OCCUPATIONAL QUALIFICATION STANDARD

Chartered Civil Engineer in Buildings and Structures, EstQF Level 8

An occupational qualification standard is a document which describes the set of skills, knowledge and attitudes, i.e. competence requirements, needed to successfully accomplish duties. Occupational qualification standards are used for compiling curricula and awarding qualifications.

Occupational title	Level of Estonian Qualifications Framework (EstQF)
Chartered Civil Engineer in Buildings and Structures, EstQF Level 8	8

Possible specialisation and titles on occupational certificate	
Specialisation	**Title on occupational qualification certificate**
Building construction	Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 Building construction
Harbour construction	Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 Harbour construction
Geotechnical engineering	Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 Geotechnical engineering

Part A
DESCRIPTION OF WORK

A.1 Description of work

Civil engineers in construction act as specialists in the designing, construction, expansion, reconstruction, demolition and restoration of buildings and facilities or as researchers developing and implementing complex structural engineering solutions. In performing their professional duties, civil engineers give consideration to social, economic, environmental, occupational health, occupational safety and ethical aspects and work with specialists in related fields.

The following occupational qualification standards have been developed in the profession of civil engineer:

- Civil Engineer in Buildins and Structures, EstQF Level 6
- Diploma Civil Engineer in Buildings and Structures, EstQF Level 7
- Chartered Civil Engineer in Buildings and Structures, EstQF Level 8

Civil engineers in general construction specialise in one of three sub-specialities:

a) Building construction
b) Harbour construction
c) Geotechnical engineering[1]

In specialising, at least one of the following occupations must be chosen:

a) In the case of building construction:
- Drafting a construction project for a building
- Managing construction operations
- Construction management
- Owner's supervision
- Expert analysis of building projects
- Building audits
- Managing design work[2]
- Construction cost estimation

- Training engineers and conducting research
b) In the case of harbour construction:
- Designing port facilities
- Managing construction operations
- Construction management
- Owner's supervision
- Expert analysis of building projects
- Building audits
- Managing design work[2]
- Construction cost estimation
- Training engineers and conducting research
c) In the case of geotechnical work:
- Geotechnical design
- Managing construction operations
- Construction management
- Owner's supervision
- Expert analysis of a project
- Building audits
- Geotechnical surveying
- Managing design work[2]
- Construction cost estimation
- Training engineers and conducting research

Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 is a specialist who is responsible for their own performance and that of others in the work group they manage.
The occupational qualification of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 entitles the bearer, on a statutory basis, to act as a competent person independently and at their own risk within the limits described as follows:

I CONSTRUCTION OF BUILDINGS OR PORT FACILITIES SUBJECT TO BUILDING PERMIT REQUIREMENTS, CONSTRUCTION MANAGEMENT, CONSTRUCTION COST ESTIMATION and GEOTECHNICAL WORK
No technical limitations.

II PREPARATION OF BUILDING DESIGN DOCUMENTATION FOR BUILDINGS AND PORT FACILITIES SUBJECT TO BUILDING PERMIT REQUIREMENTS AND GEOTECHNICAL DESIGN
No technical limitations.

III PERFORMING OWNER'S SUPERVISION
No technical limitations.

IV EXPERT ANALYSIS OF BUILDING DESIGN DOCUMENTATION
V BUILDING AUDITS
VI MANAGING DESIGN WORK[2]
No technical limitations.

VII CONSTRUCTION COST ESTIMATION
No technical limitations.

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[1] A qualification granted in geotechnical engineering, a sub-speciality of general construction, also provides the right to act as a competent person in road engineering at Level 8 and in geotechnical works in the speciality of utility systems of buildings in environmental engineering.
[2] Design management refers not to the management of a narrow speciality but to project management for an entire design project

A.2 Tasks

A.2.1 Mandatory competences of engineer
1. Following the requirements of professional ethics

