europass

CERTIFICATE SUPPLEMENT (*)

Austria

1. TITLE OF THE CERTIFICATE (DE) (1)

Lehrabschlussprüfungszeugnis Fernwärmetechnik

(1) in original language

2. TRANSLATED TITLE OF THE CERTIFICATE (EN) (2)

Certificate of Apprenticeship “District Heating Technology” (f/m)

(2) This translation has no legal status.

3. PROFILE OF SKILLS AND COMPETENCES

Specialist areas of competence:

Basics of district heating and installation technology
The specialist in district heating technology uses a wide variety of technical documents for the work to be carried out, from which he/she obtains the necessary information. He/she creates his/her own sketches, simple wiring and assembly plans as well as plans according to standard specifications by hand or with the help of a computer. The specialist selects the appropriate measuring devices for measuring technical and typical occupational electrical variables and uses them to determine various measured variables, checks them for plausibility and documents them accordingly. For various installation, assembly and maintenance activities, he/she prepares, for example, hand tools and hand-held machines as well as assembly materials, parts and components based on the order as part of work planning and preparation. The specialist processes a wide variety of materials such as steel, copper, plastics and metal composites, taking into account their utilisation, processing and machining possibilities using suitable manual or mechanical processing methods, e.g. to prepare pipes, pipe supports and substructures. The specialist is also responsible for making connections by welding, soft and hard soldering and other non-detachable and detachable connections. Other activities that fall within the specialist’s area of responsibility include bending pipes, applying measures for active and passive corrosion protection and carrying out sealing measures. In order to automate systems such as softening and osmosis systems, gas and exhaust systems, ventilation systems and heating systems, he/she installs, programmes and tests measuring, control and regulation equipment as well as programmable logic controllers in compliance with all electrical safety regulations specific to the profession. In order to ensure security of supply and rapid repair measures, the specialist’s area of responsibility also includes helping to order and stock sufficient spare parts and other components for district heating and cooling generation and distribution systems, heating, cooling and hot water systems. He/she is also involved in managing and controlling the warehouse, determining and monitoring stock levels of spare parts and other components. The specialist must also be involved in planning the maintenance of district heating and cooling generation and distribution systems, heating, cooling and hot water systems.

District heating and cooling generation and distribution
By operating the appropriate water treatment plants for hardness stabilisation, softening, desalination, for example, the specialist in district heating technology ensures that the process water required for district heating and cooling technology is available in the appropriate quality (e.g. hardness, conductivity, pH value, ammonium). In addition, he/she is involved in the operation and monitoring of work processes – also with computer-aided control technology and remote monitoring – of generation plants (combined heat and power station, heating plant, absorption chillers, compression chillers) and their components (e.g. boiler plant, fuel storage, fuel supply, water treatment, flue gas cleaning, steam turbine, generator, evaporator, compressor, absorber, safety equipment), based on different energy sources (e.g. waste, biomass, gas, combined heat and power, sea, river or ground water, waste heat). He/she is also involved in controlling and optimising the energy flows of district heating and cooling supply systems. In order to utilise other energy sources as efficiently as possible, external energy sources (e.g. waste heat from production plants) are also fed into district heating and cooling supply systems. The specialist also recognises faults in generation plants and their components using computer-aided systems (e.g. with tablets for monitoring and fault reporting) and rectifies them (without interfering with the refrigeration circuit). As part of maintenance work, he/she also carries out simple assembly and disassembly work (without interfering with the refrigeration circuit). As part of the installation of district heating and cooling distribution systems, the specialist is involved in the construction of trenches, including securing and adding joists, as well as preparing (e.g. creating a substructure) for the laying of pipe systems. He/she is also involved in laying – in co-operation with other trades – and connecting pipe systems (e.g. overhead lines in buildings, plastic-sheathed pipes, steel-sheathed pipes, metal service pipes) using connection techniques (e.g. welding, soldering, press and compression couplings). The laying of pipe systems also includes the installation of fittings, expansion compensators, venting and draining equipment as well as work for moisture proofing, strength protection and thermal insulation. Laid pipe systems are recorded by the specialist in a geographic information system (GIS applications). He/she also detects faults in district heating and cooling distribution systems using computer-aided

systems (e.g. with tablets for monitoring and fault reporting) or helps to find leaks, for example, and rectifies these faults. In addition, he/she maintains district heating and cooling distribution systems and their components and is also involved in inspecting shaft structures in order to maintain fittings or installations or to assess the structural condition of shaft structures. Cooperating in the operation and monitoring of district heating and cooling distribution systems – by operating fittings or with computer-aided control technology and remote monitoring – is also part of the specialist's field of activity. He/she assembles and installs parts and components of district heating and cooling substations and connects them using suitable installation and connection techniques and puts them into operation. As part of his/her connection activities, he/she also produces wall and ceiling ducts for pipes, for example. The specialist systematically localises, finds and rectifies any faults, defects and malfunctions in district heating and cooling substations.

