
International Standard



8074

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Aerospace — Surface treatment of austenitic stainless steel parts

Aéronautique et espace — Traitement de surface des éléments en acier inoxydable austénitique

First edition — 1985-08-15

UDC 669.146.9 : 669.14.018.8 : 629.7

Ref. No. ISO 8074-1985 (E)

Descriptors : aircraft industry, aircraft, components, austenitic steels, stainless steels, surface treatment

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8074 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*.

Aerospace — Surface treatment of austenitic stainless steel parts

0 Introduction

The corrosion resistance of stainless steels is dependent upon the integrity of a transparent oxide film present on the surface. Discontinuities in this protective film may result from contamination, for example by iron or carbon on the surface or diffused into the surface layers. Furthermore, because the integrity of the film is dependent on the constant availability of fresh oxygen, discontinuities may result from minute oxygen-starved crevices such as occur under particles of dirt, even though those particles might be chemically inert.

1 Scope and field of application

1.1 This International Standard specifies the requirements for the surface treatment of parts made from austenitic stainless steels (for example AISI 300 series, 19-9DL, A-286). It provides practical methods for removing contaminants and for obtaining suitable corrosion resistance for aerospace applications.

1.2 The surface treatments required during manufacture are mandatory for all surfaces of all parts. The final surface treatments are mandatory except when a surface coating (for example paint, plating) is specified. When such a coating is specified for only a portion of the surfaces of a part, the uncoated portions shall be treated in accordance with the final surface treatment requirements of this International Standard.

1.3 It is the responsibility of the processor to determine, by analysis or history, the condition of the surface prior to treatment to assure conformance to the requirements of this International Standard.

2 Technical requirements

CAUTION — The procedures specified in B.2.2, B.2.4 and B.2.5 may remove significant material from surfaces. Care shall be exercised to allow for such removal so that final dimensional requirements are met.

2.1 Surface treatment during manufacture

2.1.1 Prior to any heating (for example annealing, welding), the steel shall be cleaned to remove all contaminants as specified in 2.1.1.1 and 2.1.1.2.

2.1.1.1 Remove any non-metallic organic contaminants by the appropriate procedure(s) in annex A.

2.1.1.2 Remove any metallic and non-metallic inorganic contaminants by the appropriate procedure(s) in annex B.

2.2 Final surface treatment

2.2.1 After all other manufacturing operations have been completed, surfaces shall be treated as specified in 2.2.1.1 to 2.2.1.3.

2.2.1.1 Remove any non-metallic organic contaminants by the appropriate procedure(s) in annex A.

2.2.1.2 Remove any metallic and non-metallic inorganic contaminants by the appropriate procedure(s) in annex B.

2.2.1.3 If the final operation performed in accordance with 2.2.1.1 or 2.2.1.2 is neither passivating nor nitropickling, passivate in accordance with annex B as a final operation.