





Mapping for_Final examination / journeyman's examination in the state-recognized training occupation Plant mechanic for sanitary, heating and air conditioning systems (Germany)

Translated title of the training programme	Final examination / journeyman's examination in the state-recognized training occupation				
	Plant mechanic for sanitary, heating and air conditioning systems				
Brief explanation of the professional fields of ac-	Plant mechanic for sanitary, heating and air conditioning systems primarily work at customers' premises on the planning, installation and maintenance of complex plants and				
tivity (appr. 5 sentences)	systems in the areas of sanitary, heating, ventilation and air conditioning engineering and in the fields of environmental technology and renewable energies.				
Certificate (incl. EQF-level)	ISCED 3B				
	German Qualifications Framework (DQR) level 4 = EQF level 4				
Entry requirements	Entry requirements are not governed by legislation; as a rule, young people are admitted after completing (nine or ten years of) general education.				
Access to next level of education / VET-training	Master craftsman qualification – installer and heating fitter, Certified energy networks foreman State certified technician in the relevant specialisms				





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Notes on using the matrix (Glossary)

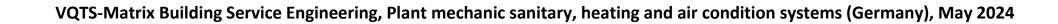
The competence matrix for the field of Building Service Engineering is the result of a pan-European empirical study of operational practice. From this, a total of 10 core work processes were identified on the vertical axis and the competences required for these were described as units of learning outcomes. The entire matrix relates to EQF levels 3 - 6. The level of requirement of the matrix increases horizontally and, with regard to core work processes 1 to 7, also vertically. Core work processes 1 to 7 relate to classic core competences in Building Service Engineering. Core work processes 8 to 10, on the other hand, are to be understood more as cross-activity areas of expertise that are particularly important for adaptation processes in the context of interdisciplinary cooperation. The units in the matrix are formulated in general terms and can therefore be related to different occupational fields that have cross-sectional competences in Building Service Engineering.

The definitions and explanations below will help you to identify the competencies of the various occupational fields

Building systems tech- nology	Building systems technology encompasses all the technology required to operate a building. This includes construction technology, sanitation, heating and air conditioning, electrical engineering, information technology and security technology.
Building systems	Building systems include all technical components of a building for the supply of heat, air, light, water, energy and information, the disposal of wastewater and exhaust air as well as all associated processes. The term building system must be replaced accordingly for an individual building systems technology trade (e.g. electrical engineering or sanitation, heating, and air conditioning). e.g.: Electrical engineering: the entire power supply of a building. Heating technology: the entire heating system of a building.
Components of build- ing systems	Components of building systems include single technically relevant elements of a building. e.g.: Electrical engineering: PV modules as a component of the entire electrical energy supply. Heating technology: A heat pump as a component of a building's entire heating system.
Building system pro- cesses	In terms of facility management, building system processes include all technical and service-related processes regarding planning, construction, operation and dismantling of a building. (e.g. switch-on times of lighting, ventilation, and air conditioning systems, cleaning intervals, presence times, energy flows, operating times of monitoring equipment)



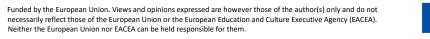






	Competence areas Core working process	Steps of competence development:							
1	Assembly, disassembly and disposal of building systems and their components	He/she can assemble and disassemble of nents of building systems according to eassembly and installation plans and in cance with applicable standards, regulation laws. He/she can professionally separate compand building materials while the disposal building systems.	and disassembly of component tems according to customer species, and coordination with authorities system manufacturers, conquirements. He/she can dispose of the proted components and building ing systems in accordance with	and disassembly of components of building systems according to customer specifications and in coordination with authorities, architects, and system manufacturers, considering legal requirements. He/she can dispose of the professionally separated components and building materials of building systems in accordance with legal regulations. He/she can estimate workloads and report pos-		He/she can analyze and adapt assembly, dismantling and disposal concepts for building systems or their components regarding process optimization and the current legal situation. He/she can use project management tools in a targeted manner.		He/she can develop new concepts for installation, dismantling and disposal of building systems or their components in cooperation with customers, authorities, and manufacturers of building systems technology.	
2	Maintain building systems or their components	He/she can operate components of builditems according to specifications and checfunction.		k on components	•	y out complex inspection, repair work on building sysdocumentation.	building specifica applicabl He/she c and dete resource	can use project management tools in a	
3	Commissioning of building systems or their components	building components according to specifications and customer requirements.	He/she can commission technical building systems and configure them in accordance with customer requirements and prepare documentation and test reports in compliance with the applicable standards and specifications. He/she can recognize and document defects and conflicting objectives during commissioning.	technical building so ure them ordance with customer requires and prepare documentation est reports in compliance with oplicable standards and specifications. The can recognize and document as and conflicting objectives during the chinical building so ure them in account to the compliance of the compliance with a compliance with customer require- to and prepare documentation pare documentation in compliance with a complia		building systems technology in compliance with applicable standards and specifications.		He/she can hand over complex technical building systems or the entire building system technology to the operator, including the associated documentation, instruct him/her in its use and inform him/her of the operator's responsibilities.	
4	Monitoring, control and optimization of building system processes through building automation	automation systems according to specifications and guidelines and fur-	He/she can interpret data when faults occur in building systems, initiate processes to rectify faults according to guidelines and document this.	He/she can indep solution strategies faults occurring in systems and initiat tation.	in the event of technical building	He/she can analyze the o conditions of complex build tems, carry out optimization document changes.	ing sys-	He/she can develop, document, and implement concepts for optimizing the economy and ecology of building system processes by analyzing building automation data.	