Service of commercial, industrial and administrative facilities
The specialist in district heating technology is aware of the importance of his/her appearance when working with customers. He/she installs meters and other measuring equipment (analogue/digital), reads the data and assesses its validity. He/she replaces meters and other measuring equipment for calibration. Heating systems (for various energy sources such as district heating, heat pumps, gas, solar, photovoltaics) and cooling systems as well as their parts and components (e.g. boilers, pumps, radiators, convectors, cooling ceilings, thermostats, exhaust systems) including safety devices such as pressurisation and temperature protection are maintained by the specialist (without interfering with the cooling circuit) in accordance with plans. He/she also rinses heating and cooling systems after servicing, carries out leak and pressure tests using suitable measuring devices as well as functional checks (without interfering with the cooling circuit) and optimises the efficiency and cost-effectiveness of heating and cooling systems. The specialist also recognises faults in heating and cooling systems (e.g. leaks, electrical and hydraulic faults) using computer-aided systems, systematically localises them, finds them and takes further measures (without interfering with the cooling circuit). He/she also maintains hot water systems including their parts and components (e.g. hot water storage tanks, fittings) in accordance with plans. The specialist's area of responsibility also includes identifying faults and possibilities of optimisation for hot water systems using computer-aided systems. He/she systematically localises and identifies any faults detected and takes further measures. He/she also determines the quality of the water in terms of hygiene for hot water systems.

Interdisciplinary areas of competence:

- Working in an operational and professional environment
- Quality oriented, safe and sustainable work
- Digital work

4. RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE CERTIFICATE (3)

Range of occupations:
Employment including in district heating and cooling supply companies

(3) if applicable

(*) Explanatory note
This document has been developed with a view to providing additional information on individual certificates; it has no legal effect in its own right. These explanatory notes refer to the Decision (EU) 2018/646 of the European Parliament and of the Council of 18 April 2018 on a common framework for the provision of better services for skills and qualifications (Europass).
More information on Europass is available at: http://europass.cedefop.europa.eu or www.europass.at

5. OFFICIAL BASIS OF THE CERTIFICATE

Name and status of the body awarding the certificate	**Name and status of the national/regional authority providing accreditation/recognition of the certificate**
Lehrlingsstelle der Wirtschaftskammer (Apprenticeship Office of the Economic Chamber; for the address, see certificate)	Bundesministerium für Arbeit und Wirtschaft (Federal Ministry for Labour and Economy)
Level of the certificate (national or international) NQF/EQF 4 ISCED 35	**Grading scale / Pass requirements** Overall performance: Pass with Distinction Good Pass Pass Fail
Access to next level of education/training Access to the *Berufsreifeprüfung* (i.e. certificate providing university access for skilled workers) or a vocational college for people under employment. Access to relevant courses at a *Fachhochschule* (i.e.	**International agreements** Between Germany, Hungary, South Tyrol and Austria, international agreements on the mutual automatic recognition of apprenticeship-leave examinations and other vocational qualifications have been concluded.

university level study programme of at least three years' duration with vocational-technical orientation); additional examinations must be taken if the educational objective of the respective course requires it.	Information on equivalent apprenticeship occupations can be obtained from the (Federal Ministry for Labour and Economy).

Legal basis

1. Training Regulation for District Heating Technology BGBl. II (Federal Law Gazette) No. 185/2024 (company-based training)
2. Curriculum framework (education at the vocational school for apprentices)

6. OFFICIALLY RECOGNISED WAYS OF ACQUIRING THE CERTIFICATE

1. Training in the framework of the given Training Regulation for District Heating Technology and of the curriculum of the vocational school for apprentices. Admission to the final apprenticeship examination upon completion of the apprenticeship period specified for the apprenticeship trade concerned. The final apprenticeship examination aims to establish whether the apprentice has acquired the skills and competences required for the respective apprenticeship trade and is able to carry out the activities particular to the learned trade herself/himself in an appropriate manner.
2. Admission to the final apprenticeship examination in accordance with Article 23 (5) of the *Berufsausbildungsgesetz* (Vocational Training Act). An applicant for an examination is entitled to sit the final apprenticeship examination without completing a formal apprenticeship training if she/he has reached 18 years of age and is able to prove acquisition of the required skills and competences by means of a relevant practical or an on-the-job training activity of appropriate length, by attending relevant courses etc.

Additional information:

Entry requirements: successful completion of 9 years of compulsory schooling

Duration of training: 3 ½ years

Enterprise-based training: Enterprise-based training comprises $^{4}/_{5}$ of the entire duration of the training and focuses on the provision of job-specific skills and competences according to Article 3 of the Training Regulation, BGBl. II (Federal Law Gazette) No. 185/2024, enabling the apprentice to exercise qualified activities as defined by the profile of skills and competences specified above (cf. job profile).

Education at vocational school: School-based education comprises $^{1}/_{5}$ of the entire duration of the training. The vocational school for apprentices has the tasks of imparting to apprentices the basic theoretical knowledge, of supplementing their enterprise-based training and of widening their general education in the framework of subject-oriented part-time instruction.

More information (including a description of the national qualification system) is available at:
www.zeugnisinfo.at and www.edusystem.at

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