SLOVENSKI STANDARD
SIST EN 50052:1998/A2:1998

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Cast aluminium alloy enclosures for gas-filled high-voltage switchgear and controlgear - Amendment A2

Cast aluminium alloy enclosures for gas-filled high-voltage switchgear and controlgear

Kapselungen aus Leichtmetallguss fur gasgefüllte Hochspannungs-Schaltgeräte und -Schaltanlagen

Enveloppes en alliage d'aluminium coulé pour l'appareillage à haute tension sous pression de gaz

Ta slovenski standard je istoveten z: EN 50052:1986/A2:1993

ICS:

29.130.10	Visokonapetostne stikalne in krmilne naprave	High voltage switchgear and controlgear
77.150.10	Aluminijski izdelki	Aluminium products

SIST EN 50052:1998/A2:1998 **en**

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Supersedes EN 50052:1986/A1:1990

Descriptors: Enclosure, high-voltage switching device, H.V. metal-enclosed switchgear and controlgear, pressurized enclosure, (casting, aluminium alloy casting)

Amendment A2 to the English version of EN 50052

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This amendment A2 modifies the European Standard EN 50052:1986. It was approved by CENELEC on 1993-07-06. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

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FOREWORD

This amendment was prepared by CENELEC Technical Committee TC17C, High-voltage enclosed switchgear and controlgear.

The text of the draft was submitted to the voting procedure in March 1993 and was approved by CENELEC as amendment A2 to EN 50052:1986 on July 6, 1993.

The present amendment A2 supersedes amendment A1: 1990.

The following dates were accepted:

- latest date of publication of an identical national standard	(dop)	1994-10-01
- latest date of withdrawal of conflicting national standards	(dow)	1994-10-01

TEXT OF AMENDMENT

1 Scope (page 4)

The first paragraph has to be changed as follows (new text in bold letters):

..... of high-voltage switchgear and controlgear, **where the gas is used principally for its dielectric and/or arc-quenching properties, with rated voltages.**

- **1 kV and up to and including 52 kV and with gas-filled compartments with design pressure greater than 3 bar (gauge);**

- **and with rated voltage 72,5 kV and above.**

Clause 4.2 (page 5):

From the text of Note 3 has to be deleted the following:

..... "such as compressed asbestos fibre".

A complete annex has to be added as follows:

Annex B (informative)

A-deviations

A-deviations: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CENELEC member.

Clause	Member (regulation)
Clause 0 (last paragraph)	**Austria** (Dampfkesselverordnung (Fire Vessel Code) BGBl. Nr. 510/1986, Clause V and decree Nr. 143, GZ 43010/2-IV/81) The regulations for pressure vessels include specifications for tests which - are the responsibility of the manufacturer only; - have to be carried out in connection with a type approval (type test); - have to be carried out by independent experts. NOTE This principle is in accordance with the EC Directive 87/404/EEC and the Policy Statement of the EC Commission Doc. 74/88. **France** (Ministerial Decree of July 23rd, 1943, Clause 17) An internal and external inspection of the enclosure is mandatory every 3 years, and the renewal of the pressure test every 5 years (in case of SF_6 gas). **Italy** (CAPITOLO VSR 8.B D.M. 1 DICEMBRE 1980) Disciplina dei contenitori a pressione di gas con membrature miste di materiale isolante e di materiale metallico, contenenti parti attive di apparecchiature elettriche. A routine test at 1.1 the design pressure is required on the complete assembly. The test can be performed in the factory or at site.

Clause 4	**Austria** (Werkstoff- und Bauvorschriften (Material and Construction Rules) BGBl.Nr. 264/49, Clause 1-V/C) The material characteristics are defined exactly (e. g. elongation > 14 %) and the material appropriate for the construction of pressure vessels are specified mandatorily. **Italy** (ANCC RACCOLTA M EDIZIONE 1978; AGGIORNAMENTI al 31 GENNAIO 1982) Only cast aluminium alloys which are listed in the Raccolta M of ANCC edition 1978 and revision edition 31st January 1982 are permitted. **Sweden** (Applied practice in accordance with the Work Environmental Act SFS 1977: 1160 with amendments) Only nationally standardized aluminium alloys with guaranteed mechanical strength values shall be used. For cast aluminium alloys the break alongation for a separately cast test bar shall be at least 2 %.
Clause 5.3	**Italy** (ANCC RACCOLTA VSR EDIZIONE 1978; AGGIORNAMENTO 31 GENNAIO 1982). Design stress established by calculation (clauses VSR5 of the Raccolta VSR). The permissible design stress (fa) at the design pressure and for a temperature up to 50 °C is: $fa = \frac{Rm}{4 \times 1,2} = \frac{Rm}{4,8}$
Clause 5.4	**Italy** (ANCC RACCOLTA VSR EDIZIONE 1978; AGGIORNAMENTO 31 GENNAIO 1982) The rules of the design listed in the Raccolta VSR Edition 1978 and revision January 31st, 1982 are permitted. The design must be approved by the Authority.

	Sweden (Applied practice in accordance with the Work Environmental Act SFS 1977: 1160 with amendments) (The permissible design stress at the design pressure is $fa = \frac{Rm}{5}$
Clause 6.5	**Austria** (Werkstoff- und Bauvorschriften (Material and Construction Rules) BGBl.Nr. 264/49, enclosure 1-clause V/C) The scope of testing procedures is specified closely.
Clause 7.2	**Austria** (Werkstoff- und Bauvorschriften (Material and Construction Rules) BGBl.Nr. 67/78, enclosure 1-clause III/1) The supplier needs the approval of an Austrian supervisor as specialized welding manufactory according to ÖNORM M7812. The regulations include also precise instructions on procedure certification, welder certification and accepted errors. **Italy** (ANCC RACCOLTA S EDIZIONE 1978; AGGIORNAMENTI al 31 GENNAIO 1982) Welding procedure and welders must be approved by the Authority according to ANCC Raccolta S Edition 1987 Revision 31st January 1982.
Clause 8	**Italy** (ANCC RACCOLTA M EDIZIONE 1978; AGGIORNAMENTI al 31 GENNAIO 1972). Heat treatment must be carried out according to ANCC Raccolta M Edition 1978.

Clause 9.1	**Austria** (Werkstoff- und Bauvorschriften (Material and Construction Rules) BGBl.Nr. 264/49 The regulations require the calculation generally. A burst test is specified. The safety factor is 5,0.
Clause 9.1.2	**Italy** (ANCC CAPITOLO VSR 6.B) The bursting pressure B must be higher or equal than the value given in the following formula: $B = 4,25 \times \frac{k}{Rm} \times \frac{1}{s_{min}} \times p$ where: k = actual tessile strength of the sample under test s = actual thickness of the sample under test s_{min} = minimum design thickness permitted **Sweden** (Applied practice in accordance with the Work Environmental Act SFS 1977: 1160 with amendments) The design pressure (p) shall be calculated by $p = \frac{B}{5}$
Clause 9.1.3	**Italy** (ANCC CAPITOLO VSR 6.B AND VSR7.A) The permissible design stress (fa) computed according VSR 6.B and VSR 7.A must be equal or less than: $fa \leq \frac{Rm}{4.8}$
Clause 9.2	**Italy** (ANCC CAPITOLO VSR 8.B) Inspection and certification must be carried out according to ANCC Capitolo VSR 8.B.
Clause 10	**Austria** (Dampfkesselverordnung (Fire Vessel code), BGBl.Nr. 510/1986, § 30, paragraph 2). Pressure relief devices shall be provided mandatorily.