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## PRESERVATION, PACKAGING AND DESPATCH OF SCC ELECTRONIC COMPONENTS ESA/SCC Basic Specification No. 20600

See

# space components coordination group

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#### **DOCUMENTATION CHANGE NOTICE**

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#### 1. <u>SCOPE</u>

This specification defines the general requirements for the preservation, packaging and despatch of electronic components produced under the SCC system of specifications.

#### 2. APPLICABLE DOCUMENTS

This document should be read in conjunction with the following applicable document:-

(a) ESA/SCC Basic Specification No. 23800, Electrostatic Discharge Sensitivity Test Method.

#### 3. **DEFINITIONS**

The following definitions apply to this document:-

Container:	A generic term for any receptacle which holds, restrains or encloses an item.	
Final Package:	A container, holding 1 or more intermediate packages, used for transportation of supplies to the Orderer.	
Identification:	The application of appropriate markings to ensure that the identity of an item is unfailingly indicated after preservation and each stage of packing.	
Intermediate Package:	A container holding 2 or more primary packages.	
Packaging:	The operations involved in the preparation of supplies for transit and delivery. The term includes preservation, identification and packing.	
Packing:	An operation by which supplies are wrapped and/or placed in containers, etc.	
Preservation:	The cleaning of an item and the application of a suitable temporary protective, where necessary, to maintain the item in prime condition.	



Primary Package:A container, envelope or wrap to hold an individual item.Special Packaging:A system of packaging specially developed to suit the needs of a particular

#### 4. **REQUIREMENTS**

#### 4.1 GENERAL

Components ordered to SCC specifications shall be packaged in such a manner that they are:-

(a) Adequately safeguarded against mechanical or electrical injury during transportation to the Orderer.

item, usually involving special designs for containers, fittings, etc.

- (b) Protected against deterioration due to humidity.
- (c) Suitable for storage, in their primary packages, for a period of 1 year over a temperature range of +10 to +40 °C, at relative humidities of up to 65%.
- (d) Easily identified after preservation and each stage of packing.

The protection to be provided by any specific package depends on the severity of the risks to which it is expected to be subjected during transport and storage.

Responsibility for the assessment of the packaging required for any particular order rests with the Supplier, but normally the following requirements shall be applicable when packaging SCC electronic components.

#### 4.2 PRESERVATION

If the item to be packaged requires to be protected against atmospheric humidity, a temporary protective or preservation shall be applied.

The method of preservation and material used must have no adverse effect on the component or cause deterioration in any form.

The form of preservation shall be such that it is easily removable without the need for special equipment and without dismantling the component.



#### 4.3 PRIMARY PACKAGE

Each component shall be enclosed in a primary container. Dependent on the type of component, this may take the form of an individual container, envelope, wrap, etc. The primary container shall provide protection against contamination and the hazards of normal handling and indoor storage and electrostatic discharge.

Primary packages shall be easily opened without the need for special tools and, wherever practicable, re-packaging shall be possible.

The primary package shall be constructed of material which can be used directly in clean rooms and cleanliness controlled areas. It shall not include materials that are particle-shedding or permeate gaseous contamination at levels equal to, or greater than, those specified for such areas.

#### 4.4 INTERMEDIATE PACKAGE

Dependent on the type of component being packaged, 2 or more primary packages shall be packaged into a secondary container. Intermediate packages shall only contain SCC components, in their primary package, of the same type, date code and lot code, and which have been manufactured and tested against the same Detail Specification.

Intermediate packages shall be easily opened, leaving the enclosed components intact in their primary packages, without the need for special tools. Wherever practicable, re-packaging shall be possible.

#### 4.5 FINAL PACKAGE

For transportation to the Orderer, 1 or more intermediate packages shall be assembled into a final container. Wherever physically possible, the size of a final package shall be such that it can be handled by 1 person.

The design of the final package shall be such that bulk and weight are kept to a minimum, consistent with affording adequate protection in the known handling, transportation and storage environments. Supports, filling, cushions, etc. shall be used as applicable.

The final package shall withstand a free fall of 1.5 metres onto a firm concrete base without any evidence of damage to the components, primary packages and intermediate packages. Provided this requirement is met, minor damage (e.g. abrasions, small dents) to the final package is acceptable. The relevant invoice and packaging documentation (see Para. 4.11) shall be included in the final package.



