

**The Appendix is an integral part of
Certificate of Accreditation No. 190/2023 of 19/04/2023**

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

ORGREZ, a.s.

CAB number 1179.2, Testing Laboratory E01

Vítkova 17, 186 00 Praha 8 – Karlín

Detailed information on activities within the scope of accreditation (determined analytes) is given in the section „Specification of the scope of accreditation“

Tests:

Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Subject of the test	Degrees of freedom ³
1*	Measurement of insulation resistance	SOP 1-01-20/72 (TSE_RIZ_02r06; TSE_RIZ_03r06; ČEZ_ME_0983r00, Annex B p. 3.4)	Rotating machine, power transformer, instrument transformer	-
2*	Measurement of capacity and dissipation factor	SOP 1-02-21/72 (TSE_TGC_05r06; ČEZ_ME_0983r00, Annex B, C p. 1.4)	Rotating machine, power transformer, instrument transformer, bushing	-
3*	Partial discharge measurement	SOP 1-04/72 (TSE_VYB_06r06)	Rotating machine	-
4*	Test by applied voltage	SOP 1-06/72 (TSE_UZ_09r06; TSE_UZ_10r06; TSE_UZ_11r06)	Rotating machine	-
5*	Measurement of winding resistance by dc current	SOP 1-22/72 (ČEZ_ME_0983r00, Annex B p. 2.4)	Power transformer	-
6*	Determination of SF ₆ content by acoustic method	SOP 1-60/72 (ČSN EN IEC 60480; ČSN EN IEC 60376)	Insulating gas	-
7*	Measurement of SF ₆ dew point by acoustic method	SOP 1-61/72 (ČSN EN IEC 60480; ČSN EN IEC 60376)	Insulating gas	-
8	Determination of water in insulating oil – by Karl Fischer automatic coulometric titration (Q _v) ⁺	SOP 2-10/72 (ČSN EN 60814; ZM-03; MP 04-2012)	Insulating liquid	-
9	Determination of the breakdown voltage of liquid insulants ≤ 60 kV at power frequency (U _p) ⁺	SOP 2-11/72 (ČSN EN 60156; ZM-04)	Insulating liquid	-

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Ordinal number ¹	Test procedure / method name	Test procedure / method identification ²	Subject of the test	Degrees of freedom ³
10	Determination of dissipation factor ($\text{tg } \delta$) ⁺ , relative permittivity (ϵ_r) ⁺ and d.c. resistivity (ρ) ⁺	SOP 2-12/72 (ČSN EN 60247; ZM-13)	Insulating liquid	-
11	Determination of acid value of insulating liquids by automatic potentiometric titration (ČK) ⁺	SOP 2-14/72 (ČSN EN 62021-1; ZM-12)	Insulating liquid	-
12	Determination of PCB content by gas chromatography (GC/ECD - congeners 28, 52, 101, 138, 153, 180) and the sum of PCB congeners by calculation from measured values	SOP 2-19/72 (ČSN EN 61619)	Insulating liquid	-
13	Determination of the content of free and dissolved gases from oil-filled electrical equipment by gas chromatography (GC/TCD + FID)	SOP 2-23/72 (ČSN EN 60567, except chap. 4, 5)	Insulating liquid	-
14	Determination of the content of dibenzyl disulfide (DBDS) by gas chromatography method (GC/ ECD)	SOP 2-26/72 (ČSN EN 62697-1)	Insulating liquid	-
15	Determination of average viscometric degree of polymerization (PPS) ⁺ of paper insulation	SOP 2-30/72 (ČSN EN 60450)	Cellulosic electrically insulating materials	-
16	Determination of the content of furan derivatives by high-performance liquid chromatography (HPLC/UV)	SOP 2-34/72 (ČSN EN 61198)	Insulating liquid	-

¹ asterisk at the ordinal number identifies the tests, which the laboratory is qualified to carry out outside the permanent laboratory premises

² if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest edition of the specified procedure is used (including any changes)

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³ the laboratory does not apply a flexible approach to the scope of accreditation

Specification of the scope of accreditation:

Ordinal test number	Detailed information on activities within the scope of accreditation (determined analytes)
13	Hydrogen, methane, ethane, ethylene, acetylene, carbon monoxide, carbon dioxide, oxygen, nitrogen and their sum calculated from measured values (Qp)
16	5-hydroxymethyl-2-furfural (5HMF), 2-furfuryl alcohol (2FOL), 2-furfural (2FAL), 2-acetylfuran (ACF), 5-methyl-2-furfural (5MEF) and their sum calculated from measured values.

Sampling:

Ordinal number	Sampling procedure name	Sampling procedure identification ¹	Subject of sampling
1	Sampling of insulating liquids (manual sampling)	SOP 2-02/72, (ČSN EN 60567 ed. 3 chap. 45; ČSN EN IEC 60475 ed. 2; ZM-02; MP 03-2012)	Insulating liquid

¹ if the document identifying the sampling procedure is dated, only these specific procedures are used. If the document identifying the sampling procedure is not dated, the latest edition of the specified procedure is used (including any changes)

Explanations:

SOP Standard Operating Procedure
ZM Test method of the Czech Association of High-Voltage Laboratories (AZVN)
MP Guideline of the Czech Association of High-Voltage Laboratories (AZVN)
TSE Rotating electrical machines – Technological procedure of ČEZ a. s.
ČEZ_ME ČEZ a. s. method
(...)⁺ The data in parentheses at the test procedure name are abbreviations of the individual tests and they are stated in reports.