



Manual

Electrical Installations under the Electrical Safety Act



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MANUAL - ELECTRICAL INSTALLATIONS UNDER THE ELECTRICAL SAFETY ACT

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Electrical Installations under the Electrical Safety Act

About the manual

The new Electrical Safety Act comes into force on 1 July 2017. It introduces a completely new system of requirements that must be met by people working with electrical installations in Sweden. The National Electrical Safety Board is the supervisory authority with regard to the obligations imposed on the various parties under the Electrical Safety Act and associated regulations. An important part of our supervisory duties is to provide information and other support to those covered by the rules. To make things easier for everyone who works with electricity, the National Electrical Safety Board has produced a manual about electrical installations under the Electrical Safety Act. The manual is aimed at the people in charge of electrical installation companies, but also people who are otherwise involved in a company's electrical installation work. Although the manual is written for those who are directly affected by the new rules on electrical installation work, it may be equally useful for anyone working with electricity such as teachers, installation owners, contractors from Sweden and abroad, etc.

English and Swedish version

The original language of the manual is Swedish. The Swedish version is more comprehensive than the English version, as the table of contents shows. References to the Swedish manual should be regarded as additional information. The information translated into English focuses on the corporate responsibility, the self-audit scheme and activity types, and will be sufficient to meet the needs of most people.

Not legally binding

The information in the manual is not legally binding. The manual does however contain information about the applicable rules, which are themselves legally binding. It should only be used by readers who wish to obtain a general understanding of the Swedish regulations concerning electrical safety. The texts are not necessarily complete or up to date. The accurate and updated versions can always be obtained in Swedish.

References to the National Electrical Safety Board's web site

The manual contains several references to the National Electrical Safety Board's web site, which is mainly in Swedish. Underlined orange text and the tabs in the side margin are clickable. More information is available in English at www.elsakerhetsverket.se/en/start-english/new-rules-from-1-july-2017

Contents

1	CHANGING FROM INDIVIDUAL QUALIFICATIONS TO CORPORATE RESPONSIBILITY – A SUMMARY OF THE REFORM	7
1.1	The new Electrical Safety Act	7
1.2	The new system governing execution of electrical installations	8
1.2.1	Self-audit scheme	9
1.2.2	Registration	9
1.2.3	Authorisation is for individuals and not for companies	10
1.2.4	The National Electrical Safety Board checks that electrical installation companies follow the rules	10
2	INTRODUCTION TO THE RULES FOR ELECTRICAL INSTALLATION COMPANIES	11
2.1	What organisations are affected by the rules for electrical installation companies?	11
2.1.1	What does an electrical installation company do?	11
2.1.2	What kinds of organisations and companies are covered?	12
2.1.3	Which company in a consortium is the electrical installation company?	12
2.1.4	Examples of different group structures	14
2.1.5	Authorisations	17
2.2	What does your company need to do before it can carry out electrical installation work?	18
2.2.1	The self-audit scheme replaces the old system	19
2.3	Getting started	19
3	CORPORATE RESPONSIBILITY	21
3.1	Point of departure for all companies – do your research	21
3.1.1	Tips on identifying which rules apply to you	22
3.2	About corporate responsibility	22
3.2.1	Criminal law, public law and civil responsibility	22
3.3	Role of management	25
3.4	Management is supported by the compliance officer	26
3.4.1	The authorised electrician's responsibility	26
3.5	Employees carrying out electrical installation work	26
3.6	Further details (in Swedish)	27
4	ELECTRICAL INSTALLATION WORK – WHAT IS IT?	28
5	REQUIREMENTS WHEN CARRYING OUT ELECTRICAL INSTALLATION WORK	29
6	THE ELECTRICAL INSTALLATION COMPANY'S RELATIONSHIP WITH THE INSTALLATION OWNER	30

7	SELF-AUDIT SCHEME FOR ELECTRICAL INSTALLATION WORK	31
7.1	What is self-audit and what is a self-audit scheme?	31
7.1.1	Self-audit under the Electrical Safety Act	31
7.1.2	How broad in scope does the self-audit scheme need to be?	31
7.1.3	How should self-audit be implemented?	32
7.1.4	Self-audit is an ongoing activity	32
7.1.5	Things to do when formulating your new self-audit scheme	32
7.2	Scope and content of the self-audit scheme	33
7.2.1	Chapter 3, § 4 (ELSÄK-FS 2017:3) - Electrical installation activity	33
7.2.2	Chapter 3, § 5 (ELSÄK-FS 2017:3) - Skill requirements and access to skills	35
7.2.3	Chapter 3, § 6 (ELSÄK-FS 2017:3) - Compliance officer	37
7.2.4	Chapter 3, § 7 (ELSÄK-FS 2017:3) - Organisation for electrical installation work and the self-audit scheme	38
7.2.5	Chapter 3, § 8 (ELSÄK-FS 2017:3) - Planning and execution of electrical installation work	39
7.2.6	Chapter 3, § 9 (ELSÄK-FS 2017:3) - Staffing	42
7.2.7	Chapter 3, § 10 (ELSÄK-FS 2017:3) - Check of completed work (planning)	43
7.2.8	Chapter 3, § 11 (ELSÄK-FS 2017:3) - Check of completed work (implementing)	43
7.2.9	Chapter 3, §§ 12–13 (ELSÄK-FS 2017:3) - Follow-up of self-audit and the self-audit scheme	44
7.3	Checklist	45
8	ACTIVITY TYPES – ANALYSE YOUR ACTIVITY	47
8.1	Background	47
8.2	Examples of activity types	48
8.3	Special activity types	49
9	THE ELECTRICAL INSTALLATION COMPANY'S INVOLVEMENT IN THE APPLICATION FOR AUTHORISATION AS AN ELECTRICIAN	50
10	REGISTERING AN ELECTRICAL INSTALLATION COMPANY WITH THE NATIONAL ELECTRICAL SAFETY BOARD	51
11	WHAT HAPPENS WHEN THE NATIONAL ELECTRICAL SAFETY BOARD PERFORMS SUPERVISION?	52
12	TERMS AND DEFINITIONS	53
13	SUMMARY	54

* This section has not been translated into English, so you are referred to the Swedish version of manual for additional information.

1 Changing from individual qualifications to corporate responsibility – a summary of the reform

1.1 THE NEW ELECTRICAL SAFETY ACT

The new Electrical Safety Act comes into force on 1 July 2017. It introduces a completely new system of requirements that must be met by people working with electrical installations in Sweden.

The new Act is supplemented by detailed provisions in ordinances and regulations from government authorities. For example the government has passed a new Electrical Safety Ordinance and the National Electrical Safety Board has issued new regulations concerning electrical installation work, electrical installation companies and authorisation.

From 1 July 2017, anyone carrying out electrical installation work in Sweden is covered by the following rules:

- The Electrical Safety Act, ESA (*elsäkerhetslagen*)
- The Electrical Safety Ordinance (*elsäkerhetsförordningen*)
- The National Electrical Safety Board's regulations and general advice (2017:2) on electrical installation work (*Elsäkerhetsverkets föreskrifter och allmänna råd (2017:2) om elinstallationsarbete*)
- The National Electrical Safety Board's regulations (2017:3) on electrical installation companies and on the execution of electrical installation work (*Elsäkerhetsverkets föreskrifter (2017:3) om elinstallationsföretag och om utförande av elinstallationsarbete*)
- The National Electrical Safety Board's regulations (2017:4) on authorisation as an electrician (*Elsäkerhetsverkets föreskrifter (2017:4) om auktorisation som elinstallatör*)

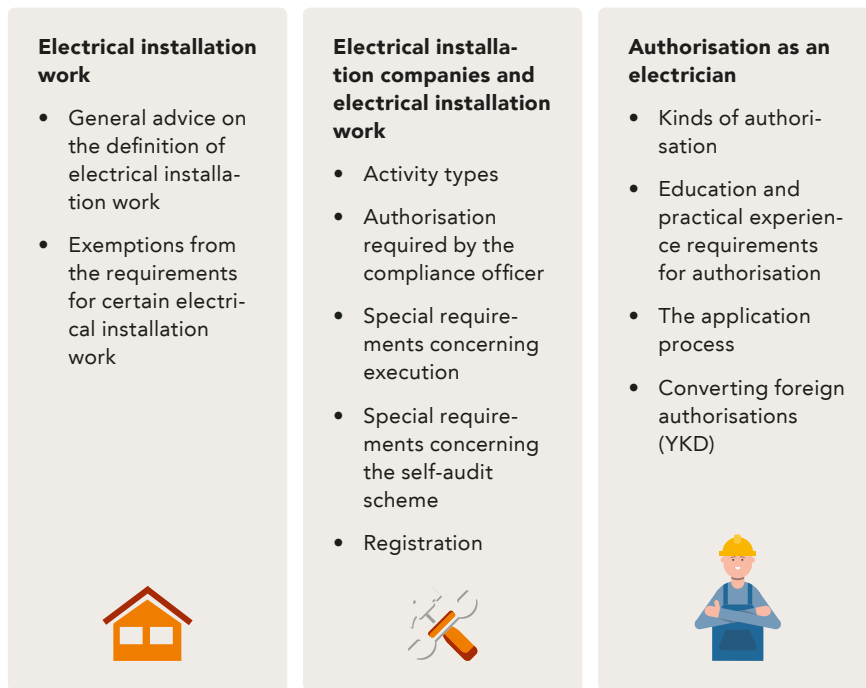


Figure 1. Content of the National Electrical Safety Board's regulations.

1.2 THE NEW SYSTEM GOVERNING EXECUTION OF ELECTRICAL INSTALLATIONS

Under the new system, the companies carrying out electrical installation

- are responsible for execution
- must monitor their electrical installation activity in a self-audit scheme.

The existing system, in which authorised electricians supervise electricians and thereby ensure that the electrical installation is executed correctly, is coming to an end.

