

Dette er en oversettelse av den fastsatte læreplanteksten. Læreplanen er fastsatt på Bokmål

Laid down as a regulation by the Norwegian Directorate for Education and Training on 23 April 2012 as delegated in a letter of 26 September 2005 from the Ministry of Education and Research pursuant to the Act of 17 July 1998 no. 61 relating to primary and secondary education (Education Act) Section 3-4 first paragraph.

Valid from 01.08.2012

## Purpose

A coil winder's job is to produce, install, repair and maintain electrical machines. Electrical machines are a collective term for transformers, generators and motors. A coil winder works with DC and AC currents but this usually involves working mostly with AC currents. The subject shall help pupils develop competence working with electrical machines and understanding how these function.

Coil Winder training will help the apprentice learn to work safely and accurately and to acquire the skills necessary to produce or install machines based on measurements and calculations. Apprentices shall learn to wind motor core laminations used on electrical machines. Learning in the subject shall raise the apprentice's awareness about the environmental challenges that exist at home and abroad related to better use of resources and a sustainable development.

Coil Winder training will emphasise planning, execution, documentation and expert assessment of one's own work. The application and understanding of rules for electrical safety and the ability to work according to established routines, procedures and rules will be acquired at all stages of learning. Furthermore, learning shall help the apprentice learn internal control routines and understand Environment, Health and Safety. Learning in the subject shall also provide insight into how one's in service training company is organized and why the trade is valuable for society. Learning in the subject will promote service-mindedness, independence and the ability to cooperate with others.

Training completed and passed in the subject will lead to a Trade Certificate.

The professional title of this profession is Coil Winder.

## Structure

Coil Winder training consists of two main subject areas. The main subject areas complement each other, and should be viewed in relation to one another.

### Overview of the main subject areas:

Year level	Main subject areas	
Vg3 / in-service training at a training establishment	Production, Installation, Product Safety and Control	Repairs, Maintenance and Electrical Safety

## Main subject areas

The main subject area covers planning the production processes, fabricating windings and assembling these in electrical machines. Integrated into the subject is the use of current rules, standards, documentation, electro-technical calculations, concepts and measuring technology. The main subject area covers the use of hand tools and electrical, hydraulic and pneumatic machines and tools for fabricating and producing windings.

The main subject area covers repairs, maintenance and electrical safety related to fabricating windings. The main subject area also includes assembling windings on motor cores in electrical machines. Furthermore, the main subject area covers repairing, maintaining, dismantling, assembling and testing products.

Integrated into the main subject area is electrical safety, electro-technical concepts, measuring technology and the use of hand tools and electrical tools, as well as the use of digital tools and business studies.

## Basic skills

Basic skills are integrated into the competence aims for this course in areas where they contribute to the development of and are a part of the basic subject competence. In Coil Winder training, basic skills are understood as follows:

*Being able to express oneself orally and in writing* in Coil Winder involves communicating with customers, colleagues and professionals from other trades using precise language.

*Being able to read* in Coil Winder involves understanding different expository texts that allows one to work according to rules, recommendations and the needs of customers. This includes rules, norms, standards, work descriptions, drawings, manuals, equipment, installation instructions, data sheets and procedures for internal control and Environment, Health and Safety.

*Numeracy* in Coil Winder involves performing calculations for planning, execution and evaluations of system measurements and plans, evaluating the results of measurement and understanding the relationship between electrical circuits and systems.

*Digital literacy* in Coil Winder involves searching for information, making calculations and producing technical and economic documents for systems and units. This also involves reporting finished work.

## Competence aims

### Production, Installation, Product Safety and Control

*The aims of the training are to enable the apprentice to*

- work according to existing documentation
- plan and install different magnetic motor cores
- plan, install, test and document the production of windings for electrical machines
- use tools and machines to achieve the desired quality and safety without damaging tools, people or materials
- carry out the installation and fabrication of electrical machines
- plan and execute different kinds of impregnation, lacquering and drying for electrical machines
- plan, carry out and document controls and functions test for electrical machines based on current rules, standards and quality control documentation
- plan and carry out the encasement of electrical machines using different levels of shielding and protection
- carry out all fabrication and installation work in accordance with internal control systems and routines for quality assurance Environment, Health and Safety, and evaluate ways to improve routines and procedures
- use a professional and precise language about fabrication and installation suited to users, support personnel, colleagues and representatives from other trades
- document own learning from production, installation, product safety and control

### Repairs, Maintenance and Electrical Safety

*The aims of the training are to enable the apprentice to*

- plan, carry out and document troubleshooting and repairs to electrical machines
- carry out risk assessments, functions testing, final controls and documentation of work on electrical machines and equipment and evaluate the quality of own work
- explain and elaborate on work done on equipment in potentially explosive areas

- carry out all repair and maintenance work in accordance with internal control systems and routines for quality assurance and Environment, Health and Safety and evaluate possible improvements to routines and procedures
- use a professional and precise language about repairing and maintenance of equipment suited to users, support personnel, colleagues and representatives from other trades
- explain and elaborate on the company's origins, development and value creation
- document own learning in repair and maintenance

## Assessment

### Vg3 Coil Winder

Provisions for final assessment:

Main subject areas	Provision
Production, Installation, Product Safety and Control	All apprentices must take a trade examination, which is normally carried out within a period of six workdays.
Repairs, Maintenance and Electrical Safety	

The provisions for assessment are stipulated in the regulations of the Norwegian Education Act.