2. Professional self-improvement 3. Participating in teamwork and managing a team 4. Applying the principles of environmental protection and energy efficiency 5. Applying specialised knowledge to work 6. Digital competence and language skills
Specialised areas of work
A.2.2 Building construction 1. Management and organisation of work 2. Quality control of completed works and their parts 3. Complex compliance and suitability control of completed works 4. Arranging the transfer of completed works to the customer A.2.3 Harbour construction 1. Management and organisation of work 2. Quality control of completed works and their parts 3. Complex compliance and suitability control of completed works 4. Arranging the transfer of completed works to the customer A.2.4 Geotechnical work 1. Management and organisation of work 2. Quality control of completed works and their parts 3. Complex compliance and suitability control of completed works 4. Arranging the transfer of completed works to the customer
Elective areas of work
A.2.5 Preparing building design documentation 1. Compiling the design project within the limits of competence provided by the occupational qualification level 2. Collecting and analysing source data 3. Selecting, calculating and dimensioning the scheme and type of load-bearing solutions 4. Determining building enclosure solutions 5. Compiling the explanatory letter 6. Collaboration with the design team 7. Preparing and formulating the design documentation for the constructional part 8. Drafting a demolition project for structures 9. Compiling usage and maintenance instructions for a facility 10. Performing designer’s supervision A.2.6 Designing port facilities 1. Compiling the design project for a port facility within the limits of competence provided by the occupational qualification level 2. Collecting and analysing source data 3. Selecting, calculating and dimensioning the scheme and type of load-bearing solutions 4. Compiling the explanatory letter 5. Collaboration with the design team 6. Preparing and formulating the design documentation for the constructional part 7. Drafting a demolition project for structures 8. Compiling usage and maintenance instructions for the facility 9. Performing designer’s supervision A.2.7 Geotechnical design 1. Geotechnical design within the limits of competence provided by the occupational qualification level 2. Conducting soil surveys 3. Calculating the overall stability and load-bearing capacity of excavation pits, slopes, earth embankments and trenches 4. Planning retaining and pile walls 5. Planning soil compaction, improvement and reinforcement

6. Determining the load-bearing capacity of piles
7. Geotechnical impact assessment of construction activities

A.2.8 Construction management
1. Management of construction activities within the limits of competence provided by the occupational qualification level
2. Compiling tenders
3. Planning construction activities
4. Planning construction resources
5. Organising subcontractor procurements and entering into contracts
6. Procuring construction supplies
7. Organising construction operations during construction
8. Organising quality control and surveying
9. Preparing construction site transfer documentation
10. Arranging the transfer of the construction site

A.2.9 Construction management
1. Construction management within the limits of competence provided by the occupational qualification level
2. Conducting needs assessment surveys
3. Preparing procurements and compiling procurement documentation
4. Planning the building life cycle
5. Performing construction cost calculations
6. Preparing design work and organising work
7. Selecting designers and preparing contracts
8. Preparing for construction work
9. Preparing tender documentation
10. Selecting subcontractors
11. Coordinating the construction process as the client's representative
12. Transferring the construction site and taking it into use
13. Warranty period procedures

A.2.10 Performing owner’s supervision
1. Performing owner’s supervision within the limits of competence provided by the occupational qualification level
2. Developing a supervision programme
3. Verifying the compliance of the construction project with requirements
4. Verifying the compliance of construction work with the contract
5. Performing and assessing quality control
6. Verifying compliance with safety requirements
7. Verifying required documentation
8. Accepting the building
9. Distributing information
10. Making proposals

A.2.11 Expert analysis of building projects
1. Conducting expert analysis of the building design documentation within the limits of competence provided by the occupational qualification level
2. Familiarising themselves with the project, collecting and analysing source data
3. Determining the volumetric accuracy of the design project
4. Determining the compliance of project solutions with their purpose and requirements
5. Compiling an expert analysis report

A.2.12 Building audits
1. Conducting facility audits within the limits of competence provided by the occupational qualification level
2. Familiarising themselves with the system, collecting and analysing source data
3. Organising additional studies and tests
4. Performing control calculations and additional measurements
5. Compiling an audit report