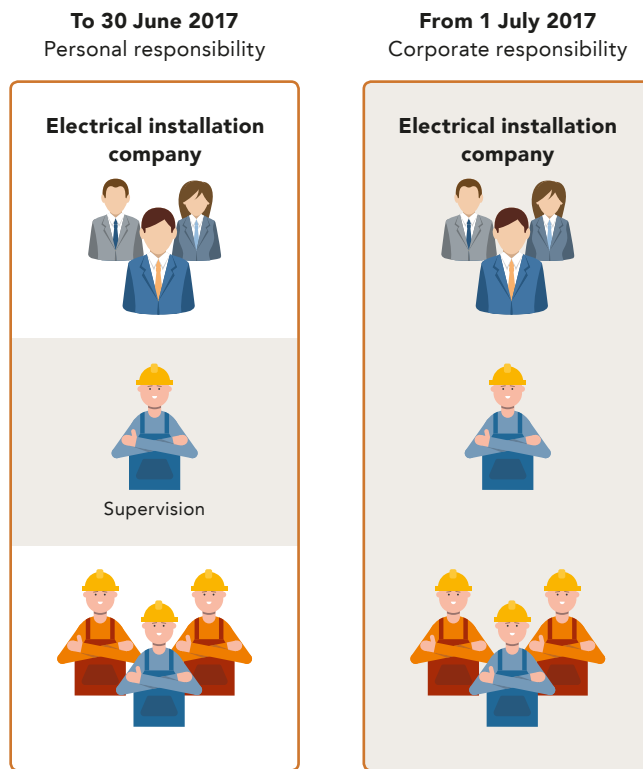


Figure 2. From personal responsibility to corporate responsibility

The new Electrical Safety Act contain requirements concerning how electrical installation work must be executed, the skills which must exist within the company carrying out the installation, how the skills of the people carrying out the work must be guaranteed, and requirements concerning the self-audit scheme for the activity. It is the responsibility of the electrical installation company to ensure that these requirements are met.

1.2.1 Self-audit scheme

The self-audit scheme is all the measures (descriptions, routines, etc.) put in place by the electrical installation company in order to guarantee that the electrical installation work is carried out in accordance with the requirements of the Electrical Safety Act and the regulations of the National Electrical Safety Board. The self-audit scheme is described in detail in [section 7](#).

1.2.2 Registration

Once the new rules come into force on 1 July 2017, any company carrying out electrical installation work on an installation which is not its own must register with the National Electrical Safety Board before starting the work. Installation owners and buyers of electrical installation services are able to consult this register to check on a company they intend to use. Electrical installation companies which only carry out electrical installation work on their own installations are not required to register.

When you register, you state what kinds of electrical installation work your electrical installation company carries out – these are called activity types. You

can either register for all kinds of electrical installation work or just for certain kinds. Activity types are described in more detail in [section 8](#).

When you register, you must name a compliance officer. This is an authorised electrician tasked with ensuring that your company follows the rules in §§ 23-27 of the Electrical Safety Act. If your company has more than one compliance officer, your self-audit scheme must specify which one of them is named in the registration.

The easiest way to register is using the e-service on the National Electrical Safety Board's web site: www.elsakerhetsverket.se/en/registration. Click "English" in the top right of the e-service window for an English-language version. If you are unable to use the e-service, you can contact the National Electrical Safety Board for more information.

1.2.3 Authorisation is for individuals and not for companies

Anyone carrying out electrical installation work must either be authorised as an electrician or be included in the company's self-audit scheme. This means that only authorised electricians are allowed to carry out electrical installation work privately (in other words not on behalf of an electrical installation company). When an authorised electrician works under a self-audit scheme, the self-audit scheme determines what kind of work that individual is allowed to carry out on behalf of the company.

To obtain authorisation as an electrician, you must meet the education and experience requirements and you must be otherwise suitable. Applications for authorisation are considered by the National Electrical Safety Board.

Authorisation is described in more detail on the National Electrical Safety Board's web site. Application: www.elsakerhetsverket.se/en/authorisation

Your authorisation as an electrician may be revoked if you carry out electrical installation work incorrectly or if your conduct is otherwise obviously inappropriate.

1.2.4 The National Electrical Safety Board checks that electrical installation companies follow the rules

The National Electrical Safety Board is the government body which checks that electrical installation companies follow the applicable rules. An important part of its job is to give electrical installation companies the information and support they need, for example by publishing brochures and other resources. You can contact the National Electrical Safety Board if you have any questions about the rules affecting you.

If individuals or organisations are found not to be following the rules, the National Electrical Safety Board may take action or in serious cases ban the company from providing electrical installation services.

2 Introduction to the rules for electrical installation companies

2.1 WHAT ORGANISATIONS ARE AFFECTED BY THE RULES FOR ELECTRICAL INSTALLATION COMPANIES?

The new rules for electrical installation companies cover all companies and other organisations carrying out electrical installation work for business purposes.

Electrical installation work is defined in § 4 of the Electrical Safety Act. Work is considered to be electrical installation work if you

- implement an electrical installation
- modify an electrical installation
- repair an electrical installation
- permanently connect electrical equipment to an electrical installation
- disconnect electrical equipment from an electrical installation to which the equipment is permanently attached.

Electrical installation work is therefore all work that is carried out on an electrical installation, from generation up to and including the socket, and any permanent connection and disconnection of electrical equipment.

There are a small number of exemptions from the requirements governing self-audit schemes and authorised electricians. They are described in more detail in

- [Chapter 3 of ELSÄK-FS 2017:2](#)
- [Chapter 4, § 8 of ELSÄK-FS 2017:3](#)

2.1.1 What does an electrical installation company do?

Electrical installation companies can handle all electrical installation work or just focus on certain kinds of work, or they can do pieces of electrical installation work as part of a wider project. So it does not matter what your main line of business is – if you ever carry out electrical installation work, your company is classed as an electrical installation company.

Companies in a wide range of sectors and lines of business can therefore carry out electrical installations.

Table 2. Examples of sectors where electrical installation work is carried out.

Sector or line of business	Common activities
HVAC	Replacing or moving motors, actuators, thermostats, sensors, switches, disconnectors, etc.
White goods	Wiring in washing machines, cookers, ovens, hobs, etc.
Alarms and broadband	Installing new sockets for emergency control centres, broadband routers and other similar equipment.
Lifts and escalators	Installing or replacing motors, control equipment, shaft and in-car lighting, etc. from the cabinet.
Industry	Installing, modifying and repairing industrial power and lighting installations, processing installations and electricity distribution and switchgear installations. The systems can be low voltage or high voltage.
Property management	Technical operation and maintenance, for example replacing and repairing components in electrical cabinets and distribution boxes. Changing or moving light fittings, sockets, switches, etc.
Electric power network	Includes grid owners and their contractors. For example creating or modifying overhead and underground systems, switchgear and transformer stations. Connecting subscribers, installing meters, repairing, and correcting faults in low voltage and high voltage installations.
Electricity generation	Traditional hydroelectric, nuclear and wind power installations. Microgeneration, solar cells, diesel generators, etc. For example hydroelectric power plants with associated transformer and switchgear installations.
Other general and public electrical installation	Residential buildings, hotels, schools, hospitals, care homes, offices, shops, community centres, sporting and special events facilities. For example creating or modifying power and lighting installations, and handling electricity distribution, cable routing, etc. in these installations.

2.1.2 What kinds of organisations and companies are covered?

The legal form you operate under is irrelevant. An electrical installation company can be run as a limited company, a trading partnership, a sole trader, an economic association, etc. Public bodies, local authorities and county councils, too, can be electrical installation companies. And it does not matter which country the company comes from. All electrical installation companies carrying out electrical installation work in Sweden are covered by the new rules.

2.1.3 Which company in a consortium is the electrical installation company?

Your company is only an electrical installation company if it actually carries out electrical installation work. However, your company can sign a contract with an installation owner for electrical installation services without actually carrying out the electrical installation work itself. In this situation, your company is not an electrical installation company.

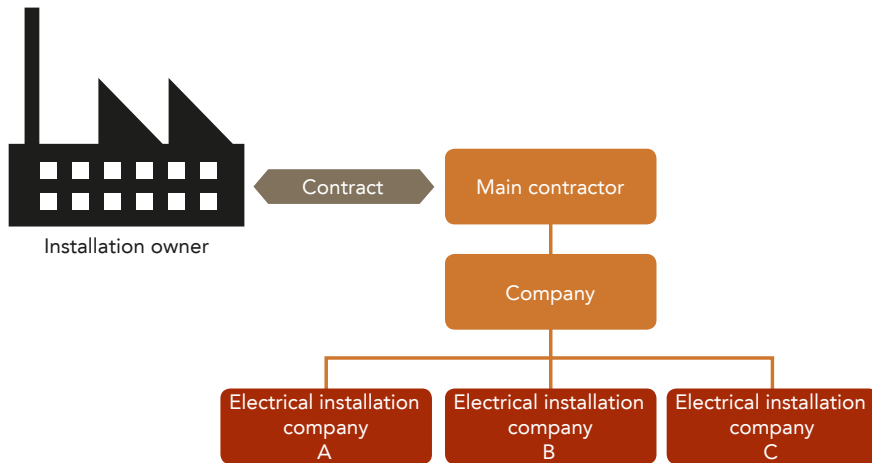


Figure 3. Consortium and contractual relationships.

If the main contractor in the diagram above signs a contract with the installation owner for electrical installation services and then uses subcontractors to carry out the work, only the companies actually carrying out electrical installation work are electrical installation companies (in this example electrical installation companies A, B and C).

The main contractor and the company are not electrical installation companies, provided they do not actually carry out electrical installation work.

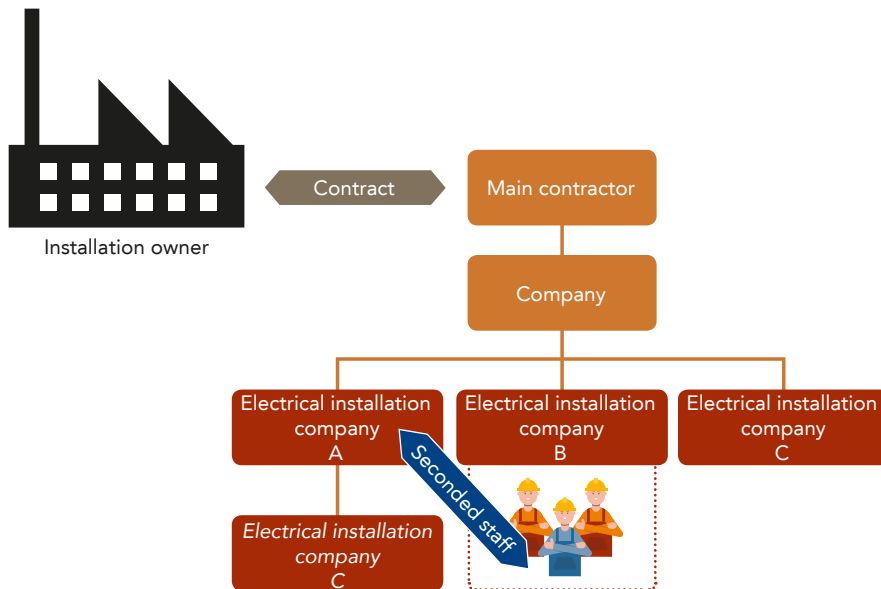




Figure 4. Which company's self-audit scheme applies to the work?