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	Competence areas Core working process	Steps of competence development:							
5	Conception of build- ing systems, their components and the associated processes	He/she can recognize, structure, and specify the requirements for building systems from customer orders and convert them into a user profile, considering applicable regulations, standards, and laws. He/she can create a concept for the requirements for building systems from user profiles.	components of building systems according to the concepts created from the user profile, concable regulations, standareate a concept for the for building systems components of building systems according to the concepts created from the user profiles in compliance with regulations and guidelines. building system processes in terms of facility management. building system processes in terms of facility management. He/she can prepare technical data, determine costs for the operation and management of buildings and further specify service tasks as well as com-		He/she can determine all data for the documentation erty operation and prepare gir for the management of buildi	of prop- ven data	He/she can prepare tender documents based on applicable legal requirements and the user profile. He/she can determine optimization potentials regarding economy and ecology for existing systems and new systems, and further create corresponding concepts and advise customers in this regard.		
6	Identification, implementation, and review of legal requirements for the operation of a building system	He/she can carry out and document activities to maintain operation regarding legal requirements for a building system or its components as specified.	ments for system ther importhrough	can identify the legal require- or the operation of a building based on regulations and fur- olement and document them organizational measures.	He/she can indepe protocols and work gal requirements.	•	He/she can prepare a hazard ment (risk analysis). He/she can take the risk ana account when organizing the tion of a building system as planning personnel deployments.	lysis into e opera- nd when	He/she can create and optimize a guideline for the implementation of legal requirements, draw conclusions about their effectiveness and take them into account in future planning processes.
7	Cost control and monitoring for the life cycle of a building system		can determine and document basic data king cost of building systems in accordant th guidelines. He/she can evaluate basic data for and create key figures from it.		•	ting He/she can evaluate key figures of building systems and analyze them to identify optimization potentials.			can implement the identified optimiza- entials and ensure their effectiveness.
8	Communication across trades, also in foreign languages	He/she can understand basic technical his/her own and other trades. He/she can conduct conversations with ors and employees of his/her own and trades and customers in an appropriate while presenting and explaining facts. He/she can read product data sheets a out assembly and operating instructions/her own and other trades. He/she can communicate with non-strades with the help of translation aids.	conduct conversations with superi- ployees of his/her own and other customers in an appropriate manner nting and explaining facts. read product data sheets and carry bly and operating instructions of and other trades.		ons with superiors in and other trades conflicts appropri-	coordination mee from all trades and He/she can resolve He/she can unde	et and document planning and tings with "decision-makers" authorities involved. The conflicts appropriately. The restand, interpret, and apply and regulations within the overall system.	He/she can create complex process descriptions across all trades, considering applicable regulations. He/she can organize cross-trade communication in a foreign language.	







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	Competence areas Core working process	Steps of competence development:						
9	Human resources management	He/she can identify the training needs of employees and select and organize suitable training courses for further education and training.	He/she can plan personnel requirements, define criteria for the qualification profile of specialist staff and formulate corresponding job descriptions.	He/she can conduct and document personnel development interviews with employees.				
			mg job descriptions:	He/she can prepare an appraisal for employees based on criteria.				
				He/she can recognize the professional and personal development potential of employees and promote it through suitable measures.				
10	Digital information and knowledge management	He/she can choose basic and advanced digital tools to solve professional tasks and use them in a targeted manner in his/her own profession.	He/she can choose basic and advanced digital tools to solve professional tasks and use them in a targeted, collaborative manner not only in his/her own profession.	He/she can design and create building operation workflows from an economic and ecological point of view while taking future requirements into account with the help of suitable tools and modern technologies.				
		He/she can apply data protection regulations and legal regula-	He/she can select and use suitable digital tools to create tech-					
		tions in a professional context.	nical presentations and documentation.					
		He/she can carry out targeted information research to solve professional tasks and evaluate the results.	He/she can carry out targeted information research to solve professional tasks and evaluate the results and check their professional accuracy.					



