

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

## Utrustning för arbete under spänning – Sadlar och stångklämmor med tillbehör

*Live working –  
Saddles, stick clamps and their accessories*

Som svensk standard gäller europastandarden EN 61236:2011. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61236:2011.

### Nationellt förord

Europastandarden EN 61236:2011

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61236, Second edition, 2010 - Live working - Saddles, stick clamps and their accessories**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61236, utgåva 1, 1996, gäller ej fr o m 2014-02-01.

---

ICS 13.260; 29.240.20; 29.260.99

---

Denna standard är fastställd av SEK Svensk Elstandard, 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@elstandard.se. Internet: www.elstandard.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*

SEK Svensk Elstandard 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 Svensk Elstandard**

Box 1284  
164 29 Kista  
Tel 08-444 14 00  
[www.elstandard.se](http://www.elstandard.se)

English version

**Live working -  
Saddles, stick clamps and their accessories  
(IEC 61236:2010)**

Travaux sous tension -  
Selles, manchons et leurs accessoires  
(CEI 61236:2010)

Arbeiten unter Spannung -  
Mastsättel, Stangenschellen und Zubehör  
(IEC 61236:2010)

This European Standard was approved by CENELEC on 2011-02-01. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**CENELEC**

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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 78/850/CDV, future edition 2 of IEC 61236, prepared by IEC TC 78, Live working, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61236 on 2011-02-01.

This European Standard supersedes EN 61236:1995.

This EN 61236:2011 includes the following significant technical changes with respect to EN 61236:1995:

- clarification of the requirements and of the test provisions;
- addition of a test for the durability of marking;
- application of conformity assessment for products having completed the production phase, according to EN 61318:2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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) 2011-11-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-02-01

Annex ZA has been added by CENELEC.

---

## Endorsement notice

The text of the International Standard IEC 61236:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60743:2008      NOTE Harmonized as EN 60743:2001+A1:2008 (not modified).

---

**Annex ZA**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

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.

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 60417	Data- base	Graphical symbols for use on equipment	-	-
IEC 61318	2007	Live working - Conformity assessment applicable to tools, devices and equipment	EN 61318	2008
IEC 61477	-	Live working - Minimum requirements for the utilization of tools, devices and equipment	EN 61477	-

## CONTENTS

INTRODUCTION.....	6
1 Scope.....	7
2 Normative references .....	7
3 Terms, definitions and symbols .....	7
3.1 Terms and definitions .....	7
3.2 Symbols .....	8
4 Requirements .....	8
4.1 General.....	8
4.2 Dimensional requirements .....	8
4.3 Mechanical requirements.....	8
4.4 Protection against corrosion .....	9
4.5 Marking.....	9
4.6 Instructions for use.....	10
5 Tests.....	10
5.1 General.....	10
5.2 Visual and functional inspection .....	10
5.3 Dimensional check .....	11
5.4 Durability of marking .....	11
5.5 Mechanical tests .....	11
5.5.1 General test provisions and pass criteria .....	11
5.5.2 Specific test provisions.....	11
6 Conformity assessment .....	37
7 Modifications .....	37
Annex A (normative) Suitable for live working; double triangle (IEC 60417-5216:2002-10) ...	38
Annex B (normative) General type test procedure .....	39
Annex C (normative) Classification of defects and associated requirements and tests .....	45
Bibliography.....	49
Figure 1 – Locking device with chain or strap – tensile test.....	12
Figure 2 – Locking device with chain or strap – bending test.....	12
Figure 3 – Chain (strap) binder – tensile test .....	13
Figure 4 – Locking device – bending test .....	14
Figure 5 – Test on the retractable spring.....	15
Figure 6 – Chain (strap) binder – torque test.....	16
Figure 7 – Ring saddle with rigid bracket – bending test .....	17
Figure 8 – Ring saddle with chain bracket – tensile test .....	18
Figure 9 – Lift-type saddle – bending test .....	19
Figure 10 – Shackle – tensile test .....	20
Figure 11 – Pole-type saddle – bending test .....	21
Figure 12 – Saddle extension – bending test.....	22
Figure 13 – Tower-type saddle – bending test.....	23
Figure 14 – Crossarm-type saddle – bending test .....	24

Figure 15 – Crossarm-type saddle – torque test.....	25
Figure 16 – Block saddle – bending test .....	26
Figure 17 – Tower-arm yoke – bending test .....	27
Figure 18 – Platform pivot attachment – bending test on inner flange of steel angle.....	28
Figure 19 – Platform pivot attachment – bending test on outer flange of steel angle .....	28
Figure 20 – Example of tensile test on a hydraulic tension puller on double-string set.....	29
Figure 21 – Example of bending test on a saddle for triangular yoke.....	30
Figure 22 – Example of bending test on a saddle for rectangular yoke.....	30
Figure 23 – Example of tensile test on a tenon extension.....	31
Figure 24 – Example of bending test on a insulating rope gin.....	31
Figure 25 – Example of tensile test on the block anchoring point of insulating rope.....	32
Figure 26 – Slippage test on a stick clamp.....	32
Figure 27 – Bending test on a stick clamp.....	33
Figure 28 – Tensile test on the assembling screw for coupled stick clamps.....	34
Figure 29 – Slippage test of a support-stick stirrup .....	35
Figure 30 – Bending test of a support-stick stirrup (rigid stirrup) .....	35
Figure 31 – Tensile test of a support-stick stirrup (swivel stirrup).....	36
Figure 32 – Bending test of a offset eye.....	36
Table 1 – Mechanical ratings for each type of device .....	9
Table B.1 – Sequence number of the type tests to be carried out.....	40
Table B.2 – Sequence number of the type tests to be carried out.....	41
Table B.3 – Sequence number of the type tests to be carried out.....	42
Table B.4 – Sequence number of the type tests to be carried out.....	43
Table B.5 – Example of a type test sequence for tower-type saddle.....	44
Table C.1 – Classification of defects and associated requirements and tests for saddles, stick clamps and their accessories.....	45

## INTRODUCTION

The requirements provided in this standard are essential requirements. Each user of this standard may supplement it with their own requirements. These will cover, for example, required mechanical performance and conditions of interchangeability with equipment already in service. In such cases, caution should be taken to maintain or improve the performance of the products.

This International Standard has been prepared in accordance with the requirements of IEC 61477.

The products covered by this standard may have an impact on the environment during some or all stages of its life cycle. These impacts can range from slight to significant, be of short-term or long-term, and occur at the global, regional or local level.

Except for a disposal statement in the instructions for use, this standard does not include requirements and test provisions for the manufacturers of the product, or recommendations to the users of the product for environmental improvement. However, all parties involved in the product's design, manufacture, packaging, distribution, use, maintenance, repair, reuse, recovery and disposal are encouraged to take account of environmental considerations.



## **LIVE WORKING – SADDLES, STICK CLAMPS AND THEIR ACCESSORIES**

### **1 Scope**

This International Standard is applicable to saddles, stick clamps and their accessories, used for live working.

The products designed and manufactured according to this standard contribute to the safety of the users provided they are used by skilled persons, in accordance with safe methods of work and the instructions for use.

### **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 60417, *Graphical symbols for use on equipment*

IEC 61318:2007, *Live working – Conformity assessment applicable to tools, devices and equipment*

IEC 61477, *Live working – Minimum requirements for the utilization of tools, devices and equipment*