If electrical installation company A uses staff seconded from electrical installation company B, they will be covered by electrical installation company A's self-audit scheme. If electrical installation company A instead purchases electrical installation services from electrical installation company C, electrical installation company C is responsible for the work carried out, which will be covered by C's self-audit scheme.

2.1.4 Examples of different group structures

This section contains examples of possible corporate structures, with symbols indicating which companies are responsible for meeting the requirements of the Electrical Safety Act. Note that the subsidiaries in the examples are wholly owned limited companies. Some group-like structures contain organisations which do not have their own company registration number. The examples do not apply to such structures.

	
This symbol indicates which organisation requires a self-audit scheme and a compliance officer.	This symbol indicates whether the company must register with the National Electrical Safety Board.

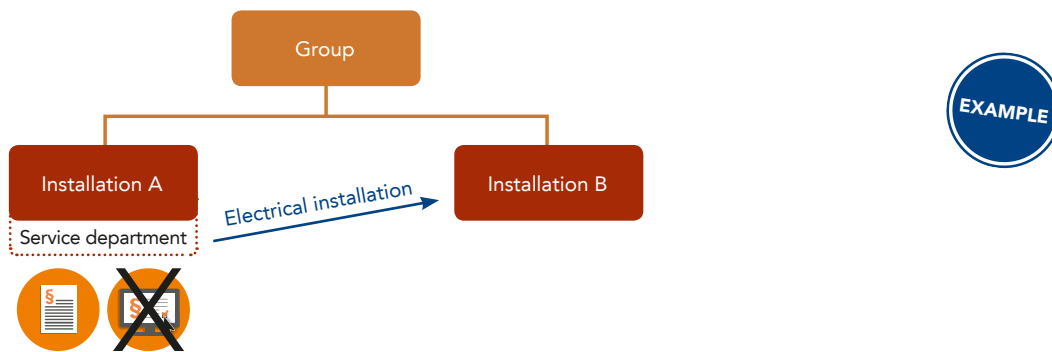


Figure 5. A company carries out electrical installation work on its sister company's installation.

The group has two wholly owned subsidiaries which each have their own electrical installation. One of the subsidiaries has a service department which carries out electrical installation work on installation A as well as installation B. So within the group, the subsidiary with the service department is an electrical installation company and must meet the relevant requirements.

The company does not need to register with the National Electrical Safety Board because the work is classed as taking place on an installation which is the company's own.

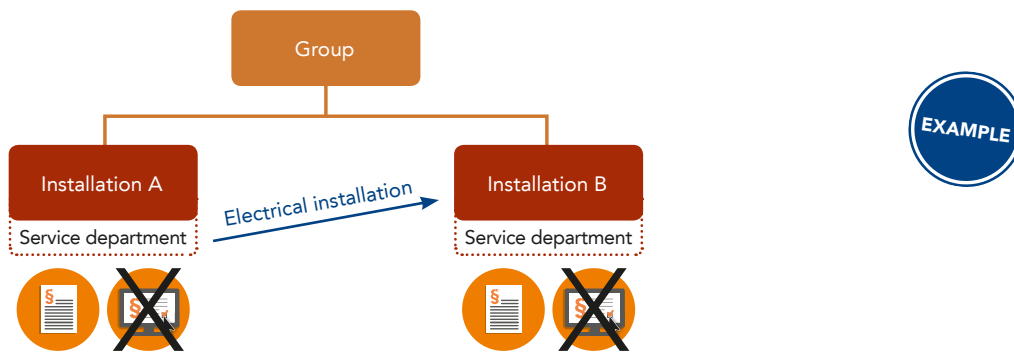


Figure 6. A company carries out electrical installation work on its sister company's installation.

The group has two wholly owned subsidiaries which each have their own electrical installation. Each subsidiary has a service department carrying out electrical installation work on its own installation. One of the subsidiaries also carries out electrical installation work on the sister company's installation. Within the group, both subsidiaries are electrical installation companies and must meet the relevant requirements.

Neither company needs to register with the National Electrical Safety Board because the work is classed as taking place on an installation which is the company's own.

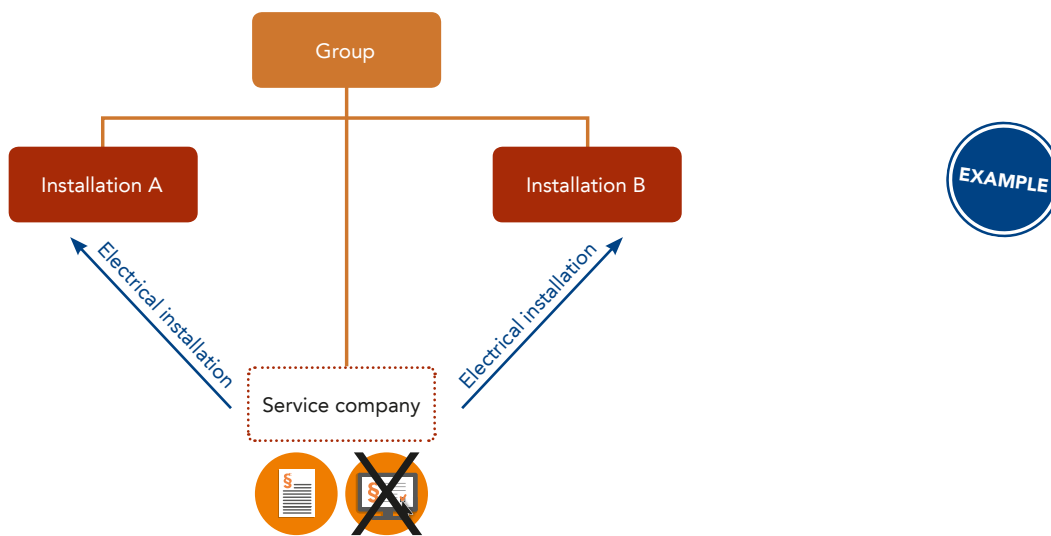


Figure 7. Group service company.

The group has three wholly owned subsidiaries. Two of the companies each have their own electrical installation (installation A and installation B). The third subsidiary is a service company which carries out electrical installation work on installation A as well as installation B. So within the group, the service company is an electrical installation company and must meet the relevant requirements.

The service company does not need to register with the National Electrical Safety Board because the work is classed as taking place on an installation which is the company's own.

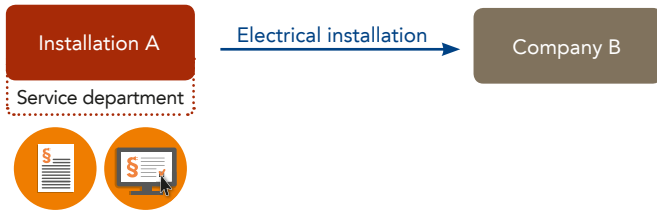


Figure 8. A company carries out electrical installation work on its own installation and on installations which are not its own.

A company is an installation owner and carries out electrical installation work on its own installation (installation A) and on installations which are not its own for company B. The company which owns installation A is an electrical installation company and must meet the relevant requirements.

The company must be registered with the National Electrical Safety Board.

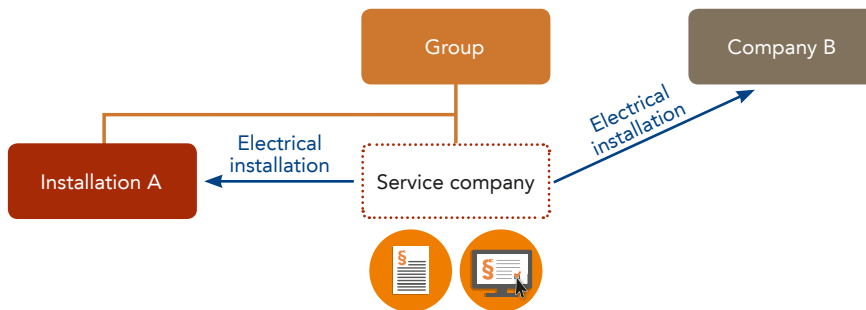


Figure 9. Group service company which also carries out electrical installation work in non-group companies

The group has two wholly owned subsidiaries. One of the companies has its own electrical installation (installation A). The other subsidiary is a service company which carries out electrical installation work on installation A. The service company also carries out electrical installation work for other non-group organisations. The service company is an electrical installation company and must meet the relevant requirements.

The company must be registered with the National Electrical Safety Board.

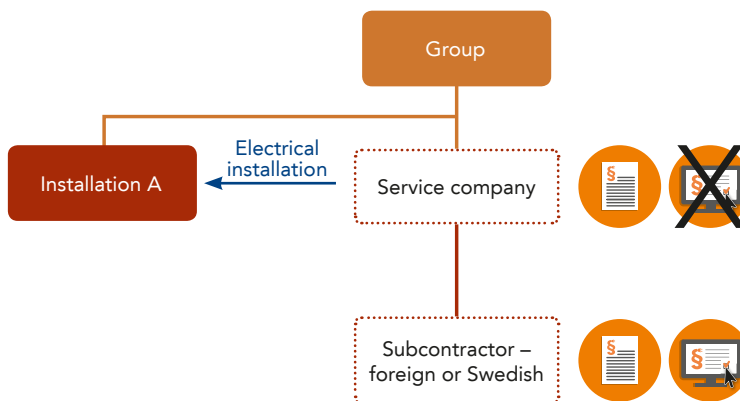


Figure 10. Group service company which also uses a subcontractor.

The group has two wholly owned subsidiaries. One of the companies has its own electrical installation (installation A). The second subsidiary is a service company which carries out electrical installation work on installation A. The service company also uses a subcontractor to carry out electrical installation work on installation A. The service company is an electrical installation company and must meet the relevant requirements. So is the subcontractor, regardless of whether it is a foreign or a Swedish company.

The company which is a subcontractor must be registered with the National Electrical Safety Board regardless of whether it is a foreign or a Swedish company. The service company does not need to register with the National Electrical Safety Board because the work it carries out is classed as taking place on an installation which is its own.

2.1.5 Authorisations

An authorised electrician requires different authorisations depending on the kind of work carried out by an electrical installation company. The new Electrical Safety Act does not go into detail about the authorisation required by an authorised electrician – instead, this is covered by the National Electrical Safety Board’s regulations. To make it easier for companies to check if they have the right authorisation, the National Electrical Safety Board has organised electrical installation work into a number of activity types.

That means if your company only carries out certain types of electrical installation work, you can state this in your self-audit scheme. Your company’s compliance officer would then only need an authorisation corresponding to that particular type of work.

The diagram below shows the activity types defined by the National Electrical Safety Board.