A.2.13 Geotechnical surveying 1. Performing geotechnical surveying within the limits of competence provided by the occupational qualification level 2. Conducting field studies 3. Compiling study reports A.2.14 Managing design 1. Conducting design management activities within the limits of competence provided by the occupational qualification level 2. Preparing the design contract 3. Assembling the design team 4. Organising the exchange of information 5. Coordinating design and managing quality 6. Organising designer’s supervision A.2.15 Construction cost estimation 1. Conducting cost and cost-benefit studies 2. Preparing the client's budget and cost planning 3. Preparing the cost section in construction tenders A.2.16 Training engineers and construction research 1. Conducting seminars and educational work 2. Compiling study and instructional materials 3. Conducting scientific or applied research
A.3 Work environment and specific nature of work
Civil engineers work both indoors and outdoors. The workload may be distributed unevenly.
A.4 Tools
In addition to conventional office equipment and software, special computing programmes and equipment (measuring and marking tools etc.) are used.
A.5 Personal qualities required for work: abilities and characteristics
Engineering requires analytical abilities, accuracy, spatial imagination, creativity, independence, decision-making, adaptability and communication, leadership and cooperation skills.
A.6 Professional preparation
A chartered engineer in general construction must hold at least a Master's degree or an equivalent five-year integrated higher education diploma in the field of construction within the meaning of Government of the Republic regulation no. 312 of 25 October 2004, 'Framework requirements for medical training, veterinary training, pharmacist training, dentistry training, midwifery training, nursing training, architectural studies and civil engineering studies'. In addition, vocational and professional work experience and in-service training are required in the prescribed amount according to the occupational qualification level being applied for. All requirements are specified in more detail in documentation on the procedure for granting the occupational qualification.
A.7 Most common occupational titles
designer, person performing owner’s supervision, construction manager, project manager and consultant
A.8 Regulations governing profession
Building Code and its relevant implementing acts Other professional standards, guidelines and norms

Part B
COMPETENCY REQUIREMENTS

B.1 Structure of occupation
Mandatory competence B.2.1, one competence connected to the specialisation from options B.2.2-B.2.4 and at least one of the optional competences from options B.2.5-B.2.16 must be certified when applying for the qualification of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8.

B.2 Competences

MANDATORY COMPETENCES

B.2.1 Mandatory competences of civil engineer	EstQF Level 7
1. Is guided in their work and occupational activities by generally accepted personal and occupational ethics (see Annex 1 – Engineer's professional ethics). Acts in accordance with agreements and takes responsibility for their decisions and actions. Respects and takes into account the best practice and standards underlying the behaviour of specialists in other occupational sectors. 2. Keeps up to date on technological changes and developments in the sector and contributes to the development of engineering culture directed at innovation and creativity, where possible. Maintains and develops occupational competence through constant self-improvement. Acquires new techniques and methodologies. 3. Actively contributes to teamwork in a result-oriented manner with the goal of achieving the best possible result. Is helpful and open, sharing knowledge and experience with their colleagues. Perceives their role in a team and is able to work in a multidisciplinary team. Leads and organises the work of working groups: delegates tasks and responsibility, verifies implementation of agreements, motivates and advises colleagues and solves problems and conflicts that may arise in the work process. 4. Is guided by the principles of environmental preservation and sustainable development, keeps up to date on and implements the principles of energy efficiency in their activities. 5. Implements knowledge of engineering on the level necessary to accomplish duties that are within the limits of their competence and to find functioning and optimal solutions to any problems that may occur. Possesses and uses to the necessary extent, in addition to the basics of natural sciences, professional disciplines of engineering, including architecture, engineering geology, soil mechanics, construction physics, statics, dynamics, strength of materials, structural mechanics, materials science, thermodynamics, concrete structures, metal structures, wooden structures, stone structures, hydrodynamics, wave theory and coastal processes. 6. Uses a computer for information processing, communication, safety, content creation and problem-solving at the Independent user level (see Annex 2 – Scale of self-assessment in digital competence). Uses the specialty-specific software solutions, programmes and information technology tools necessary for work. Uses Estonian in their work and in preparing documents at the B2 level (see Annex 3 – Language skills level descriptions) and at least one foreign language at the B1 level. Uses correct occupational terminology.	

COMPETENTCES RELATED TO SPECIALISATION

One competence connected to the specialisation from options B.2.2-B.2.4 must be certified when applying for the qualification of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8.

Building construction	
B.2.2 Building construction	**EstQF Level 8**
1. Leads and organises work related to the construction of buildings, bearing in mind the primary task and best practice in design and construction. Follows the requirements of applicable legislation and normative documents and agreements with the customer and partners. Takes into account other parties involved in the project and is aware of the impact of their own activities on their parts of the project.	