#### 4.6 HANDLING AND TRANSPORTATION

All packaging shall be designed to ensure that no deterioration of the supplies occurs whilst in transit from one location to another. In those instances where packages are liable to be transported by air, it is important that the bulk and weight are kept to the minimum.

Proper provision shall be made for changes in atmospheric pressure and temperature when flying at altitude.

#### 4.7 <u>CONTINUITY OF PROCESSES</u>

It is highly desirable that packaging shall be carried out with the minimum delay at the place of manufacture. In any case, cleaning, preservation and packaging should be carried out at one location as a continuous process. All locations at which components are received, stored and packaged shall be so arranged that a high degree of cleanliness is maintained.

#### 4.8 QUALITY ASSURANCE PROVISIONS

The Supplier is responsible for ensuring that the packaging conforms to the requirements of this specification and the purchase order.

In all stages of the packaging processes, the selection of materials used and their methods of application shall be such that no reaction with, or damage to, the components occurs.

#### 4.9 SPECIAL PACKAGING

When requirements for special packaging arise, these will be negotiated between the Orderer and the Supplier and specified in the Purchase Order.

Special packaging is always required in case of components sensitive to electrostatic discharge as defined in ESA/SCC Basic Specification No. 23800.

#### 4.10 IDENTIFICATION OF THE CONTENTS OF PACKAGES

It is essential that there is ready and accurate identification of the items within a package by means of markings or external labels giving full descriptive particulars of the contents. This is an integral part of the packaging procedure. The types of marking normally required are detailed in the following paragraphs.



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#### 4.10.1 Marking of Primary Packages

If not marked on the components themselves or if such marking is not visible through the primary package, the following data shall be marked on the primary package or indicated by means of a label, etc:-

- (a) The SCC Component Number.
- (b) Characteristics and ratings of the component.
- (c) Date code.
- (d) Lot code.
- (e) Serial numbers (if applicable).
- (f) Primary package quantity.
- (g) Date when packaged.

This data shall be in accordance with the relevant Generic and Detail Specifications.

#### 4.10.2 Marking of Intermediate Packages

Intermediate packages shall be marked with all the data specified for primary packages (see Para. 4.10.1(a) to (g).

Serial numbers, if applicable, may be shown as a range if consecutive, but must be individually listed if not.

In addition, the intermediate package quantity shall be shown.

#### 4.10.3 Marking of Final Packages

Final packages, in addition to the name and address of the Consignee, shall be marked with the following:-

- (a) Purchase Order particulars (e.g. number, date, etc.).
- (b) All particulars necessary for Customs clearance (if applicable).

#### 4.10.4 Special Marking

Special marking, at any or all stages of packaging, may sometimes be required, but it is always required for electrostatic sensitive devices and devices containing beryllium oxide.

When special marking is necessary, the detailed requirements will be specified in the relevant Generic or Detail Specification, or the Purchase Order.

If a device is sensitive to electrostatic discharge as specified in the Detail Specification, a warning label indicating the sensitivity class must be attached to the primary package.

If a device contains beryllium oxide as specified in the Detail Specification, a warning label must be attached to the primary package. This warning shall be "Contains BeO", but in the case where the primary package is too small to accommodate the warning in full, "BeO" may be substituted.



#### 4.11 DOCUMENTATION

Each final package shall contain 1 copy of the relevant invoice and the necessary documentation giving the following particulars:-

- (a) Purchase Order details.
- (b) Name and address of the Orderer (if different from Consignee).
- (c) Name, address and reference of the Supplier.
- (d) Details of any temporary protective applied and preferred method of removal.

In addition, it may be a requirement that other documentation (e.g. test records, history sheets, etc.) accompanies a consignment and details concerning this will be specified in the relevant Generic or Detail Specification or Purchase Order.

#### 4.12 PACKAGING OF "REJECT" OR "ENVIRONMENTAL TEST" COMPONENTS

Components which have been rejected on test, or components which have undergone environmental tests (e.g. qualification samples) and which are to be dispatched to the Orderer or a Qualifying Space Agency, shall be packaged separately from main order components.

The general requirements of this specification shall apply. Primary, intermediate and final packages shall carry additional marking to indicate the status of the components (e.g. "REJECT", "QUALIFICATION SAMPLE", etc.).