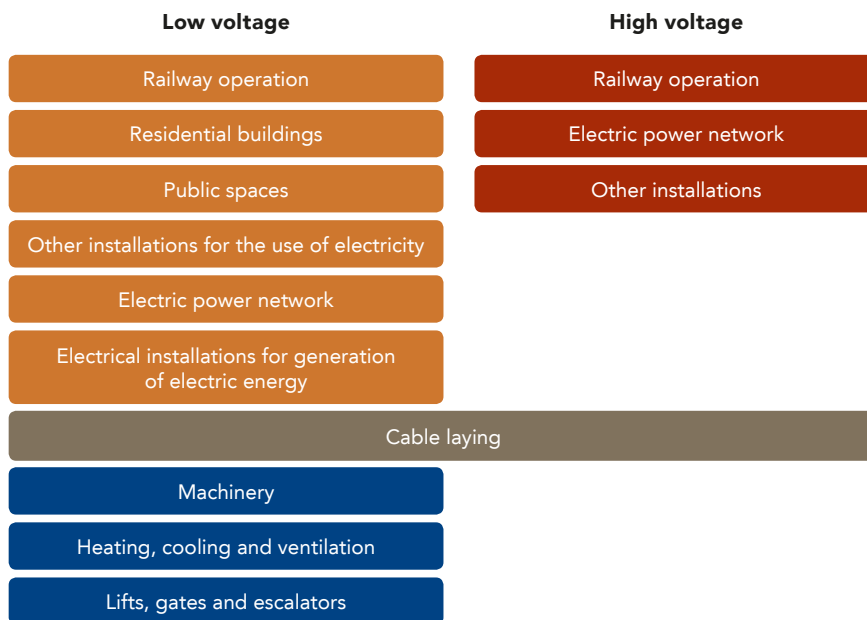


Figure 11. Activity types

If your company works in the high voltage category, you need an authorised electrician with full authorisation (A) acting as compliance officer.

If your company works in the low voltage category, you need an authorised electrician with either full authorisation (A) or authorisation for low voltage (AL) acting as compliance officer.

If your company only carries out certain limited types of low voltage work, such as connecting and disconnecting permanently attached electrical equipment which consumes power, you need an authorised electrician with either full authorisation (A), authorisation for low voltage (AL) or limited authorisation (B) acting as compliance officer.

If your company only works in the Cable laying activity type, there is no need for a compliance officer. But you still need to operate a self-audit scheme and register with the National Electrical Safety Board if you work on an installation which is not your own.

If you are not an electrical installation company you are not permitted to carry out electrical installation work for business purposes.

If you cannot meet the requirements you must not carry out electrical installation work.

2.2 WHAT DOES YOUR COMPANY NEED TO DO BEFORE IT CAN CARRY OUT ELECTRICAL INSTALLATION WORK?

Under the new rules, companies and organisations carrying out electrical installation work for business purposes are called electrical installation companies. This means that if you work with electrical installations, you are also covered by the requirements aimed at electrical installation companies in the new Electrical Safety Act.

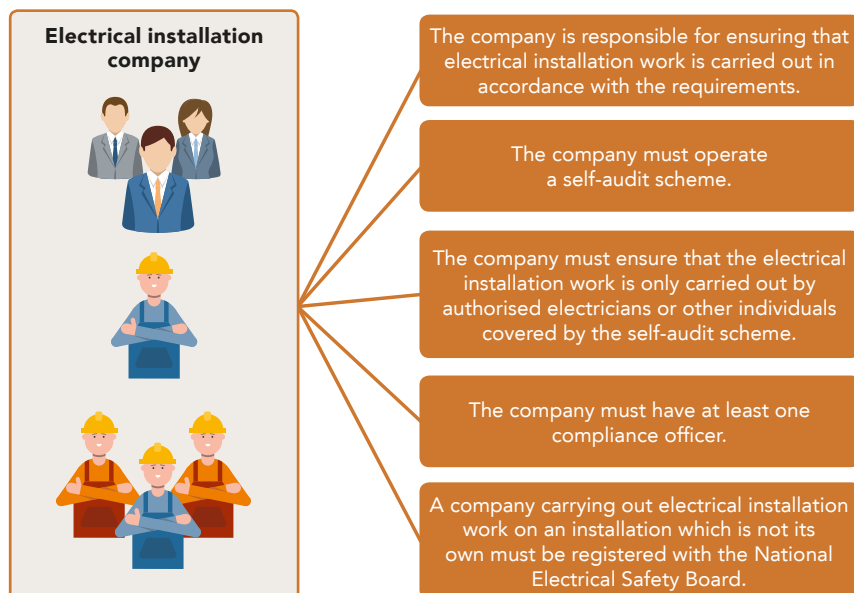


Figure 12. Obligations of the electrical installation company.

As a result, if you are an electrical installation company, you are under a completely new responsibility to ensure that

- the electrical installation work is carried out in accordance with the relevant rules and
- the electrical installation work is only carried out by an authorised electrician or someone else covered by the company's self-audit scheme.

As part of the company's responsibility, there are new requirements which you must meet. These are

- to have at least one compliance officer
- to operate a self-audit scheme
- to register the company with the National Electrical Safety Board if you work on an installation which is not your own.

2.2.1 The self-audit scheme replaces the old system

The self-audit scheme replaces the old system involving supervision by authorised electricians. It is also intended as a system your company can use to verify internally that the electrical installation work you carry out meets the relevant rules and regulations.

The self-audit scheme is your company's internal system guaranteeing that its activity is managed and carried out correctly and by staff with the right skills. You should broaden the self-audits to include organisational and administrative activities and routines as well as technical issues.

2.3 GETTING STARTED

If you have an electrical installation company or you act as a compliance officer and want to start formulating a self-audit scheme, make sure you leave yourself plenty of time.

- 1 Find out about the rules and pass on the information**
 - Get to know what the new rules involve.
 - Train the affected personnel and all company management.
- 2 Analyse your activity**
 - Find out what kind of electrical installation work your organisation carries out or plans to carry out.
 - Find out if you carry out or plan to carry out any work on installations which are not your own.
- 3 Prepare the self-audit scheme**
 - Start thinking about the design of your organisation's self-audit scheme
 - How broad in scope does your self-audit scheme need to be based on the electrical installation work you carry out? See step 2.

- Do you have an existing self-audit scheme or quality assurance scheme you can use as a point of departure?

4 **Appoint one or more compliance officers**

- Think about the individual(s) you plan to appoint as compliance officers.
 - If you need to recruit new personnel you should get the process started well in advance

5 **The company must be registered by 1 July 2017**

- If your company plans to work on installations which are not your own, register your company before starting the electrical installation work.

6 **Your self-audit scheme must be up and running by 1 July 2017**

- If you register before 1 July 2017, the self-audit scheme does not need to be up and running until 1 July 2017.

3 Corporate responsibility

3.1 POINT OF DEPARTURE FOR ALL COMPANIES – DO YOUR RESEARCH

All companies (in this manual companies are taken to mean juridical persons of all kinds) must be familiar with the rules applicable to them and must ensure that they are followed. This is only possible if you identify the current rules and also regularly check if the rules have changed so you can make the necessary adjustments.

For electrical installation companies, the rules specific to electrical safety are contained in the National Electrical Safety Board’s web site. The web site includes lots of other information, for example for companies and individuals who are installation owners.

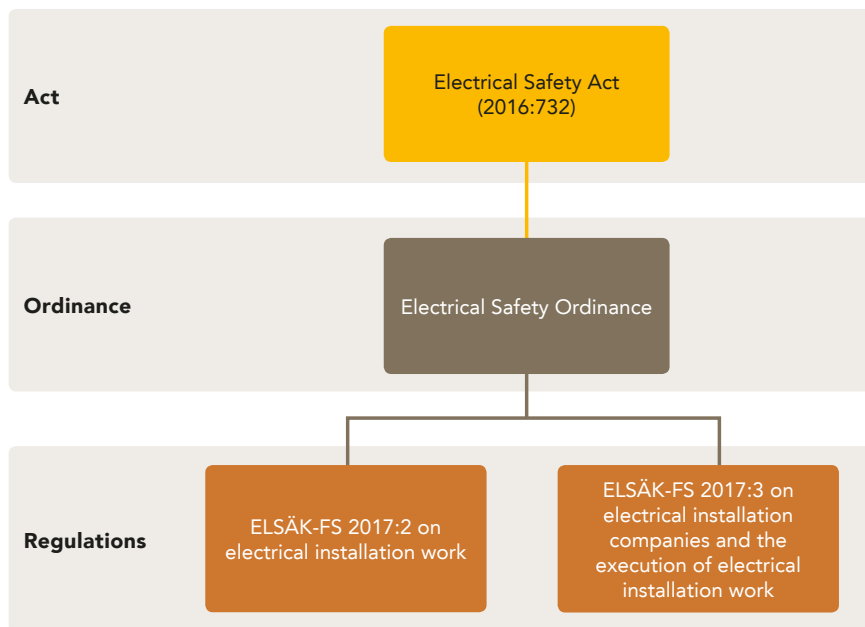


Figure 13. Summary of rules governing electrical installation companies.

Support is also available to help you follow the rules. For example the National Electrical Safety Board has produced documentation you can use as a training resource to explain which rules are applicable to your company. However you opted to organise your activity, it is a good idea to arrange regular training about the rules.

- Step 1:** Research the rules
- Step 2:** Keep track of changes
- Step 3:** Decide how you intend to stay up to date

You can also subscribe to news on the National Electrical Safety Board’s web site. That makes it easier to keep track of changes to the rules.

3.1.1 Tips on identifying which rules apply to you

- Work through the rules published by the National Electrical Safety Board and make a list of the ones that are relevant to your activity.
- Subscribe to the Board’s newsletter and other news so you are alerted if the rules change.
- Arrange regular training sessions for your employees about which rules apply and what they involve. You can use the National Electrical Safety Board’s training resources or produce your own. The more people who are familiar with the rules and monitor them, the easier it is to detect changes.
- Organise a board meeting, management group meeting or similar forum once a year, where management can meet compliance officers to verify that the company is following the rules
 - Discuss which rules apply to the company.
 - Discuss any changes which affect the company.

3.2 ABOUT CORPORATE RESPONSIBILITY

This section describes exactly what is meant by corporate responsibility. In fact, there are several different kinds of responsibilities which can be summarised as follows: the company must ensure that its activity complies with the relevant requirements.

3.2.1 Criminal law, public law and civil responsibility

In this section, we explain the different kinds of responsibility applicable to an electrical installation company, for example, and we detail the differences between them.



Figure 14. Different kinds of responsibility.

