

SUTN	Návod na aplikovanie európskej normy EN 50160.	TNI CLC/TR 50422 33 0121
-------------	---	--

Táto technická normalizačná informácia obsahuje anglickú verziu CLC/TR 50422:2013.
This Technical standard information includes the English version of CLC/TR 50422:2013.

Táto technická normalizačná informácia bola oznámená vo Vestníku ÚNMS SR č. 12/13

TECHNICAL REPORT
RAPPORT TECHNIQUE
TECHNISCHER BERICHT

CLC/TR 50422

September 2013

ICS 29.020

Supersedes CLC/TR 50422:2003 + corr. Jun.2005

English version

Guide for the application of the European Standard EN 50160

Guide d'application de la Norme
Européenne EN 50160

Leitfaden zur Anwendung der
Europäischen Norm EN 50160

This Technical Report was approved by CENELEC on 2013-07-22.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels

Contents	Page
Foreword	4
Introduction	5
1 Scope	6
2 Historical overview of the Standard and its development	6
2.1 Historical development	6
2.2 Structure	9
2.3 New versions of EN 50160. A move towards limits and requirements	10
2.4 HV chapter	11
3 The Standard	12
3.1 General	12
3.2 Applicability	13
3.3 Covered / Not covered phenomena	15
3.4 Specific terms	16
3.4.1 General	16
3.4.2 Supply voltage	16
3.4.3 Supply terminal and other reference points	16
3.4.4 Nominal voltage (U_n) and declared voltage (U_c)	17
3.5 “Measurement according to EN 50160”	18
3.6 Averaging times, observation periods	18
3.7 PQ values & test methods	19
3.7.1 Probability factors	19
3.7.2 Verification of compliance with EN 50160	20
3.8 Rapid voltage changes and flicker	21
3.9 Voltage dips & swells classification tables	22
3.9.1 Voltage dips characteristics	22
3.9.2 Residual voltage (u)	22
3.9.3 Duration (t)	23
3.9.4 Voltage-dips statistics	23
3.9.5 Voltage-swells characteristics	24
3.9.6 Transient overvoltages	25
3.10 Trends	25
4 Position of EN 50160 in the standards scenario	25
4.1 EMC & PQ. Relationship	25
4.2 Position to other standards	26
4.2.1 EMC Standards	26
4.2.2 Other product standards	28
4.2.3 EN 60038	28
4.2.4 EN 61000-4-30	29
Annex A (informative) Distributed generation and its impact on the supply voltage	30
Annex B (informative) Voltage / current components in the frequency range 2 kHz – 150 kHz and its impact on the supply voltage	32
Annex C (informative) Overvoltages	35
C.1 Temporary (power frequency) overvoltages between live conductors and earth	35
C.1.1 General	35
C.1.2 LV distribution systems	35
C.1.3 MV distribution systems	35
C.2 Transient overvoltages between live conductors and earth	36
C.2.1 General	36
C.2.2 LV distribution system	36

C.2.3	MV distribution systems	38
C.3	Temporary (power frequency) overvoltages between live conductors	38
Annex D	(informative) Abbreviations	39
Bibliography	41

Foreword

This document (CLC/TR 50422:2013) has been prepared by CLC/TC 8X "System aspects of electrical energy supply".

This Technical Report, prepared by TF 8 of CLC/TC 8X/WG 1 "Physical characteristics of electrical energy", is based on CLC/TR 50422:2003 (first edition) [4] and the development having taken place since.

This document supersedes CLC/TR 50422:2003 + corrigendum June 2005.

CLC/TR 50422:2013 includes the following significant technical changes with respect to CLC/TR 50422:2003: this second edition has been extended, with regard to

- the inclusion of high voltage (HV) supply in the Standard,
- the relation between EN 50160 and other standards,
- the choice of power quality (PQ) values and related probabilities,
- actual trends in network use, which might lead to further development of the Standard.

For the purpose of this Technical Report, "the Standard" refers to EN 50160:2010 [8]. Likewise, "the Guide" refers to this Application Guide, CLC/TR 50422:2013.

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Introduction

By its very nature, a standard has to be concise and cannot give a comprehensive background of the subject being dealt with. It was accordingly decided to prepare a guide providing additional information and clarification of the Standard, whose first edition was published in 1994. The recent Application Guide represents the 2nd edition of such a guide, which considers the development of the Standard having taken place since the publication of the 1st edition..

1 Scope

The aim of this Technical Report is to provide background information and explanations on EN 50160 with regard to the history of its development as well as to its correct application.

koniec náhľadu – text ďalej pokračuje v platenej verzii STN