

**EN 13291-3:2003**

 **NBN**

**NBN EN 13291-3:2004**

 

---

**Space product assurance - General requirements - Part 3:  
Materials, mechanical parts and processes**

---

Valid from 15-01-2004

ICS: 49.140

---

Bureau for Standardisation  
Rue Joseph II 40 PO box 6  
1000 Brussels

T. +32 2 738 01 11  
F. +32 2 733 42 64  
info@nbn.be

BTW BE0880.857.592  
IBAN BE69 6790 0009 5178  
BIC Code PCHQBEBB

[www.nbn.be](http://www.nbn.be)



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13291-3**

December 2003

ICS 49.140

English version

**Space product assurance - General requirements - Part 3:  
Materials, mechanical parts and processes**

Assurance produits des projets spatiaux - Exigences  
générales - Partie 3: Matériaux, composants mécaniques et  
procédés

Luft- und Raumfahrt - Raumfahrtproduktsicherung - Teil 3:  
Materialien, mechanische Teile und Prozesse

This European Standard was approved by CEN on 1 October 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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 member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

## Contents

page

Foreword.....	3
<b>1 Scope .....</b>	<b>4</b>
1.1 General.....	4
1.2 Objectives.....	4
1.3 Applicability.....	4
<b>2 Normative references .....</b>	<b>4</b>
<b>3 Terms, definitions and abbreviated terms .....</b>	<b>5</b>
3.1 Terms and definitions.....	5
3.2 Abbreviated terms .....	5
<b>4 General requirements.....</b>	<b>6</b>
4.1 Materials, parts and processes programme management .....	6
4.2 Management and consolidation of the materials, parts and processes .....	7
4.3 Technical Constraints .....	7
4.4 Contamination and cleanliness control.....	8
4.5 Safety hazardous materials and parts .....	8
4.6 Mechanical GSE or electrical GSE hardware .....	8
<b>5 Materials control .....</b>	<b>9</b>
5.1 Selection of materials.....	9
5.2 Procurement of materials.....	12
5.3 Use of materials .....	12
<b>6 Mechanical parts control.....</b>	<b>13</b>
6.1 Selection of mechanical parts .....	13
6.2 Procurement of mechanical parts.....	15
6.3 Use of mechanical parts.....	15
<b>7 Process control .....</b>	<b>16</b>
7.1 Selection of processes.....	16
7.2 Use of a process .....	18
<b>Annex A (informative) Relationship between materials, parts and processes activities and programme phases.....</b>	<b>20</b>
A.1 Conceptual phase (Phase A) .....	20
A.2 Project definition phase (Phase B).....	20
A.3 Detailed design, development, manufacturing, integration and test phase (Phase C/D).....	20
A.4 Operational phase (Phase E) .....	21
<b>Bibliography .....</b>	<b>22</b>

## Foreword

This document (EN 13291-3:2003) has been prepared by CMC.

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 June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

It is based on a previous version<sup>1)</sup> originally prepared by the ECSS Product Assurance Working Group, reviewed by the ECSS Technical Panel and approved by the ECSS Steering Board. The European Cooperation for Space Standardization (ECSS) is a cooperative effort of the European Space Agency, National Space Agencies and European industry associations for the purpose of developing and maintaining common standards.

EN 13291 Space product assurance is published as four parts:

- Part 1: Policy and principles
- Part 2: Quality assurance
- Part 3: Materials, mechanical parts and processes
- Part 4: Software product assurance

This European Standard is one of the series of space standards intended to be applied together for the management, engineering and product assurance in space projects and applications.

Requirements in this European Standard are defined in terms of what shall be accomplished, rather than in terms of how to organize and perform the necessary work. This allows existing organizational structures and methods to be applied where they are effective, and for the structures and methods to evolve as necessary without rewriting the standards.

The formulation of this European Standard takes into account the existing ISO 9000 family of documents.

Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

---

1) ECSS-Q-70A.

## EN 13291-3:2003 (E)

### 1 Scope

#### 1.1 General

The purpose of this European Standard is to define the requirements and statements applicable to materials, mechanical parts and processes to satisfy the mission performance requirements.

#### 1.2 Objectives

This European Standard covers the following requirement domains:

- management, including organization, reviews, acceptance status and documentation control;
- selection criteria and rules;
- evaluation, validation or qualification testing;
- procurement and receiving inspection;
- utilization criteria and rules.

The relationship between activities and programme phases is defined in annex A.

#### 1.3 Applicability

The provisions of this European Standard apply to all actors involved at all levels in the production of space systems. These include manned and unmanned spacecraft, launchers, satellites, payloads, experiments, electrical ground support equipment, mechanical ground support equipment, and their corresponding organizations.

When viewed from the perspective of a specific project context, the requirements defined in this standard should be tailored to match the genuine requirements of a particular profile and circumstances of a project.

**NOTE** Tailoring is a process by which individual requirements of specifications, standards and related documents are evaluated and made applicable to a specific project by selection, and in some exceptional cases, modification of existing or addition of new requirements.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13701:2001, *Space systems — Glossary of terms*.

EN 13291-1, *Space product assurance — General requirements — Part 1: Policy and principles*.

EN 13291-2, *Space product assurance — General requirements — Part 2: Quality assurance*.

EN ISO 14620-1, *Space systems — Safety requirements — Part 1: System safety (ISO 14620-1:2002)*.

EN 14090, *Space product assurance — Flammability testing for the screening of space materials*.