Supervisory obligations – a kind of public law responsibility
As with all the rules governing responsibility, the arrangements concerning supervision are designed to influence the behaviour of companies and individuals. The precise arrangements for supervision are always set out in legislation. The legislation governing supervision lays down

- what is covered by supervision (the 'supervision object')
- who is responsible for the supervision object (the 'object administrator')
- what requirements are applicable to the supervision object
- which public authority performs the supervision
- what powers the supervisory authority has.

The owner of an electrical installation company is referred to as the object administrator for the electrical installation activity carried out by the company. The activity itself is referred to as the supervision object. This means that it is up to the company to ensure that it follows the rules in the Electrical Safety Act in its activity. The National Electrical Safety Board is the supervisory authority for work involving electrical installations. In other words, it is the National Electrical Safety Board's job to check that the electrical installation companies and the authorised electricians follow the rules. The company is the National Electrical Safety Board's point of contact for supervision, and that is where its decisions (rulings and prohibitions) are sent.

If you work in an electrical installation company there are many other rules you need to take into account apart from the Electrical Safety Act. And there are other supervisory authorities making sure you follow their particular rules on the work environment, the environment, fire protection, etc.

Supervision goes beyond the obligations set out in the Electrical Safety Act. The Electrical Safety Ordinance and regulatory provisions also fall within the supervision remit of the National Electrical Safety Board. If the National Electrical Safety Board finds any shortcomings, it has the power to order the company to take action or in the most serious cases to cease the activity.

All electrical installation companies are subject to supervision, and the process gives them rights as well as obligations.

Fines or imprisonment for certain breaches – criminal responsibility
Corporate responsibility also means ensuring that the company does not break the law. If the National Electrical Safety Board or any other agency finds shortcomings in the way the company monitors and follows the rules in its activity, it can hold the company, and individuals within the company, to account under criminal law.

Corporate criminal responsibility rests with the person or persons best placed to ensure compliance by managing, organising and monitoring the company's activity.

Corporate responsibility covers all breaches within the company regardless of who committed them. Unlike individual responsibility, where people are generally responsible for their own actions, corporate responsibility extends to actions by others.

[§§ 23–27 of ESA](#)

[§ 36 of ESA](#)

The company itself is a juridical person which can be sentenced to criminal punishment. However, when a crime is committed in a company, for example if the company carries out electrical installation work without operating a self-audit scheme, a natural person is always held to account for the crime. There are always one or more individuals who represent the company and who are therefore responsible for ensuring that no one in the company commits a crime. The particular individuals held to account in this way depend on the situation. Criminal responsibility normally rests with the board or company management, but it could also be the person in the company who actually carried out the actions that broke the law. Exactly how the individuals are held to account depends on how the rules are framed and on the particular circumstances.

[§§ 48–49 of ESA](#)

Corporate fines and sanction fees

Corporate fines and sanction fees are not criminal punishments – they are legal consequences of a different kind aimed specifically at companies. Corporate fines and sanction fees are economic sanctions that can be imposed on the company if a crime is committed in the company. They are therefore applied to juridical persons.

The Electrical Safety Act contains no provisions on sanction fees. Corporate fines, on the other hand, are defined.

[Chapter 36, § 7 of
The Swedish Penal Code](#)

If a crime is committed in a company, the company as well as the person or persons with criminal responsibility will be given a criminal punishment, for example a corporate fine for the company and fines or imprisonment for those with criminal responsibility in the company.

Tort liability and other claims between parties – civil responsibility

The main component of civil responsibility is the company's obligations under contracts it has entered into with others. The content of the contract determines the company's obligations as well as the potential consequences of any breach. Standard consequences of a breach of contract include termination, price reductions and tort liability, but they obviously depend on the details and the nature of the contract. There is also legislation which governs or supplements the content of contracts, for example:

- [Contracts Act \(1915:218\)](#)
- [Sale of Goods Act \(1990:931\)](#)
- [Consumer Sales Act \(1990:932\)](#)
- [Consumer Services Act \(1985:716\)](#)

If you carry out electrical installation work for private individuals you are subject to special rules governing the relationship between companies and consumers.

To find out more, read the Swedish Consumer Agency's leaflet entitled [Tips for tradesmen](#) (in Swedish)

There is a special web site with general information for private individuals who use tradesmen, see www.omboende.se/sv/Bygga1/Anlita-hantverkare-/Hantverkarens-skyldigheter/ (in Swedish)

The web site has more details and model contracts.

Civil law also contains non-contractual tort liability provisions. Non-contractual means there is liability to pay damages even when there is no contract between the person causing the loss or damage and the person affected. Put simply, the tort liability rules mean that all natural and juridical persons have a general duty of care. If you do not exercise a duty of care and cause injury to a person or damage to someone's property as a result, you become liable to pay compensation.

There are a number of general and specific provisions concerning non-contractual tort liability, for example:

- Chapters 2–3 of the Tort Liability Act ([1972:207](#))
- §§ 28–32 of the Electrical Safety Act ([2016:732](#))

How the different kinds of responsibility affect each other

All kinds of responsibility are applicable alongside and independently of each other. For example, your company could receive a ruling from the National Electrical Safety Board just as a prosecutor decides to press charges in respect of the same shortcomings. Individuals are also at liberty to claim damages, for example, regardless of whether a public authority has intervened and found shortcomings.

Nevertheless, certain provisions do affect each other. For example, you cannot be sentenced to both a criminal punishment (straff) and a conditional financial penalty (vite).

It is important to clearly distinguish between the various kinds of responsibility as they differ in terms of

- who is responsible (everyone, the electrical installation company, the installation owner or someone else)
- what the obligations are
- what happens if the obligations are not met
- whether the consequences are only triggered if there is intent or carelessness

3.3 ROLE OF MANAGEMENT

Whatever the legal form under which the activity is run, it is up to management to ensure that the company follows the rules. After all, management is usually best placed to ensure compliance by managing, organising and monitoring the activity. That makes corporate responsibility crucial when an electrical installation company carries out electrical installation work.

Management must be aware of the rules and must be familiar with the company's own activity. All electrical installation companies must have at least one compliance officer, giving all company managers access to the expertise necessary to understand the rules and the company's activity.

Once management is sufficiently familiar with the rules and the company's own activity, it must take steps to ensure that the company follows the applicable rules. For example if the company lacks the skills or resources to set up and operate a self-audit scheme, management is responsible for obtaining the necessary skills or resources.

[§ 51 of ESA](#)

When tasks are assigned, management must also ensure that it is possible to perform each task. That means giving employees the powers and resources they need.

3.4 MANAGEMENT IS SUPPORTED BY THE COMPLIANCE OFFICER

Every electrical installation company must have an authorised electrician acting as a compliance officer, and this requirement exists for the benefit of the company. If a company has no authorised electrician or if he does not do his job properly, it is up to the company to put things right. The authorised electrician is there to support management, but ultimately it is up to management to ensure that the rules are actually followed.

[§ 23 of ESA](#)

Examples of input from the authorised electrician.

- Developing proposals for a self-audit scheme
- Managing the work to create the self-audit scheme
- Following up and updating
- Coordinating the organisation running the company's self-audit scheme
- Providing training
- Regular meetings with management

If you are unsure of the input you are expected to provide, contact your employer or customer.

3.4.1 The authorised electrician's responsibility

All authorised electricians are subject to the general rules governing the responsibility of employees in general, for example in the contract of employment, tort liability rules and general and special criminal law.

Your authorisation as an electrician may be revoked if you carry out electrical installation work incorrectly or if your conduct is otherwise clearly inappropriate. An example of inappropriate conduct is if an authorised electrician helps an electrical installation company to make a false registration with the National Electrical Safety Board, for example by approving the registration without being appointed as the company's compliance officer.

[§ 44 of ESA](#)

3.5 EMPLOYEES CARRYING OUT ELECTRICAL INSTALLATION WORK

You are prohibited from carrying out any electrical installation work unless you either have the right authorisation or are covered by the company's self-audit scheme. If you break this rule you are committing a criminal offence. So it is essential for all employees to know exactly what work they are allowed to carry out. If you are unsure, you should not carry out any electrical installation work as you may be committing a crime.

[§ 27 of ESA](#)

[§ 48 of ESA](#)

There are general rules governing the responsibility of employees in general. Examples include the contract of employment, tort liability rules and general and special criminal law.

3.6 FURTHER DETAILS (IN SWEDISH)

- [The Swedish Environmental Protection Agency's manual on self-audits under the Environmental Code](#)
- [Government bill 2005/06:59 on corporate fines](#)
- [Government report 2009/10:79 Clear, legally certain and effective supervision](#)
- [The Swedish Agency for Public Management's study on government supervision](#)
- [The Swedish Prosecution Authority's memo 2006:19 on corporate fines](#)
- [The Swedish Work Environment Authority's information on responsibility for the work environment and criminal responsibility](#)

4 Electrical installation work – what is it?

This section has not been translated into English, so you are referred to the Swedish version of manual for additional information.

5 Requirements when carrying out electrical installation work

This section has not been translated into English, so you are referred to the Swedish version of manual for additional information.

6 The electrical installation company's relationship with the installation owner

This section has not been translated into English, so you are referred to the Swedish version of manual for additional information.

7 Self-audit scheme for electrical installation work

7.1 WHAT IS SELF-AUDIT AND WHAT IS A SELF-AUDIT SCHEME?

The self-audit requirement means that the electrical installation company is given the responsibility of verifying the compliance of its own activity. The company must have a self-audit scheme, meaning that the routines and processes needed for the self-audits must be documented, implemented and followed up systematically and regularly.

The advantage of formulating general requirements for self-audits and self-audit schemes, rather than detailed requirements in a particular area, is that the organisations can adapt the self-audits according to their activity. That way, sole traders do not have the unfair burden of having to meet the same requirements as large companies with complex activities.

7.1.1 Self-audit under the Electrical Safety Act

Companies and organisations are subject to self-audit requirements and self-audit schemes in other contexts too. There are also some voluntary systems which are also called self-audit. In this manual, however, we specifically mean the self-audit and the self-audit scheme provided for in the Electrical Safety Act and associated regulations, primarily [ELSÄK-FS 2017:3](#).

Of course, the tools, routines and processes used in other self-audit schemes or quality assurance systems may also be used to help meet the self-audit requirements of the Electrical Safety Act. The important thing is to show that you actually meet all the requirements the law places on you, or that you make any necessary changes.

