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Irish Standard
I.S. EN 16602-70-07:2014

Space product assurance - Verification and approval of automatic machine wave soldering

I.S. EN 16602-70-07:2014

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NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

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approbation du brasage automatique à la vague

Raumfahrtproduktsicherung - Verifikation und Zulassung
von Maschinenschwallötverfahren

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**CEN-CENELEC Management Centre:
Avenue Marnix 17, B-1000 Brussels**

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Foreword

This document (EN 16602-70-07:2014) has been prepared by Technical Committee CEN/CLC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16602-70-07:2014) originates from ECSS-Q-ST-70-07C.

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of an identical text or by endorsement, at the latest by April 2015, and conflicting national standards shall be withdrawn at the latest by April 2015.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 supersedes EN 14612:2003.

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.

Introduction

Wave soldering is regarded as a critical process that can find limited application during the assembly of components on to printed circuit boards (PCBs) intended for spacecraft. The preferred procedure is by manual soldering to the requirements of ECSS-Q-ST-70-08. Generally the small number of identically designed circuits does not warrant the setting up of unique machine parameters for each individual layout.

When wave soldering is identified as a suitable alternative to manual soldering for use in the customer's projects, it can be essential to follow the steps outlined in this document before the final customer's approval is granted. The sequence of main events is shown in Figure 4-1. Each step is fully completed and the details recorded, so that a dossier is compiled for each manufacturer's assembly line. All dossiers are kept updated by the approval authority and serve as a reference for the approval authority's Project Engineers.

A general qualification is not granted for wave soldering. Wave soldering lines that have been previously verified (see also clause 5.2) can be also approved for use on named projects, but this depends entirely on the specific project requirements. Project process approval is requested, as for all materials and critical processes, by means of ECSS-Q-ST-70.

1 Scope

This specification defines the basic requirements for the verification and approval of automatic machine wave soldering for use in spacecraft hardware. The process requirements for wave soldering of double-sided and multilayer boards are also defined.

This standard may be tailored for the specific characteristic and constraints of a space project in conformance with ECSS-S-ST-00.

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