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 10 March 2008 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 01.08.2008

Valid to 31.12.2023

Purpose

Lift fitter shall lay the foundation for practicing a vocation in lift installations, systematic maintenance modifications and control checks. The subject shall lay the foundation for user safety and operational security in a society that is becoming more and more urbanised and with an increasing need for high buildings. Furthermore, the subject shall lay the foundation for upgrading older buildings, which can help uphold investments and extend the lifetime of these installations. The concept of *Universal design* for buildings sets the requirements for accessibility for everyone, including persons with limited mobility and the need for specially designed access routes. Lifts are a part of production processes in industrial buildings and at offshore sites.

Lift fitter shall develop the ability to handle old and new products, working methods and lift systems. Learning in the subject shall make the lift fitter more aware of the relationship between mechanical, electrical and electronic components so that the total understanding of systems allows for safe execution of work and operation of the device. Learning in the subject shall promote consideration for the working environment, the global natural environment and use of resources, which is important in a holistic approach to work. Learning in the subject shall be done according to existing rules for lift systems and work tasks to be carried out. Furthermore, learning in the subject shall help the apprentice develop the ability to communicate and cooperate with clients, users and other occupational groups, both within a company and with others.

Learning in Lift fitter shall emphasise testing and trial runs, reflection and technical insight related to the most central operating and control systems for lifts. The company's organisational structure shall also be included in learning. Practical application and understanding of current rules and regulations for lifts shall be an important part of this learning. Training in working safely on electrical parts and systems, and caution with a thought to one's own safety and that of users, shall be emphasised. Learning in the subject shall promote the ability to plan own work, use product information, follow working method descriptions, carry out quality assurance routines and use tools related to different tasks and different kinds of lifts. Learning in the subject shall promote the ability to cooperate with others within and outside of one's own discipline, by developing the ability to communicate with clients, users, support personnel and colleagues.

Training completed and passed in the subject will lead to a Trade Certificate. The professional title is Lift Fitter.

Structure

Lift fitter consists of one main subject area.

Overview of the main subject area:

Year level	Main subject area
Vg3 / In-service training at a training establishment	Lift installations

Main subject areas

The main subject area covers installation of new lifts in new and existing buildings. Work shall be done according to technical specifications, installation procedures, drawings and electrotechnical diagrams. Working on lifts includes troubleshooting, operational checks and preventive maintenance. It also covers modifications to existing systems and preparing the existing lift's structure and functions so that the chosen solution for integrating the new and old technology of the electrical and mechanical functions can be updated and verified. Integrated into this is planning and control checks of a building's qualifications, coordination of work, selection of safe working methods and tools. These are based on any modifications or the distinctive properties of a system, transport of material to the installation

location, assembly and adaptation of equipment to the building's design and operations system, adjustment and configuration of control mechanisms with the help of instruments and digital tools as well as later inspection and supervision of the finished installation.

With modifications, the chosen solution must be verified and special operational checks carried out on the modifications and consideration of any consequence these changes might have to the existing equipment. Integrated into this area are systematic methods for troubleshooting and operational checks with the help of instruments, error rectification and support from product information, in accordance with specifications from client contracts, maintenance programs and rules for existing lifts. Requirements to environment, health and must be satisfied during work.

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 Lift fitter, basic skills are understood as follows:

Being able to express oneself orally and in writing in Lift fitter involves communicating in precise technical language with colleagues, superiors, clients and users of the lifts.

Being able to read in Lift fitter involves understanding professional information about the individual lift, conditions for the work at hand and any conditions related to working safely on lifts and electrical systems. It involves reading and understanding relevant instructions and regulations.

Numeracy in Lift fitter involves carrying out calculations related to the practical work of placing equipment, supervision of dimensioning and assessments of results from measurements and tests based on working documentation, instructions and regulations.

Being able to use digital tools in Lift fitter involves searching for information, configurations and troubleshooting. It involves analysing operating conditions and adapting values for control mechanisms and systems. Furthermore, it involves acquiring information and reporting own work.

Competence aims

Lift installations

The aims of the training are to enable the apprentice to

- plan and carry out installation, start up the lift system and carry out functions tests that document the requirements set for the system
- perform work according to relevant directives, current rules and regulations, guidelines and standards for lifts
- plan and execute work on the lift's electrical systems according to current safety regulations
- give necessary first aid
- identify and do control checks on the different power supply systems on the lift, and install protective safety devices according to current rules and regulations
- elaborate on how a lift's electrical motors are built and function
- plan and carry out measurements for height, width and depth of lift shafts
- plan the location of the lift, and carry out the installation of tracks and guiderails etc
- install, adjust and carry out functions tests and maintenance on safety components for lifts
- install, adjust and do functions tests on brakes for a lift system
- identify, carry out functions tests and maintain anti-fall devices and systems
- plan the placement of, install, adjust and do functions tests on manual and automatic doors
- install and configure regulated drive systems based specific product procedures

- evaluate wear and leaks, replace gaskets and adjust valves in a hydraulic system, then do a functions test on the system
- carry out replacement of electric and electronic components in the control mechanism in a safe and systematic manner
- use measuring instruments and digital tools for troubleshooting and start-up, and interpret the results from the measurements
- select, maintain and use the correct tools for work operations
- install, start up, run functions tests and do maintenance on alarm systems for lifts
- do a systematic troubleshoot of relays and digital lift controls
- select and handle subsidiary materials and aids
- carry out the joining and connecting of components with different fastening techniques
- carry out the joining and connection of components using electric arc welding
- start-up and maintain the lift's digital network based on the product's particular procedures
- plan the placement of and install the lift car, counterweights, disks, and primary machine and hydraulic components
- understand the dynamic and static elements in lift construction
- measure, evaluate and carry out balancing on a lift system
- select and use correct lifting tools and equipment
- evaluate consequence measures for modifications, and plan, carry out and start up a lift system, then carry out functions tests that document that requirements set for the system are upheld
- carry out final inspections on hydraulic and electric lifts based on correct control procedures
- perform preventive maintenance on lifts
- select and use approved personal protective equipment based on risk assessments
- evaluate wear on load-bearing elements and disks, and plan measures and carry these out safely
- make a report about finished work for internal company use in a clear and concise manner, both written and oral, and instruct lift inspectors in a clear and precise manner about stand-by and emergency servicing and daily inspection
- install, adjust and carry out functions tests and maintenance on the lift's shaft information
- identify any possible electromagnetic sources that might influence a lift's equipment, and be familiar with any possible measures needed to correct this
- describe the in-service training establishment's organisation, economy, requirements for dealing with customers and social influence, and the company's system of agreements between the company and its employees
- carry out work according to routines for quality assurance and current rules and regulations for environment, health and safety, and contribute to improvement processes
- communicate planning and execution with colleagues and personnel from other disciplines
- read and understand English words and terminology related to lift installations
- make a report about finished work in a clear and concise manner, both written and oral
- document own learning and training in lift installations

Assessment

Vg3 Lift fitter

Provisions for final assessment:

Main subject areas	**Provision**
Lift installations	The apprentices shall sit for a written examination in the subject. The examination must be passed before a Trade Examination can be taken. The examination is prepared centrally and censured locally. All apprentices shall sit for a Trade Examination, which is normally carried out over a period of 33 working days.

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