



**NSAI**  
Standards

Irish Standard  
I.S. EN 16602-70-30:2014

# Space product assurance - Wire wrapping of high-reliability electrical connections

**I.S. EN 16602-70-30:2014**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## Correction Notice

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- UAP
- TC Approval
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TAN

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It has been brought to our attention that this document, issued on 2014-10-29 (CEN Standards Publications Weekly Output Reference 2014/10/V) requires modification.

A superseding note is added to the English version. "This document supersedes EN 50389:2005".

Please find enclosed the updated English version.

We apologise for any inconvenience this may cause.

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EUROPEAN STANDARD

**EN 16602-70-30**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

## Space product assurance - Wire wrapping of high-reliability electrical connections

Assurance produit des projets spatiaux - Enveloppe de fils  
pour connexion électrique à fiabilité élevée

Raumfahrtproduktsicherung - Umhüllung von Kabeln für  
hochzuverlässige elektrische Verbindungen

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

CEN and CENELEC 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 CEN-CENELEC Management Centre or to any CEN and CENELEC 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 and CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN and CENELEC members are the national standards bodies and national electrotechnical committees of 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 United Kingdom.



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Avenue Marnix 17, B-1000 Brussels**

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## Foreword

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This document (EN 16602-70-30:2014) has been prepared by Technical Committee CEN/CLC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16602-70-30:2014) originates from ECSS-Q-ST-70-30C.

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 50389:2005.

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

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This Standard specifies requirements for preparing and assembling parts to be joined by wire wrapping, as well as the selection, calibration, use and certification of wire wrapping tools.

The covered wire-wrapped connections are illustrated in Figure 1-1.

This type of connection is similar to "Class A preferred" or "modified" connection detailed in MIL-STD-1130, and NASA NHB 5300.4(3H).

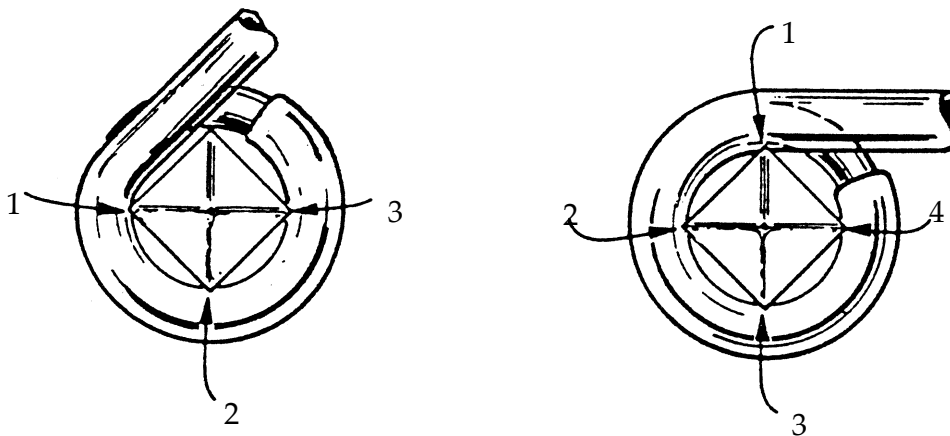
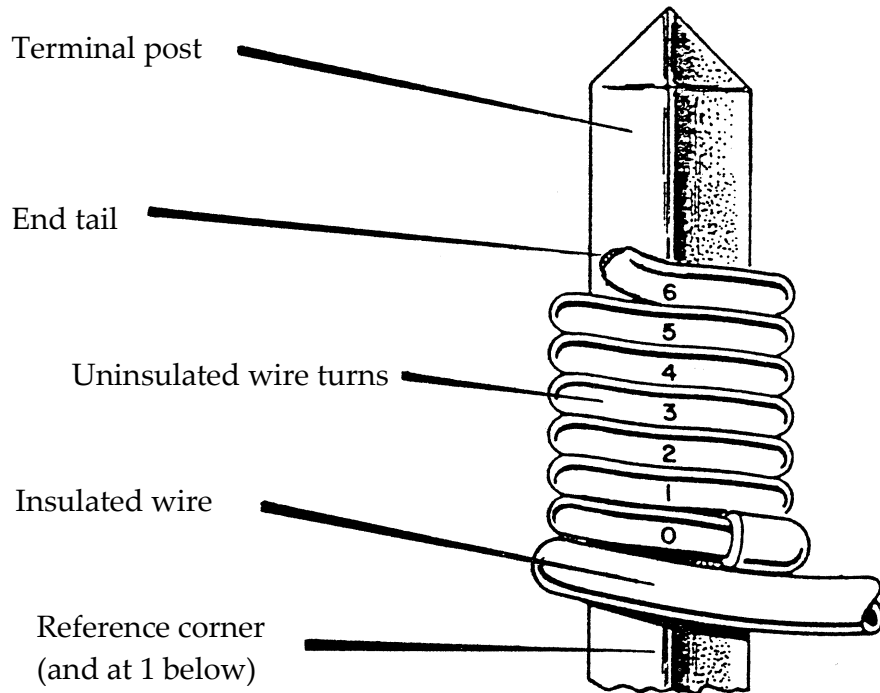
Only previously tested and qualified wire-wrapped connections are covered by this Standard, which includes four wire sizes from 24 AWG to 30 AWG, and three terminal post sizes up to 1,78 mm maximum diagonal. A step-by step procedure is covered in the informative Annex A.

The use of heavier gauge wire and larger terminals is not generally prohibited, but it is considered unlikely that for such dimensions the method of wire-wrapping would be chosen as the electrical interconnection technique. Instead it is assumed that wire larger than 24 AWG will be multi-stranded and terminated by soldering in conformance with ECSS-Q-ST-70-08, or by crimping in conformance with ECSS-Q-ST-70-26.

Training and certification requirements for operators and inspectors are defined in clause 5.6.7 and in ECSS-Q-ST-20.

With effect from the date of approval, this Standard announces the adoption of the external document on a restricted basis for use in the European Cooperation for Space Standardization (ECSS) system.

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



Shows either 3 or 4 corners of contact of insulation minimum  $\frac{3}{4}$  turn of insulated wire

**Figure 1-1: Single wire-wrapped connection to square terminal and reference corner**

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