

National Electrical Safety Board's regulations in English – 2017:4

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Section of legislation: Authorisation

Number: ELSÄK-FS 2017:4

Title: The National Electrical Safety Board's regulations on authorisation as an authorised electrician

Legal title: Elsäkerhetsverkets föreskrifter (2017:4) om auktorisation som elinstallatör

Link to regulations: <http://www.elsakerhetsverket.se/om-oss/lag-och-ratt/gallande-regler/Elsakerhetsverkets-foreskrifter-listade-i-nummerordning/elsak-fs-20174/>

Chapter 1 General provisions

Scope

1 § These regulations contain provisions on authorisation for electrical installation work and on the education and experience requirements which must be met in order to obtain authorisation as an authorised electrician under Section 20 of the Electrical Safety Act.

2 § Provisions on the activity types in which an authorised electrician can act as a compliance officer are contained in the National Electrical Safety Board's regulations (2017:3) on electrical installation companies and on the execution of electrical installation work or rules superseding them.

Definitions and abbreviations

3 § The definitions and abbreviations used in the Electrical Safety Act and the Electrical Safety Ordinance shall have the same meaning in these regulations.

In these regulations terms are defined as follows:

Electrical Safety Act (<i>elsäkerhetslagen</i>)	The Electrical Safety Act (2016:732) or rules superseding it,
Electrical Safety Ordinance (<i>elsäkerhetsförordningen</i>)	The Electrical Safety Ordinance (2017:218) or rules superseding it,
<i>ELSÄK-FS 2017:3</i>	The National Electrical Safety Board's regulations (2017:3) on electrical installation companies and on the execution of electrical installation work (<i>Elsäkerhetsverkets föreskrifter (2017:3) om elsystems företag och om utförande av elsystemsarbete</i>) or rules superseding them,
<i>EEA</i>	European Economic Area,
<i>original member state</i>	the member state in which an applicant acquired his or her professional qualifications or had them recognised,

<i>switch</i>	a device designed to disconnect and connect the current in one or more circuits,
<i>practical experience</i>	the practical experience which is required for authorisation under Section 20 of the Electrical Safety Act and further specified in these regulations,
<i>activity types</i>	the kinds of electrical installation work which the application can cover under Section 25 of the Electrical Safety Act, and
<i>authorisation</i>	authorisation as an electrician under Section 20 of the Electrical Safety Act with the scope set out in these regulations.

References in this statute to sections are references to sections within this statute unless otherwise stated.

Chapter 2 Authorisations

1 § Authorisation for electrical installation work under Sections 20 and 21 of the Electrical Safety Act are granted for one of the following three authorisations.

Authorisation	Scope of authorisation
<i>A Full authorisation</i>	All electrical installation work.
<i>AL Low voltage authorisation</i>	All electrical installation work in low-voltage installations
<i>B Limited authorisation</i>	Electrical installation work in low-voltage installations limited to work in existing final circuits consisting of

- 1 installation and relocation of light fittings, switches and socket outlets with associated cables,
- 2 permanent connection of electrical equipment which consumes electricity with associated connector, including the extension and connection of cables to the connector, and
- 3 disconnection of electrical equipment which consumes electricity with associated connector and cables.

A previously granted authorisation shall remain valid for the time being.

Chapter 3 Education and practical experience requirements

1 § General requirements in order to obtain authorisation for electrical installation work are contained in Section 20 of the Electrical Safety Act.

Chapter 3, Sections 2-7 contain more detailed provisions on education and practical experience requirements.

Full authorisation, A

2 § For full authorisation (A), the person applying for authorisation shall meet the following requirements.

- 1 The applicant shall have completed and passed education sufficient to meet the knowledge and skill requirements in Annexes 1 and 2.
- 2 The applicant shall have a total of at least four years' practical experience of electrical installation work in an electrical installation company or other work involving electricity and included in one of the fields in Annex 1 or 2, of which
 - a at least one year shall relate to electrical installation work in an electrical installation company which operates in one of the activity types in Chapter 4, Section 2 of ELSÄK-FS 2017:3 (*Electrical installation work in low-voltage installations*), and
 - b at least one year shall relate to electrical installation work in an electrical installation company which operates in one of the activity types in Chapter 4, Section 4 of ELSÄK-FS 2017:3 (*Electrical installation work in high-voltage installations*).

Provisions on the crediting of practical experience obtained in another EEA member state or in Switzerland are contained in Chapter 3 Sections 5-7.

Low voltage authorisation, AL

3 § For low voltage authorisation (AL), the person applying for authorisation shall meet the following requirements.

