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Space product assurance - Material selection for controlling stress-corrosion cracking

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/15

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Oznámením tejto normy sa ruší
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Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2015
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16602-70-36

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ICS 49.025.01; 49.140

Supersedes EN 14101:2001

English version

Space product assurance - Material selection for controlling stress-corrosion cracking

Assurance produit des projets spatiaux - Sélection des matériaux en vue d'éviter leur fissuration par corrosion sous contrainte

Raumfahrtproduktsicherung - Kriterien für die Werkstoffwahl zur Vermeidung von Spannungsrisskorrosion

This European Standard was approved by CEN on 11 April 2014.

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Table of contents

Figures

Tables

Foreword

This document (EN 16602-70-36:2014) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16602-70-36:2014) originates from ECSS-Q-ST-70-36C.

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of an identical text or by endorsement, at the latest by April 2015, and conflicting national standards shall be withdrawn at the latest by April 2015.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 14101:2001.

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 covers the following processes of the general materials, mechanicals parts and processes (MMPP) flow of ECSS-Q-ST-70:

- The selection of metal alloys for which preference is given to approved data sources (Table 5-1 to Table 5-3)
- The criticality analysis to determine if a stress corrosion cracking (SCC) evaluation is necessary

This Standard sets forth the criteria to be used in the selection of materials for spacecraft and associated equipment and facilities so that failure resulting from stress-corrosion is prevented.

It is intended to provide general criteria to be used in stress-corrosion cracking control, which begins during design thanks to a methodological material selection.

This document does not intend to include all factors and criteria necessary for the total control of stress-corrosion cracking in all alloys.

The criteria established in this Standard are only applicable to designs for service involving exposure conditions similar to testing conditions

As regards weldments, this Standard is applicable to aluminium alloys, selected stainless steels in the 300 series and alloys listed in Table 5-1.

This Standard is not applicable to listed materials whose behaviour differs at elevated temperature and in specific chemical.

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

2
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 16602-70	ECSS-Q-ST-70	Space product assurance - Materials, mechanical parts and processes.
EN 16602-70-37	ECSS-Q-ST-70-37	Space product assurance - Determination of the susceptibility of metals to stress-corrosion cracking.
	NASA-MSFC-SPEC 522B (July 1987)	Design criteria for controlling stress-corrosion cracking

koniec náhľadu – text ďalej pokračuje v platenej verzii STN