7.1.2 How broad in scope does the self-audit scheme need to be?

The scope and detail of the self-audit scheme depends on the size of the company and the kind of work you carry out. If you already have a quality assurance or management system you can build on it and coordinate the self-audit scheme with it if it is practical to do so. It is essential, though, for the self-audit scheme to accurately and genuinely describe the activities of the company and to verify that you comply with the Electrical Safety Act and the relevant detailed regulations.

If yours is a small activity, the self-audit scheme can be kept simple and documented with just a small number of documents.

You are creating the self-audit scheme for yourself, not for the National Electrical Safety Board! Try to make the routines as accessible and comprehensible as possible for your staff. If you can, keep the documentation practical and useful, and do not make it more wide-ranging and detailed – and therefore difficult to update – than it needs to be.

7.1.3 How should self-audit be implemented?

If you have an electrical installation company, you must therefore operate a systematic and continuous self-audit scheme that ensures that you follow the rules for electrical installation work. If you are inspected as part of the supervision framework, you will also need to show the National Electrical Safety Board how you use the self-audit scheme.

After establishing that your company is an electrical installation company, start formulating the self-audit scheme by identifying the requirements that are applicable to your company's activity and keeping this information updated. You then need to analyse which parts of your activity are affected by the rules. You are now ready to start developing routines, systems and other methods to ensure that you carry out electrical installation work in accordance with the relevant rules.

7.1.4 Self-audit is an ongoing activity

You must regularly monitor, follow up and develop your self-audit scheme. It is up to you to decide the frequency of follow-ups depending on your particular needs. Companies with a large activity and complex self-audit arrangements may need more frequent follow-ups than less complex ones.

Regularly and systematically review your routines to identify problems and decide whether the company's self-audit scheme is working as well as possible.

It is up to you to formulate the self-audit scheme and introduce routines, etc. into your activity. They must be designed to provide certainty that you are compliant with the Electrical Safety Act.

The routines must be designed so they fit into your day-to-day activities. You should therefore regard them as an ongoing, continuous process, requiring adjustment and improvement over time.

The self-audit scheme must also be included in your regular inspection to be carried out at least once a year.

[Chapter 3, § 13 of ELSÄK-FS 2017:3](#)

7.1.5 Things to do when formulating your new self-audit scheme

- Establish what electrical installation work you will carry out.
- Find out all about the rules in the Electrical Safety Act and other regulations.
- Create a self-audit scheme in the form of one or more documents or systems in which you show how you are monitoring and following the rules.
- Perform continuous follow-ups.
- Verify the self-audit scheme at least once a year

7.2 SCOPE AND CONTENT OF THE SELF-AUDIT SCHEME

This section contains information you may find useful as you embark upon formulating your company's self-audit scheme. We go through the self-audit scheme requirements of the National Electrical Safety Board's regulations, paragraph by paragraph, adding:

- Notes on the regulation – information to clarify the intended purpose and application of the regulation.
- Tips and examples showing how to apply the regulation – optional suggestions to support people developing the self-audit scheme. These are not recommendations, simply one of a number of tools.

7.2.1 Chapter 3, § 4 (ELSÄK-FS 2017:3) - Electrical installation activity

[Chapter 3, § 4 of ELSÄK-FS 2017:3](#)

The self-audit scheme shall contain a description of those parts of the electrical installation company's activity in which electrical installation work is carried out.

The description shall include the following at least

- *details of the activity types involved in the electrical installation work,*
- *the nature of the electrical installation work the company intends to carry out in the selected activity types, and*
- *details of whether electrical installation work will be carried out on installations which are not the company's own and thus requires registration under Chapter 5 of ELSÄK-FS 2017:3.*

The activity types into which electrical installation work is subdivided are set out in Chapter 4 of ELSÄK-FS 2017:3.

Notes on the regulation

Because the requirement only applies to electrical installation work, you only need to formulate your self-audit scheme to cover the "self-auditable" work you actually carry out. So your company must always start by establishing

- whether you even carry out any electrical installation work, and if so:
 - what electrical installation work you are already carrying out now
 - what electrical installation work you intend to carry out (offered and potentially provided to customers).

If your company uses subcontractors to carry out **all** the electrical installation work you offer your customers, you are not considered to carry out any electrical installation work so there is no need to set up a self-audit scheme.

Once you have established what work you do, you need to assign it to the correct activity types. Here, you are simply specifying the kinds of electrical installation work you carry out.

If you carry out **all** kinds of electrical installation work in a particular activity type, for example everything in the Residential buildings category, this is all you need to state. There is no need to go into any more detail. In this situation, the self-audit scheme must contain routines, descriptions and other information about how you carry out all these kinds of work.

If your company only carries out certain kinds of work in an activity type, for example only solar cell installations in the Electrical installations for generation of electric energy category, you need to add an extra description stating that you only carry out solar cell installations. This means you then only need to create routines, descriptions and other information about how you carry out solar cell installations.

The third point is simply a matter of answering yes or no to whether you work on an installation which is not your own.

Tips and examples

The time it takes you to establish where in your organisation electrical installation work is carried out depends on the extent of the work and the structure of the organisation. In companies with a small number of employees, the compliance officer is likely to know enough about the activity to make it an easy task. In larger organisations, you may want to use a range of methods.

If you carry out all kinds of work in a particular activity type, you only need to state the activity type.

If you just carry out certain kinds of work, you can either list them or define the scope in another way, see the National Electrical Safety Board's templates at www.elsakerhetsverket.se/dokument-egenkontroll (in Swedish).

Tips on establishing the work done in the company

- Find out how many authorised electricians there are in your electrical installation company and how many of them supervise electricians.
 - There is a letter template with questions you can use to help. The document is also available for download from the National Electrical Safety Board's web site. You can edit the template as you wish.
- Ask all managers and others in positions of authority whether any electrical installation work is carried out in their part of the company.
 - There is a letter template with questions you can use to help. The document is available for download from the National Electrical Safety Board's web site. You can edit the template as you wish.
- Visit the departments and units in the organisation.
 - Take the opportunity to spread the word about the Electrical Safety Act and the requirements that must be met in order to carry out electrical installation work. Handouts are available on the National Electrical Safety Board's web site.
- Talk to management about how you plan to develop the activity.
 - Do you plan to develop the electrical installation activity?
 - Will you be buying in certain kinds of electrical installation work instead of carrying out it in house?
 - Take the opportunity to spread the word about the Electrical Safety Act and the requirements that must be met in order to carry out electrical installation work.



Handouts are available on the National Electrical Safety Board's web site. Let people know that if there are plans to develop the electrical installation activity – plenty of notice is needed so you can keep the self-audit scheme up to date.

7.2.2 Chapter 3, § 5 (ELSÄK-FS 2017:3) - Skill requirements and access to skills

[Chapter 3, § 5 of ELSÄK-FS 2017:3](#)

The self-audit scheme shall state the skill requirements applicable to the electrical installation work to be carried out.

Unless the self-audit scheme states who is allowed to do what, it shall state which knowledge and skills are necessary for a particular kind of electrical installation work and how they are assessed.

The self-audit scheme shall contain a plan explaining how the necessary skills are maintained or if necessary developed.

Notes on the regulation

It is the job of the electrical installation company to manage and allocate the work. Your company must ensure that the individuals carrying out a particular kind of work have the necessary skills.

The regulation has two parts. When developing the self-audit scheme, the company must

- determine what skills are necessary for the work in question, and
- determine what skills each individual has

To determine people's skills, and therefore what kind of work they are allowed to carry out, you can either

- list the individuals in the self-audit scheme itself, or
- specify in the self-audit scheme how the individuals carrying out the work will be assessed

The method you choose in this part of the self-audit scheme affects the way you plan and carry out electrical installation work, see Chapter 3, § 9 below. Ultimately, whatever method the company chooses, it is the company's responsibility to ensure that the person carrying out a particular piece of work has the necessary skills.

If it turns out that there is no one with the necessary skills, your company must either

- remove that part of the electrical installation activity for which you lack the necessary skills
- train your existing staff, or
- recruit someone with the necessary skills.

In this part of the self-audit scheme, your company must state the skills you require for the work you carry out. You can choose to have the same skill requirement for all categories in an activity type, or you can have different skill requirements for different categories.

It is therefore up to your company to decide how to organise the skill requirements. In terms of the requirements you specify, there are several options. You can use a combination of different requirements, for example:

- Education
- Documented experience
- Industry certification
- Internal training or internships
- Practical and theory tests

The reason why the self-audit scheme is followed up is to identify whether there are individuals without the necessary skills for a particular kind of work. You must take action if your self-audits show that someone in the organisation is carrying out work without being correctly qualified. For example you could provide training or adjust the self-audit scheme.

Remember that the requirements cover *everyone* working for the company, whether they are permanently employed or seconded. Of course, you can have different routines for employees and seconded staff.

The skill requirements also have to be maintained over time, so your company must have a plan explaining how you will keep your employees' skills updated. The need for ongoing training may differ depending on the electrical installation work you carry out. Generally speaking, it may be necessary to provide ongoing training if

- new technologies affect the electrical installations
- new regulations or standards are introduced
- existing regulations and standards are modified, or
- the electrical installations are highly complex.

Tips and examples

See the National Electrical Safety Board's templates at www.elsakerhetsverket.se/dokument-egenkontroll (in Swedish)



7.2.3 Chapter 3, § 6 (ELSÄK-FS 2017:3) - Compliance officer

Chapter 3, § 6 of
ELSÄK-FS 2017:3

The self-audit scheme shall state which authorised electrician(s) in the organisation are appointed to promote compliance within the company in accordance with § 23 of the Electrical Safety Act.

If more than one authorised electrician is appointed by the company, the self-audit scheme shall state

- *how the task is divided between the compliance officers, and*
- *if the company carries out electrical installation work on an installation which is not its own, which of them is to appear on the company's application to the National Electrical Safety Board's register of companies.*

§ 22 of the Electrical Safety Act provides that someone who meets the conditions for temporary professional activity in Sweden may be regarded as authorised under certain circumstances.

Notes on the regulation

It is up to your company to decide how many compliance officers it wants to appoint and how their duties will be shared between them. According to the legislation, an electrical installation company must have at least one compliance officer.

If the company decides it needs more than one, the regulation requires you to specify how the task will be shared among the authorised electricians. However, the regulation says nothing about how the task is to be shared – this is entirely up to the company.

If there is more than one compliance officer, the company can share out the work according to the needs and the structure of the company, for example by

- geographical area,
- organisational unit,
- activity type,
- particular category in the activity types, or
- a combination of the above.

However the work is shared out, the company must still operate a single self-audit scheme. The self-audit scheme may be different in different parts of the company, but the company must always have a single, overarching self-audit scheme.