- 1 The applicant shall have completed and passed education sufficient to meet the knowledge and skill requirements in Annex 1.
- 2 The applicant shall have a total of at least four years' practical experience of electrical installation work in an electrical installation company or other work involving electricity and included in one of the fields in Annex 1 or 2, of which
 - a at least two years shall relate to electrical installation work in an electrical installation company which operates in one of the activity types in Chapter 4, Section 2 of ELSÄK-FS 2017:3 (*Electrical installation work in low-voltage installations*).

A person meeting the practical experience requirements for full authorisation under Chapter 3, Section 2, Point 2 shall be regarded as also having met the practical experience requirements for low voltage authorisation.

Provisions on the crediting of practical experience obtained in another EEA member state or in Switzerland are contained in Chapter 3 Sections 5-7.

Limited authorisation, B

4 § For limited authorisation (B), the person applying for authorisation shall meet the following requirements.

- 1 The applicant shall have completed and passed education sufficient to meet the knowledge and skill requirements in Annex 3.
- 2 The applicant shall have a total of at least two years' practical experience of electrical installation work in an electrical installation company or other work involving electricity and included in one of the fields in Annex 1, 2 or 3, of which
 - a at least one year shall relate to electrical installation work in an electrical installation company which operates in one of the activity types in Chapter 4, Section 2 or Section 3 of ELSÄK-FS 2017:3 (*Electrical installation work in low-voltage installations* or *Limited work in low-voltage installations*).

Provisions on the crediting of practical experience obtained in another EEA member state or in Switzerland are contained in Chapter 3 Sections 5-7.

Practical experience obtained in the EEA or Switzerland

Practical experience for persons who received their education in Sweden

5 § Provisions on the recognition of practical experience (professional training) obtained in another EEA member state or Switzerland for persons who received their education in Sweden are contained in the Act (2016:145) on the recognition of professional qualifications.

Practical experience for persons who received their education outside Sweden

6 § Notwithstanding Section 5, practical experience obtained in another EEA member state or Switzerland may be credited if it makes up no more than half the time requirement under these regulations.

Requirements concerning the practical experience

7 § Practical experience under Chapter 3, Section 5 and 6 shall meet the following requirements.

- 1 It shall have at least the scope and content which is required for the authorisation applied for, as set out in Chapter 3, Section 2, 3 or 4.
- 2 It shall have been carried out in accordance with the provisions applicable in the member state in which the experience was obtained.
- 3 It shall have taken place within the framework of a self-audit scheme or under equivalent circumstances.

Chapter 4 Recognition of foreign authorisation (EEA/Switzerland)

1 § Provisions on the recognition of professional qualifications obtained or recognised in another EEA member state or Switzerland are contained in Section 10 and 11 of the Act (2016:145) on the recognition of professional qualifications.

2 § Provisions on temporary professional activity in Sweden are contained in Section 6 of the Act (2016:145) on the recognition of professional qualifications.

Chapter 5 Application to the National Electrical Safety Board.

Application for authorisation

1 § A person wishing to apply for authorisation shall do so to the National Electrical Safety Board. The application shall at least contain information concerning the applicant's name, postal address, personal ID number or equivalent ID.

The following documents shall be enclosed with the application.

- 1 Attestation or certificate confirming that the applicant meets the education requirements.
- 2 Attestation confirming completed practical experience.

The attestation described in point 2 of the second part shall be issued by the electrical installation company/companies under whose self-audit scheme the applicant worked.

If the applicant is relying on practical experience other than electrical installation work in an electrical installation company, the attestation shall instead be issued by the company in which the work was carried out.

2 § An applicant relying on the practical experience from another member state described in Chapter 3, Sections 5-7 shall include with the application an attestation detailing the scope and content of the completed practical experience. The attestation shall be issued by the company in which the work was carried out.

Application for recognition of foreign authorisation

Content of application if the profession is regulated in the original member state

3 § An individual applying for recognition of foreign professional qualifications as described in Chapter 4 Section 1 shall submit the application to the National Electrical Safety Board.

Documents shall be enclosed with the application confirming that the applicant has the skill certificate or certificate of formal qualifications required in the original member state.

Content of application if the profession is not regulated in the original member state

4 § If the profession is not regulated in the member state from which the applicant obtained professional qualifications as stated in Section 3, documents shall be submitted which confirm that the applicant

- 1 has one of more skill certificates or certificates of formal qualifications issued in the original member state, or
- 2 has practised the profession in the original member state to the extent required in Section 10 (2) of the Act (2016:145) on the recognition of professional qualifications.

Chapter 6 Other provisions

1 § In individual cases, the National Electrical Safety Board may make exceptions to the provisions in these regulations.

