SLOVENSKI STANDARD

SIST EN 4459:2006

01-julij-2006

Aeronavtika ï Zatiļ ni vijaki iz titanijeve zlitine TI-P64001 z nazobļ anim zaklepnim obroļ em iz jekla, odpornega proti koroziji ï Standard za projektiranje

Aerospace series - Studs, in titanium alloy TI-P64001, with serrated locking ring in corrosion resisting steel - Design standard

Luft- und Raumfahrt - Stiftschrauben, aus Titanlegierung TI-P64001, mit Ringsicherung aus korrosionsbeständigem Stahl - Konstruktionsnorm

Série aérospatiale - Goujons, en alliage de titane TI-P64001, avec bague de verrouillage dentelée en acier résistant a la corrosion - Norme de conception

Ta slovenski standard je istoveten z: **EN 4459:2005**

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EUROPEAN STANDARD

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EN 4459

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English Version

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This European Standard was approved by CEN on 26 September 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Standard (EN 4459:2005) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

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 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

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1 Scope

This standard specifies the use and installation hole dimensions for EN standard studs, in TI-P64001, with serrated locking ring in corrosion resisting steel, for aerospace applications and provisions for component salvage.

2 Normative references

The following referenced documents are indispensable for the application 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 5855-2, *Aerospace – MJ threads – Part 2: Limit dimensions for bolts and nuts.*

EN 4421, *Aerospace series – Studs, in titanium alloy TI-P64001, MoS_2 coated, with serrated locking ring in corrosion resisting steel – Strength class: 1 100 MPa (at ambient temperature).* [1)]

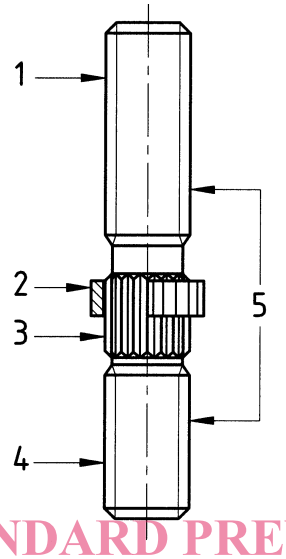
EN 4460, *Aerospace series – Studs, in titanium alloy TI-P64001, with serrated locking ring in corrosion resisting steel – Installation and removal procedure.*

1) Published as AECMA Prestandard at the date of publication of this standard.

3 General

3.1 Description

See Figure 1.



Key

1 Nut end threads
2 Locking ring
3 Serrated collar
4 Installation end threads
5 Same thread diameter on both ends

Figure 1

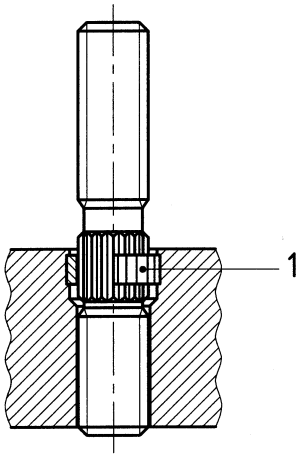
3.2 Installation

The studs are placed in their hole by hand (see Figure 2).

Rotational movement of the studs is prevented by installing the locking ring. This ring mates with the serrated collar on the stud and forms its housing in the casing, thus securing the stud.

For installation in hard materials, ring housing shall mandatorily be presserrated.

The assembly thus made is inseparable, disassembly can only be achieved by destroying the locking ring and the stud.



Key

1 Ring installed

Figure 2

3.3 Use

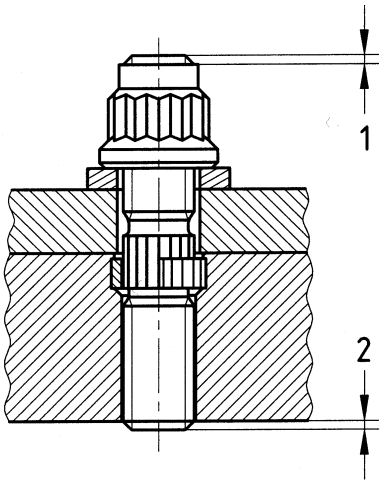
Studs can be used:

— in various "soft" materials such as light alloys and "hard" materials such as nickel or titanium alloys;

— in blind or through tapped holes, as shown on Figures 3 and 4;

— with MJ thread nuts in accordance with ISO 5855-2.