The electrical installation company must register with the National Electrical Safety Board (unless it only carries out electrical installation work on its own installations). When you register, you can only name one compliance officer. If your company has more than one compliance officer, the self-audit scheme must state which of them will appear in the registration.

It does not matter which of the compliance officers you choose to register provided the person has sufficient authorisation for the activity types contained in

the application. Being named as the compliance officer in the registration does not bring any additional responsibility for the self-audit scheme.

Tips and examples

[Section 3 on corporate responsibility](#) contains tips on how the company and the compliance officer can assign tasks, etc. in the organisation.

If you are not sure whether you need to register or not, [section 2](#) describes different situations in which registration is required and not required.



7.2.4 Chapter 3, § 7 (ELSÄK-FS 2017:3) - Organisation for electrical installation work and the self-audit scheme

Chapter 3, § 7 of [ELSÄK-FS 2017:3](#)

The self-audit scheme shall contain a description of the organisation which carries out electrical installation work and self-audit.

This part shall at least contain descriptions of the functions or persons with tasks in the company's self-audit scheme.

Notes on the regulation

The scope of this part of the self-audit scheme depends very much on the extent of the electrical installation activity and how tasks are allocated within your company. Sometimes there is an entire department checking that the company is compliant, for example using a dedicated organisation involving monitoring and follow-up.

To describe the organisation, your company could use an existing organisation chart or the list of skills you prepared earlier for the self-audit scheme.

Sole traders need only state that the compliance officer also manages the self-audit scheme and carries out all electrical installation work in the organisation.

Tips and examples

If you already have an organisation for electrical installation work and the self-audit scheme, this is what you need to describe or refer to here.

If you have not done this already or if you want to make changes to the organisation, you can use the checklist below to obtain the information you need for the self-audit scheme.



- In what parts of the organisation will you carry out electrical installation work?
- Will the different parts of the organisation carry out different types of electrical installation work?
- Who is/are the compliance officer(s)?
- Which of the compliance officers will be named in the registration with the National Electrical Safety Board (only if you are carrying out work on an installation which is not your own)?
- Do your routines make it clear that staff are not allowed to carry out electrical installation work unless they have been assigned such work?

The self-audit scheme shall contain the systems and routines necessary in order to ensure that before any electrical installation work is carried out, the conditions that apply to the electrical installation work are determined in terms of the installation and the task (installation knowledge) and that the requirements that are therefore relevant to the work are determined (determination of requirements).

Installation knowledge involves establishing

- *what electrical installation work is covered by the work,*
- *how the part of the installation involving the electrical installation work is constructed before the work takes place, and*
- *whether the electrical installation work changes the installation in such a way that the work must be carried out with different execution requirements than were applicable to the installation before the work too place.*

The determination of requirements involves an assessment of which requirements are applicable to the electrical installation work, with regard to the installation knowledge described in the second part.

The systems and routines covered by the self-audit scheme shall guarantee that the determination of requirements is repeated in the event that the conditions described in the second part change while the work is taking place.

Notes on the regulation

Electrical installation work can only be compliant with the applicable rules if the company is aware of the conditions that apply to the work. This is because the way installations are constructed depends on when they were installed and whether they originally met Swedish standards or not. According to this regulation, the self-audit scheme must be designed to take account of these issues.

Before electrical installation work can start, you must check which rules apply not only to the installation itself, but also to the markings and safety signs. The regulation therefore aims to ensure that the company knows which execution requirements are applicable to the work. These are also the rules against which the completed work will be checked.

In this context, note also that a task must not be carried out unless the electrical installation company is given the right conditions to carry out the work in accordance with the applicable rules.

Tips and examples

An example illustrating the need for installation knowledge in order to determine the requirements for a particular piece of work: Your electrical installation company get the contract for electrical installation work in a block of flats, and you do not know how old the installation is. So you need to analyse the



installation before starting to decide how you will carry out the work and what rules will apply.

The inspection finds that the basic electrical installation in the stairwell, other public spaces and the ground floor flats was installed in 1974 and that the other flats were fully modernised in 2007. The order involves adding new sockets in all bedrooms and also installing sockets in all balconies and outside spaces, so the inspection is vital – the sockets may need to be unearthed in some flats and earthed in others. The inspection also reveals that the sockets in balconies and outside spaces require residual current devices in some cases but not in others because the flats that were modernised in 2007 already have RCDs.

As well as the age of various parts of the installation, other valuable information is obtained from the analysis, such as:

- What is the basic dimensioning of the installation with regard to the distribution circuits and distribution boards for the flats?
 - Can all distribution boards accommodate the supplementation to the balconies in terms of physical space and the amperage of the energy meter fuse?
- What kind of system earthing does the installation have?
 - It may be important when installing RCDs to know whether the installation uses TN-C (four wires) or TN-S (five wires).

When the order is first placed, you should raise the issue of installation knowledge with the client

You could use your order confirmation or another document as a starting point. You could have a checklist to be completed when you receive and confirm a new contract or order regardless of its size. Get answers to these questions:

- Who is the client for the electrical installation work and what is his or her role? The answer to this question is important as certain issues around installation knowledge are closely linked to the installation owner.
- On the client's side, who is responsible for information about the construction, size and age of the installation?
- What information about the installation must be provided by the client or the installation owner when the order is placed?
- How will the parties proceed if information about the installation is missing?

When an order is placed, your company must establish what electrical installation work you plan to carry out on the installation in question. So questions like these could be added to the same document:

- What parts of the existing installation are covered by the new contract?
- What does the new contract involve and what electrical installation work will be carried out?

- Which execution requirements, standards and other rules are applicable to the work in the contract?
- Will you need to modify the installation because of its construction, size or age?

If it is clear beforehand or you discover while doing the work that you need modify or rebuild the installation in ways which are not covered by the contract, you will need to discuss this with the client. The document could include questions like this:

- Do you think it may be necessary to modernise, rebuild, etc. the existing installation in ways which are not covered by the contract because it was constructed on the basis of older rules and standards?
 - If the answer is YES, give details of the changes that may be necessary, the reasons, the execution requirements, standards and other rules applicable to the change, etc.

There are also other internal planning issues concerning the installation you will be working on. To answer these questions, your company could create a planning document for electrical installation work (see the National Electrical Safety Board's document at www.elsakerhetsverket.se/dokument-egenkontroll). The planning document could do the following:

- Establish the status of the existing installation in terms of construction, age and dimensioning.
- Staffing and allocation of tasks on the basis of the list of skills you prepared earlier.
 - Organisation for the project or order
 - Roles and staffing
 - Does everyone involved in the project or order have the skills required for the relevant activity type?
- If the answer is NO, how will you ensure that you adhere to the self-audit scheme?
- Choice of working method, etc.
 - What working method will you choose on the basis of the particular conditions?
 - Does the chosen working method adhere to execution requirements or established standards, and if so, which ones?
- If the answer is NO, specify the parts in question and how you intend to assess the risks and develop an alternative solution.
- Whether there are particular risks which must be taken into account
 - Does the planned electrical installation work involve any risks?
 - If YES, how will they be mitigated and prevented?
- How you intend to formulate detailed instructions, routines and checklists for the work

- You should also state the fundamental execution rules and standards, see also the point on the choice of working method.
- What monitoring and testing will be carried out, and by whom, while the work is being done and also before and after the installation is commissioned?
- How will you document the execution of the electrical installation work carried out in the project?

7.2.6 Chapter 3, § 9 (ELSÄK-FS 2017:3) - Staffing

Chapter 3, § 9 of
ELSÄK-FS 2017:3

The self-audit scheme shall contain the systems and routines necessary in order to ensure

- *that the persons who will carry out the electrical installation work have the relevant authorisation as an electrician or are included in the company's self-audit scheme, and*
- *that they have the skills necessary for the electrical installation work in accordance with Chapter 3, § 5.*

Notes on the regulation

This part of the self-audit scheme requires your company to have a routine or other method to ensure that you check that the person carrying out a particular piece of electrical installation work has the skills you decided were necessary before work started. There are several ways of doing this. If you only have a small number of employees there is no need to cross-check against the self-audit scheme every time work is done. Whoever assigns tasks is normally familiar with each individual's skills.

However, in larger companies with many employees, the person in charge of managing and allocating the work may not know in detail what kind of work each employee is allowed to carry out. In this case you should have a routine in which you cross-check against your self-audit scheme to ensure that the employee carrying out the work is qualified. It is also possible that circumstances keep changing so you need to check the documentation every time work is done.

Because your company has a particular responsibility for ensuring that none of your employees carry out electrical installation work for which they are not qualified, this too is included in the self-audit scheme, see point 1 above. It is sufficient if the routines cover point 2 because this in effect means that point 1 will also be covered.

7.2.7 Chapter 3, § 10 (ELSÄK-FS 2017:3) - Check of completed work (planning)

[Chapter 3, § 10 of ELSÄK-FS 2017:3](#)

The self-audit scheme shall contain the systems and routines necessary so that before any electrical installation work, the scope is established of the check which ensures that the completed work meets the requirements of Chapter 2 of ELSÄK-FS 2017:3.

Notes on the regulation

This is a crucial part of the self-audit scheme. You need to check the work in order to detect and correct issues that arise while the work is being done so it meets the requirements when it is completed.

If your company repeatedly carries out the same kinds of electrical installation work, the self-audit scheme can contain details of the checks to be performed after every piece of work. This is enough to meet the requirements for this part of the self-audit scheme.

However, if you cannot predict what checks you will need for the work you intend to carry out, you can instead formulate a routine specifying how you will produce documentation and other material allowing you to decide, before the task, work or project, what checks will be necessary.

There is no specific requirement to document or archive your decision for a particular task, work or project, but this could be an easy way of meeting the follow-up requirements.

Making sure the checks actually take place is covered by the next part of the self-audit scheme.

7.2.8 Chapter 3, § 11 (ELSÄK-FS 2017:3) - Check of completed work (implementing)

[Chapter 3, § 11 of ELSÄK-FS 2017:3](#)

The self-audit scheme shall contain systems and routines to ensure that the completed work is checked in the way determined in accordance with Chapter 3, § 10.

The self-audit scheme shall contain routines specifying how faults and shortcomings identified in the check are handled and followed up.

Notes on the regulation

This part of the self-audit scheme establishes that your company has the routines to ensure that the checks you previously decided upon are actually carried out. Any issues identified must be corrected. If the issues are systematic shortcomings or other faults affecting the self-audit scheme, they must be included in the continuous follow-up of the self-audit scheme.

Tips and examples

- When you come to the end of the contracted electrical installation work you must carry out checks before the installation is commissioned, and also when it is completed in full and ready to hand over.