Entry into force and transitional arrangements

- 1 These regulations shall enter into force on 1 July 2017, when the National Electrical Safety Board's regulations (2013:1) and general advice on authorisation for authorised electricians ELSÄK-FS 2013:1 shall cease to apply.
- 2 A person who before 1 July 2017 has completed education or internship which meets the education and internship requirements of ELSÄK-FS 2013:1 or its transitional arrangement may refer to these qualifications in the application under the present regulations.
- 3 The authorisations which were granted under previous regulations and which were valid on 30 June 2017 shall continue to be valid to the extent stated in the National Electrical Safety Board's decision.
- 4 A person who has obtained the authorisation AB or an authorisation equivalent to this authorisation on the basis of previous regulations shall from 1 July 2017 have the full authorisation A under the present regulations.
- 5 A person who has obtained the authorisation ABL or an authorisation equivalent to this authorisation on the basis of previous regulations shall from 1 July 2017 have the low voltage authorisation AL under the present regulations.
- 6 A person who has obtained the authorisation BB1, BB2 or an authorisation equivalent to either of these authorisations on the basis of previous regulations shall from 1 July 2017 have the limited authorisation B under the present regulations.

Annex 1

1. Low voltage authorisation (AL)

The knowledge and skill requirements encompass the fields of electrical installation, electric power, electric machines and rules and standards.

In the fields of electrical installations in buildings, electricity generation and distribution systems, industrial systems and electric machines, the applicant shall have performed practical laboratory exercises.

1.1 Electrical installations in buildings

The applicant shall have the following knowledge and skills.

- 1 Be able to carry out dimensioning of power and lighting systems.
- 2 Be able to perform simple mechanical design calculations.
- 3 Be able to draw diagrams with associated documentation.
- 4 Know how the choice of equipment or materials can affect electrical systems from the point of view of safety.
- 5 Be able to carry out pre-commissioning checks.

1.2 Electricity generation and distribution systems and industrial systems

The applicant shall have the following knowledge and skills.

- 1 Be able to perform energy, power, loss, short circuit or earth fault calculations and to carry out dimensioning of simple electricity networks for low voltage.
- 2 Know how various electricity generation and distribution systems are constructed.
- 3 Know how conducted overvoltages occur and what overvoltage protection is available.
- 4 Be familiar with the function of backup power equipment and uninterruptible power supplies and how they are connected.
- 5 Be familiar with the function of control equipment for the operation and monitoring of electric power processes.
- 6 Be familiar with the construction of contact line systems for railway, light rail, trolley bus and underground railway operation.

1.3 Electric machines

The applicant shall have the following knowledge and skills.

- 1 Know how transformers and rotating electric machines are structured and how they work.

- 2 Be able to carry out dimensioning based on the rated data of equipment in order to select appropriate transformers, electric machines and drive systems.
- 3 Have performed practical laboratory exercises involving tests on transformers and rotating electric machines in order to verify their characteristic electrical properties.

1.4 Rules and standards

The applicant shall be familiar with and be able to apply relevant rules and standards concerning low voltage installations.

Annex 2

2. Full authorisation, A

The applicant shall have performed practical laboratory exercises and shall have the following knowledge and skills.

- 1 Be able to perform energy, power, loss, short circuit or earth fault calculations and to carry out dimensioning of simple high voltage networks for general electricity distribution and industrial networks.
- 2 Have practical experience of taking earthing point measurements.
- 3 Be familiar with and be able to apply relevant rules and standards concerning high voltage installations.
- 4 Know how high voltage networks and contact line installations for railway operation are structured.
- 5 Know how to carry out pre-commissioning checks of high voltage installations.

Annex 3

3. Knowledge and skill requirements for limited authorisation (B)

The knowledge and skill requirements cover the fields of practical electrical engineering and electric power technology.

The applicant shall have performed practical laboratory exercises and shall have the following knowledge and skills.

3.1 Practical electrical engineering

The applicant shall have the following knowledge and skills.

- 1 Know how DC circuits and single-phase AC circuits function.
- 2 Know how three-phase AC circuits function and what the differences are between TN-C-, TN-S-, TT- and IT systems.
- 3 Know what function the protective earth conductor has in a final circuit.
- 4 Know what protective devices may be present in a final circuit and how they work.

3.2 Electric power technology

The applicant shall have the following knowledge and skills.

- 1 Be able to install and relocate light fittings, switches and socket outlets with associated cables in an existing final circuit.
- 2 Be able to permanently connect and disconnect electrical equipment with associated connector, including the extension and connection of cables to the connector.
- 3 Be able to read drawings and wiring diagrams.
- 4 Be able to apply relevant rules and standards concerning electrical installation work that may be carried out with the limited authorisation (B).
- 5 Be able to measure voltage, current and impedance and to perform insulation measurements.
- 6 Be able to carry out pre-commissioning checks.