On nut end, stud lengths are incremented to enable optimum installation for different grip thicknesses.

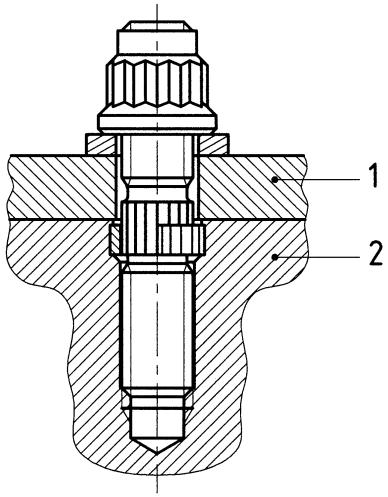


Key

1 1,5 pitches min

2 1,5 pitches max

Figure 3



Key

1 Flange

2 Receiving part

Figure 4

3.4 Recommendations

Studs to EN 4421:

— maximum operating temperature is 350 °C;

— it is not designed to take shear loads;

— it shall not be used on rotating parts;

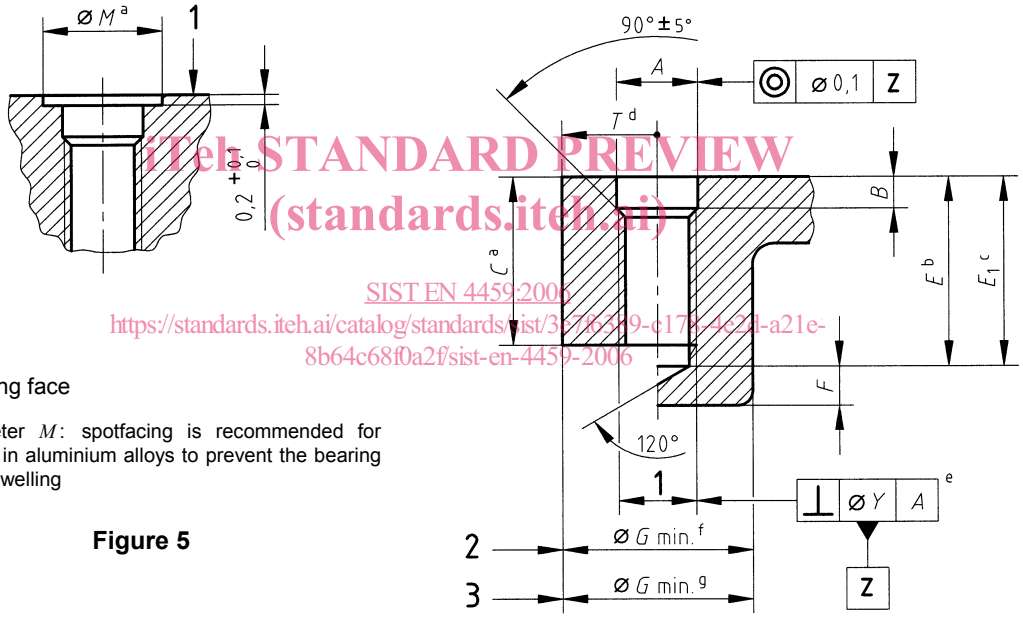
— for installing studs in light alloys, prebroaching of tapped hole is optional. Correct stud installation shall be checked (by tests).

4 Required characteristics

See Figures 5 and 6 and Table 1.

4.1 Holes

Dimensions in millimetres



Key

1 Bearing face

a Diameter M: spotfacing is recommended for installation in aluminium alloys to prevent the bearing face from swelling

Figure 5

Key

1 Thread pitch diameter

2 Normal boss

3 Repair-size boss

a C = minimum completely formed thread length

b $E = C + 3$ pitches, require manual tapping

c $E_1 = C + 5$ pitches, minimum length for machine tapping

d T = minimum hole centerline to part edge distance for installation

e Y = calculated on following basis: $Y = 0{,}002\ C$

f Diameter G min. = 2 T

g Diameter G_1 min.: there are no oversized studs for repair, diameter G_1 shall be sized for the type of repair considered at design stage

Figure 6