- For example you could produce a *installation check document* for use as a checklist by your electrical installation company every time you complete electrical installation work or during the various phases while the work is being done.
 - a. Before the installation is commissioned you must:
 - i. Check that the installation is safe for people and property
 1. This requirement corresponds to the "Pre-commissioning checks" described in the Ordinance on Authorised Electricians.
 2. The checks must cover the parts with relevance to electrical safety, for example verifying that the protective earth is connected and functioning, that covers, enclosures and other touch protections are in place, and that it is impossible to access single insulated or uninsulated cables.
 - b. When the installation is completed, tested and ready to hand over to the client or owner, you must do the following:
 - i. Check that the changes made to the installation by your work meet the relevant requirements in the self-audit scheme, for example::
 1. Continuity of cables
 2. Insulation resistance of cables
 3. Check of safety devices
 4. Check of voltage level and voltage drop
 5. Check of residual current devices and other earth fault protection devices
 6. Check of fuses and other overcurrent and short circuit protection devices

7.2.9 Chapter 3, §§ 12–13 (ELSÄK-FS 2017:3) - Follow-up of self-audit and the self-audit scheme

[Chapter 3, §§ 12–13 of ELSÄK-FS 2017:3](#)

The electrical installation company shall perform the follow-up necessary to ensure that the company's routines are effective and that the company's self-audit is adequate. The self-audit scheme shall set out how such follow-up is to be carried out.

The self-audit scheme shall be updated when changes are made with relevance to self-audit.

At least once per year, the electrical installation company shall review the self-audit scheme and shall verify that the registration with the National Electrical Safety Board is up to date.

Notes on the regulation

A self-audit scheme must be kept up to date if it is to remain effective and fit for purpose. For example, you will need to adjust and develop the self-audit scheme

- if you identify shortcomings in existing routines,
- if the activity changes, for example if you start carrying out work that is not covered by your self-audit scheme, or
- if you appoint someone or use seconded personnel with skills which are not already covered and which match activity types you intend to introduce.

There are two elements to this part of the self-audit scheme. Your company must

1. regularly follow up how the existing self-audit scheme is working and whether it is up to date, and then
2. make the necessary changes to the self-audit scheme in light of the follow-up.

The frequency of follow-ups depends on your particular circumstances.

Companies with wide-ranging activity and complex self-audit arrangements need more frequent follow-ups than less complex ones.

But regardless of the size and complexity of your activity, you must review the self-audit scheme at least once per year. A good way of doing this is to present the follow-up to management

7.3 CHECKLIST

You may find this checklist useful when discussing how to manage and follow up the self-audit scheme.

Do you know exactly who does what?

Before you start any work, you must ensure that everyone knows who does what, and who will take the necessary decisions.

- Find out, and let people know, who in the organisation is/are authorised to take decisions about the self-audit scheme. For example this could be the board, the CEO, a management group, a line manager or the compliance officer.

How will management be kept up to date?

- Agree with management and the compliance officer how often management should be informed about the work being carried out.
- Decide in advance which of the management meetings will be used to review and approve the self-audit scheme every year, and include the self-audit scheme as a fixed item on the agenda.
 - How will you prepare the background data for the annual review, who will do it, and when will it be made available?

How will you handle changes and the need for changes

- Formulate routines whereby the line managers must inform the compliance officer when
 - new kinds of electrical installation work are planned
 - routines need to be changed

- systematic problems with execution are suspected.
- Develop tools enabling individual employees to report problems or suggest improvements, for example a special e-mail address, a web app or a suggestion box.
- Follow up any problems found when completed work is checked, for example by keeping the documentation relating to checks when problems are identified and corrected (see template).

Tips and examples

See the National Electrical Safety Board's templates at www.elsakerhetsverket.se/dokument-egenkontroll (in Swedish)



8 Activity types – analyse your activity

8.1 BACKGROUND

Activity types are the various kinds of work that electrical installation companies carry out.

If your electrical installation company carries out work on an installation which is not its own, you must register with the National Electrical Safety Board.

You can either register for all kinds of electrical installation work or just for certain kinds. If you only carry out electrical installation work on your own installation there is no need to register.

It may not always be clear whether the installation you are working on is your own or not. For example this issue arises if you carry out electrical installation work within a group of companies. See the examples in [section 2.1](#).

The determining factor is not the organisational structure, but whether the company carrying out the electrical installation work has a controlling influence on the company which owns the installation. If such a controlling influence exists, the work is classed as work on an installation which is the company's own.

Once you have defined the activity types carried out by your electrical installation company, you need to determine the scope of the activity which is subject to supervision. When you include an activity type, this also affects the authorisation and the self-audits that are necessary.

According to the National Electrical Safety Board the following simplifications have been made possible:

- The company's compliance officer can have an authorisation other than full authorisation.
- The registration with the National Electrical Safety Board only needs to cover the activity which is actually performed.
- The National Electrical Safety Board is able to perform targeted supervision on the basis of the activity types and the new supervision mandate.
- It is easier for purchasers of electrical installation work to check the company they intend to use

Dividing the activity in your electrical installation company into different activity types means you can adapt the requirements to each activity type. As a result, your work will not be burdened with more requirements than necessary.

There are two conditions that must be met when you split your activity into different activity types. First, it must be clear to you and to the National Electrical Safety Board which activity types you work in, and second, it must be clear to consumers how you have arranged your work so that the activity type of the work they are purchasing is obvious to them.

[§ 25 of ESA](#)

8.2 EXAMPLES OF ACTIVITY TYPES

As explained above, activity types are the various kinds of work that electrical installation companies carry out.

You must be as clear as possible when you describe an activity type, and the kinds of work included must be obvious to anyone looking for information. You should not be too general, and it must be easy to understand what kind of work your company does.

Some companies may need to register a number of different activity types.

The table below shows the kinds of work contained in the activity types involving electrical installation work in circuits supplied with a rated voltage below 1000 V AC and 1500 V DC, requiring at least an authorisation for low voltage, AL

Table 6. Low voltage activity types.

Activity type	Scope of activity type
Residential buildings	Electrical installation work in installations or sub-installations for the use of electricity in residential buildings, including adjoining buildings and areas.
Public spaces	Electrical installation work in installations or sub-installations for the use of electricity in offices, restaurants, schools or other commercial or public places. (This activity type does not include electrical installation work covered by the Residential buildings activity type.)
Other installations for the use of electricity	Electrical installation work in installations or sub-installations for the use of electricity in street lighting, industry, agriculture, areas with a risk of fire, explosive atmospheres, medical locations and other installations or sub-installations for the use of electricity not covered by the activity types Residential buildings or Public spaces.
Electric power network - low voltage	Electrical installation work in installations or sub-installations for general distribution via concessionary grids.
Railway operation - low voltage	Electrical installation work in installations for railway, light rail, underground railway and trolley bus operation.
Electrical installations for generation of electric energy	Electrical installation work in solar cell installations, battery storage, installations in hydroelectric and wind power, backup power, power supply to safety systems, and other installations and sub-installations for generation of electric energy.

The table below shows the kinds of work contained in the activity types involving electrical installation work on circuits supplied with a rated voltage above 1000 V AC and 1500 V DC, requiring full authorisation, A.

Table 7. High voltage activity types.

Activity type	Scope of activity type
Electric power network	Electrical installation work in installations or sub-installations for general distribution via concessionary grids.
Railway operation	Electrical installation work in railway installations.
Other installations	Electrical installation work in installations or sub-installations not covered by the activity types Electric power network or Railway operation.

The table below shows the kinds of work contained in the activity types involving electrical installation work in circuits supplied with a rated voltage below 1000 V AC and 1500 V DC for which limited authorisation, B, is sufficient.

Table 8. Limited activity types.

Activity type	Scope of activity type
Machinery	Electrical installation work in existing final circuits consisting of <ul style="list-style-type: none"> • permanent connection and disconnection of machinery, motors and equipment, and • installation of light fittings, switches and sockets.
Heating, cooling and ventilation	Electrical installation work in existing final circuits consisting of <ul style="list-style-type: none"> • permanent connection and disconnection of heating, cooling and ventilation systems, and • installation of light fittings, switches and sockets.
Lifts, gates and escalators	Electrical installation work in existing final circuits consisting of <ul style="list-style-type: none"> • permanent connection and disconnection of lifts, gates and escalators, and • installation of light fittings, switches and sockets.

8.3 SPECIAL ACTIVITY TYPES

The following special activity types cover work on both low voltage and high voltage installations.

Table 9. Cable laying activity type.

Activity type	Scope of activity type
Cable laying	Electrical installation work in installations and sub-installations for the transmission of electricity via concessionary grids, limited to the following work: <ul style="list-style-type: none"> • laying underground cables, including installing the associated cable cabinets, posts, earth terminals, and installing longitudinal earth wires, • cable pulling and feeding of overhead cable, and • simultaneously laying underground cables belonging to non-concessionary grids when carrying out installation work in accordance with the first paragraph.

The Cable laying activity type is exempt from the requirement to have a compliance officer. However, it is still subject to the other requirements relating to execution, the self-audit scheme and registration.

9 The electrical installation company's involvement in the application for authorisation as an electrician

This section has not been translated into English, so you are referred to the Swedish version of manual for additional information.

10 Registering an electrical installation company with the National Electrical Safety Board

This section has not been translated into English, so you are referred to the Swedish version of manual for additional information.

11 What happens when the National Electrical Safety Board performs supervision?

This section has not been translated into English, so you are referred to the Swedish version of manual for additional information.

12 Terms and definitions

This section has not been translated into English, so you are referred to the Swedish version of manual for additional information.

13 Summary

The new Electrical Safety Act comes into force on 1 July 2017. It introduces a completely new system of requirements that must be met by people working with electrical installations in Sweden. The new legislation contains requirements concerning how electrical installation work must be executed, the expertise which must exist within the company carrying out the installation, how the expertise of the people carrying out the work is guaranteed, and requirements concerning the self-audit scheme for the activity. It is the responsibility of the electrical installation company to ensure that these requirements are met. The same rules apply to electrical installation companies and authorised electricians whether they are from Sweden or abroad.

Any company carrying out electrical installation work *on an installation which is not its own* must register with the National Electrical Safety Board before starting the work. The easiest way to register the company is using the e-service on the [National Electrical Safety Board's web site](#). Click "English" in the top right of the e-service window for an English-language version.

Note that you should have completed all the following points before registering:

- Self-audit scheme (see [section 7](#))
- Compliance officer
- Activity types (see [section 8](#))
- Contact information
- BankID

Registration is quickest and easiest if it is done by the person who will be named in the registration as the *compliance officer*.

You are welcome to contact the National Electrical Safety Board if you need help with registering or if you have any other questions about the new rules.



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