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**Space systems — Paints and varnishes  
— Processes, procedures, and  
requirements for coating materials  
and coatings**

*Systèmes spatiaux — Peintures et vernis — Procédés, modes  
opératoires et exigences concernant les produits de peinture et les  
revêtements*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

Nowadays, there are a large number of paints and varnishes (coating materials), on the basis of which coatings for space systems products can be developed and manufactured.

For the use of coating materials, requirements are additionally imposed on the selection processes and procedures for verifying coating materials, surface preparation before painting, application conditions and quality control of coatings.

The main purpose of this document is to harmonize the requirements of existing international and national standards in this area.

Manufacturers of space systems products usually prepare coating materials for application and form coatings under the required operating conditions; therefore, this document aims to optimize the processes of verification, preparation and application of coating materials to improve the quality of painting.



# Space systems — Paints and varnishes — Processes, procedures, and requirements for coating materials and coatings

## 1 Scope

This document establishes the main requirements for:

- a choice of coating materials and coatings for space applications;
- processes and procedures for the verification of coating materials;
- processes of preparation and quality control of the painted surface;
- the quality control of the applied coatings.

This document also describes the causes of possible defects in coatings.

This document is applicable to coating materials and coatings based on them; it is intended for use by manufacturers of space systems products for various surfaces of spacecraft's and its constitutive parts (on-board systems, facilities, tools, electronic component base products) with long active lifetimes.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1514, *Paints and varnishes — Standard panels for testing*

ISO 4628-8, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 8: Assessment of degree of delamination and corrosion around a scribe or other artificial defect*

ISO 9000, *Quality management systems — Fundamentals and vocabulary*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 10794, *Space systems — Programme management — Material, mechanical parts and processes*

ISO 16691, *Space systems — Thermal control coatings for spacecraft — General requirements*

ECSS-Q-ST-70-71C, *Space product assurance. Materials, processes and their data selection*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>