



## LOVAG

### Test Instruction IEC 62208 and EN 62208

### Conditions for Testing Empty Enclosures

### For Low-Voltage Switchgear and Controlgear Assemblies

### General requirements

This Test Instruction is based on the following standard:

IEC 62208 Edition 1.0 : 2002

EN 62208 : 2003

It complies with this standard in all respects and provides additional information ensuring a suitable degree of repeatability of the tests between the different test laboratories.

Signature:

A handwritten signature in blue ink, appearing to read 'S. Manganaro', written over a light blue grid background.

Dr. S.Manganaro  
Chairman of LOVAG technical Committee

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**PREAMBLE**

For convenience in the use of this test instruction, the paragraphs are numbered according to the clauses in the IEC document.

Tests must be carried out according to the standard; the test instruction only adds a few specific details.

**1. Scope**

Refer to standard.

**2. Normative references**

Refer to standard.

**3. Terms and definitions**

Refer to standard.

**4. Classification**

Refer to standard

**5. EMC requirements**

Refer to standard.

**6. Information to be given regarding the enclosure****6.1 Marking**

Refer to standard

**6.2 Documentation**

Check if all required information is available concerning:

- Thermal power dissipation (see 6.2)
- Dimensions (see 8.2)
- Mounting arrangements (see 8.3), including method of fixing (see 4 b)  
of the enclosure  
of the equipment mounting surfaces
- Static loads (see 8.4)
- Lifting and transport support (see 8.5)
- Protective circuit (see 8.7)
- Rated insulation voltage (see 8.8 and 4 e), only for enclosures made of insulating material.

- Protected space (see 3.2)
- IK-code (see 8.9)
- IP-code (see 8.10)
- Type of material (see 4 a)
- Intended location (see 4 c and 7.1.1)
- Service conditions (see 7, including 7.1; if applicable also 7.2 and 7.3)
- Reference to this standard

## 7. Service conditions

Refer to standard.

## 8. Design and construction

Refer to standard.

## 9. Type tests

### 9.1. General conditions of tests

Empty Enclosures can be considered of the same fundamental design, if the following conditions are met:

- They have the same basic design;
- Type of material is identical (§ 4.a )
- Same thickness of material
- Method of fixing is identical (§ 4.b )
- The intended location is identical (§ 4.c )
- The degree of protection is identical (§ 4 d ) IP & IK
- The rated insulation voltage is identical (§ 4 e )
- Service conditions are identical (§ 7)

The following variations are permitted:

- Dimensions

Taking into account height, width and depth of the enclosure, the test-program should at least comprise the following enclosures:

- The smallest enclosure;
- The largest enclosure ;
- If different from the two types here above, the enclosure with the largest distance between two closing points (hinges, cover screws, lock) on one side of the door or cover.

According to Table 1, the tests have to be performed as follow:

	Enclosure to be tested	Sample 1	Sample 2	Sample 3
Type 1	Smallest size	X	X (**)	N/A
Type 2	Largest size	X	X (**)	X
Type 3	Largest distance between two closing points	X (*)	N/A	N/A

(\*) New Type requested, if different from Type 1 and Type 2

(\*\*) § 9.8.2 and § 9.8.3 can be performed only on one size

*Rationale regarding the selection of tested size:*

- For sample 1: due to IK verification
- For sample 2: due to thermal stability verification
- For sample 3: due to protective circuit verification (for a same construction, selection of the longest expected protective circuit as 0.1Ω is a maximum value not to be exceeded); anyway, the smallest size is also checked with sequence on sample 1

**Table 1 – Number of samples to be tested and order of test per sample**

Subclause	Test	Sample 1	Sample 2	Sample 3	Representative sample (see 9.11)
9.3	Static loads	1	N/A	N/A	N/A
9.4	Lifting	2	N/A	N/A	N/A
9.5	Verification of axial inserts loads of metal	3	N/A	N/A	N/A
9.6	Verification of degree of protection against external mechanical impacts (IK code)	4	N/A	N/A	N/A
9.7	Verification of degree of protection (IP code)	5	N/A	N/A	N/A
9.8.1	Verification of thermal stability	N/A	1	N/A	N/A
9.8.2	Verification of resistance to heat	N/A	2	N/A	N/A
9.8.3	Verification of resistance to abnormal heat and fire	N/A	3	N/A	N/A
9.9	Verification of dielectric strength	6	N/A	N/A	N/A
9.10	Verification of the continuity of the protective circuit	7	N/A	2	N/A
9.11	Verification of resistance to weathering	N/A	N/A	N/A	a)
9.12	Verification of resistance to corrosion	N/A	N/A	1	N/A
9.2	Marking	8	N/A	N/A	N/A
a)	Tests carried out on representative sample only. All tests shall be carried out on complete enclosures. If this is not possible, they can be carried out on representative samples taken from the enclosure.				

**9.2. Marking**

Refer to standard.

**9.3 Static loads**

Refer to standard.

**9.4 Lifting**

Refer to standard.

**9.5 Verification of axial loads of metal inserts**

Refer to standard.

**9.6 Verification of degree of protection against external mechanical impacts (IK Code)**

The impacts shall be applied evenly distributed to the faces of the enclosure : i.e. at least one impact should be given in a corner of the face, and one in the centre of the face.

**9.7 Verification of degree of protection (IP Code)**

Refer to standard and to LOVAG Test Instruction IEC/EN 60529.

**9.8 Properties of insulating materials****9.8.1 Verification of thermal stability**

Refer to standard.

**9.8.2 Verification of resistance to heat**

Refer to standard.

**9.8.3 Verification of resistance to abnormal heat and to fire**

In the case of multilayered insulating materials, the tip of the glowing wire apparatus is applied to the side of the multilayer turned to the inside of the enclosure.

**9.9 Verification of the dielectric strength**

Refer to standard.

**9.10 Verification of the continuity of the protective circuit**

Refer to standard.

**9.11 Verification of resistance to weathering**

Refer to standard.

**9.12 Verification of resistance to corrosion**

If samples or parts are taken from the enclosure, metal parts that have contact with other metals shall be tested in the same combination as they would have in the enclosure itself.

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