

Svenska Elektriska Kommissionen, SEK

Fastställt	Utgåva	Sida	Ingår i
2004-02-23	1	1 (1+30)	SEK Område 78

© Copyright SEK. Reproduction in any form without permission is prohibited.

Arbete med spänning – Teleskopiska stänger och teleskopiska mätstänger

*Live working –
Telescopic sticks and telescopic measuring sticks*

Som svensk standard gäller europastandarden EN 62193:2003. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62193:2003.

Nationellt förord

Europastandarden EN 62193:2003

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 62193, First edition, 2003 - Live working - Telescopic sticks and telescopic measuring sticks**
utarbetad inom International Electrotechnical Commission, IEC.

ICS 13.260; 29.240.20; 29.260.99

Denna standard är fastställd av Svenska Elektriska Kommissionen, SEK, som också kan lämna upplysningar om **sakinnehållet** i standarden.
Postadress: SEK, Box 1284, 164 29 KISTA
Telefon: 08 - 444 14 00. Telefax: 08 - 444 14 30
E-post: sek@sekom.se. Internet: www.sekom.se

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

Svenska Elektriska Kommissionen, SEK, svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK

Box 1284
164 29 Kista
Tel 08-444 14 00
www.sekom.se

EUROPEAN STANDARD

EN 62193

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2003

ICS 13.260; 29.240.20; 29.260.99

English version

**Live working -
Telescopic sticks and telescopic measuring sticks
(IEC 62193:2003)**

Travaux sous tension -
Perches télescopiques
et perches de mesure télescopiques
(CEI 62193:2003)

Arbeiten unter Spannung -
Teleskopische Stangen
und teleskopische Messstangen
(IEC 62193:2003)

This European Standard was approved by CENELEC on 2003-09-23. 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 Central Secretariat or to any 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 78/513/FDIS, future edition 1 of IEC 62193, prepared by IEC TC 78, Live working, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62193 on 2003-09-23.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2004-07-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-10-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes B, C, D, E and ZA are normative and annexes A and F are informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62193:2003 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60743	NOTE	Harmonized as EN 60743:2001 (not modified).
IEC 61472	NOTE	Harmonized as EN 61472:1995 (modified).
IEC 61477 + A1	NOTE	Harmonized as EN 61477:2002 + A1:2002 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60060-1 + corr. March	1989 1990	High-voltage test techniques Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 60068-1	1988	Environmental testing Part 1: General and guidance	EN 60068-1 ¹⁾	1994
IEC 60068-2-18	2000	Part 2-18: Tests - Tests R and guidance: Water	EN 60068-2-18	2001
IEC 60417 database	2002	Graphical symbols for use on equipment	-	-
IEC 60832 (mod)	1988	Insulating poles (insulating sticks) and universal tool attachments (fittings) for live working	EN 60832	1996
IEC 60855 (mod)	1985	Insulating foam-filled tubes and solid rods for live working	EN 60855	1996
IEC 61235 (mod)	1993	Live working - Insulating hollow tubes for electrical purposes	EN 61235	1995
IEC 61318	- ²⁾	Live working - Quality assurance plans applicable to tools, devices and equipment	-	-

¹⁾ EN 60068-1 includes corrigendum October 1988 + A1:1992 to IEC 60068-1.

²⁾ To be published.

CONTENTS

1	Scope	9
2	Normative references.....	9
3	Terms and definitions	11
4	Classification	15
5	Requirements	15
5.1	Safety.....	15
5.2	General	15
5.3	Requirements for the lock assembly and end caps.....	17
5.4	Surface finish	17
5.5	Dimensional requirements	17
5.6	Marking	17
5.7	Instructions for use	19
6	Type testing.....	19
6.1	General	19
6.2	Visual inspection and dimensional check	21
6.3	Durability of markings	21
6.4	Dielectric tests.....	21
6.5	Mechanical tests.....	23
7	Quality assurance plan	27
8	Modifications	27
	Annex A (informative) Selection of the length of the tip section of the tool.....	37
	Annex B (normative) Suitable for live working; double triangle (IEC-60417-5216:2002-10) ...	39
	Annex C (normative) Chronology of tests	41
	Annex D (normative) Quality assurance plan.....	43
	Annex E (normative) Acceptance tests	47
	Annex F (informative) In-service recommendations	49
	Bibliography.....	59
	Figure 1 – Test for surface hydrophobic properties – visual observation (see 6.4.1.1)	29
	Figure 2 – Surface dielectric test (see 6.4.2)	31
	Figure 3 – Bending test (see 6.5.1)	33
	Figure 4 – Free fall impact test (see 6.5.2)	33
	Figure 5 – Tension test (see 6.5.3).....	35
	Figure 6 – Torsion test (see 6.5.4)	35
	Figure F.1 – Typical set-up for high-voltage tests	57
	Table C.1 – Sequence of tests	41
	Table D.1 – Classification of defects	45

LIVE WORKING – TELESCOPIC STICKS AND TELESCOPIC MEASURING STICKS

1 Scope

This International Standard covers telescopic sticks and telescopic measuring sticks to be used for live working on a.c. or d.c. electrical installations at 1 000 V and above for a.c. and 1 500 V and above for d.c.

The telescopic sticks are designed to accept attachments that meet appropriate live working standards and, together with these attachments, may be used to perform mechanical work on live parts at a distance. Telescopic sticks are also designed to accept diagnostic devices that meet appropriate live working standards and are used to make the diagnostic devices reach parts of an installation to be tested. Telescopic measuring sticks, or telescopic sticks equipped with graduations, are used to measure distances to or between live parts.

NOTE Under certain circumstances, the telescopic sticks covered by this standard can be used for installing portable earthing or earthing and short-circuiting equipment if the mechanical stresses during use are lower than the rated values.

The tools (telescopic sticks and telescopic measuring sticks) covered by this standard are for use under dry conditions but could also be used under very humid conditions, using appropriate working procedures.

Telescopic hook sticks are not covered by this standard. Telescopic bonding sticks and any other speciality telescopic sticks designed at the request of users are not covered by this standard.

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.

IEC 60060-1:1989, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-18:2000, *Environmental testing – Part 2-18: Tests – Test R and guidance: Water*

IEC 60417-DB:2002¹, *Graphical symbols for use on equipment*

IEC 60832:1988, *Insulating poles (insulating sticks) and universal tool attachments (fittings) for live working*

IEC 60855:1985, *Insulating foam-filled tubes and solid rods for live working*

¹ "DB" refers to the IEC on-line database.