be isolating

3.2.18 package

support used for enveloping, protecting or containing materials

NOTE Different types of packages are normally used:
Primary, intermediate and final packages

3.2.19 (primary) package

container, envelope or wrap holding an individual item

3.2.20 (intermediate) package

container holding two or more primary packages

3.2.21 (final) package

container holding one or more intermediate packages, used for transportation of supplies to the orderer

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3.2.22 packaging

operations consisting in the preparation of supplies for transit and delivery.

NOTE The term includes preservation, identification and packing

3.2.23 packing

operation by which supplies are placed in container or wrapped and placed in containers

3.2.24 particle

unit of matter with observable length, width and thickness

NOTE A particle can be object of solid or liquid composition, or both, and generally between 0,001 µm and 1000 µm in size

3.2.25 preservation

cleaning of a item and the application of a suitable temporary protective, where necessary, to maintain the item in prime condition

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3.2.26 relifing procedures

set of tests performed on an item previously stored to verify that its initial quality and reliability have not been affected by time

3.2.27 storage area

area in the storage site where EEE parts are stored and which contains one or more storage zones.

3.2.28 storage long duration

storage for which duration exceeds 3 years

3.2.29 storage site

geographical location where EEE parts are stored for a short, medium or long term period

NOTE For this site the requirements given in this standard apply: EEE parts manufacturer's premises, procurement Agency, EEE part user.

3.2.30 storage zone

defined space in which EEE parts are stored and which is equipped for the monitoring and the control of storage conditions.

3.2.31 timing parameters

One of the following parameters:

- T0 : Original date code
- T1 : Maximum allowed storage period from T0 with no relifing control
- T2 : Maximum duration between the original date code of part and its mounting
- T3 : Maximum allowed storage period after a relifing control.

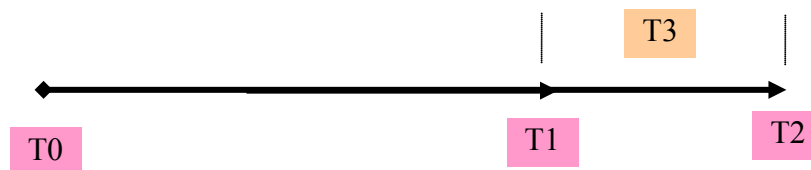


Figure 3-1: Timing parameters

3.2.32 triboelectric effect

generation of electrostatic charge on an object by rubbing or other type of contact.