2. Verifies the high quality of the work done during construction according to the quality requirements established in the design documentation and other normative documents and instructions. 3. Is familiar with the specific nature of the activities of other parties involved in the project, understands the project as a whole, the place of their activities therein and the connections between the parties. Ensures that in the construction work performed in the general construction part of the design project, the complexity of the design project as a whole is kept in mind, and that during construction the work of other parties to the project which is being performed simultaneously is taken into consideration. 4. Plans their time and resources and does their best to transfer the completed works to the customer on time and in full. Formulates the necessary documentation according to specific requirements.

Harbour construction	
B.2.3 Harbour construction	**EstQF Level 8**
1. Leads and organises work related to harbour construction, bearing in mind the primary task and best practice in design and construction. Follows the requirements of applicable legislation and normative documents and agreements with the customer and partners. Takes into account other parties involved in the project and is aware of the impact of their own activities on their parts of the project. 2. Verifies the high quality of the work done during construction according to the quality requirements established in the design documentation and other normative documents and instructions. 3. Is familiar with the specific nature of the activities of other parties involved in the project, understands the project as a whole, the place of their activities therein and the connections between the parties. Ensures that in the construction work performed, the complexity of the harbour design project as a whole is kept in mind, and that during construction the work of other parties to the project which is being performed simultaneously is taken into consideration. 4. Plans their time and resources and does their best to transfer the completed works to the customer on time and in full. Formulates the necessary documentation according to specific requirements.	

Geotechnical engineering	
B.2.4 Geotechnical work	**EstQF Level 8**
1. Leads and organises geotechnical work, bearing in mind the primary task and best practice in design and construction. Follows the requirements of applicable legislation and normative documents and agreements with the customer and partners. Takes into account other parties involved in the project and is aware of the impact of their own activities on their parts of the project. 2. Verifies the high quality of the work done during construction according to the quality requirements established in the design documentation and other normative documents and instructions. 3. Is familiar with the specific nature of the activities of other parties involved in the project, understands the project as a whole, the place of their activities therein and the connections between the parties. Ensures that in the geodetic work performed, the complexity of the construction design project as a whole is kept in mind, and that during construction the work of other parties to the project being performed simultaneously is taken into consideration. 4. Plans their time and resources and does their best to transfer the completed works to the customer on time and in full. Formulates the necessary documentation according to specific requirements.	

OPTIONAL COMPETENCES

At least one of the optional competences from options B.2.5-B.2.16 must be certified when applying for the qualification of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8.

B.2.5 Preparing building design documentation	**EstQF Level 8**
1. Compiles construction projects for buildings according to the competence limits of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 listed in the description of occupational qualification standard A.1, i.e. without technical limits. 2. Collects and examines source data and determines applicable legal acts, standards, rules and instruction materials. Determines and analyses factors that have an impact on the building (e.g. constant and variable load,	

service life, environmental impact and conditions of foundation design). Prepares the terms of reference for additional surveys (e.g. geotechnical surveys), where necessary. 3. Chooses the superstructure and type (material) based on source data and calculates and dimensions load-bearing structures, the land on which the building stands and the foundations. Formulates calculation results. 4. Determines the solutions of barrier structures (both internal and external) based on source data (architecture, the intended purpose of the building, quality grade, lifespan, environmental impact, etc.) and the overall project. 5. Compiles an explanatory note according to the stage of design. 6. Collaborates with the parties involved in the project, participates in design and expert assessment meetings, etc. 7. Prepares the final design of the construction part (textual and graphic part) according to the stage of design. Compiles production drawings, where necessary (reinforced concrete, steel and timber elements). Is able to use building information modelling (BIM). 8. Prepares a demolition project for building structures, where necessary. 9. Where necessary, compiles instructions for the use and maintenance of the building in terms of building structures, bearing in mind the life span of the building. 10. Performs supervision during construction activities and provides consultation on project-related issues. Participates in the handover of the completed facility to the client, where necessary.
B.2.6 Designing port facilities **EstQF Level 8**
1. Compiles construction projects for port facilities according to the competence limits Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 listed in the description of occupational qualification standard A.1, i.e. without technical limits. 2. Collects and examines source data and determines applicable legal acts, standards, rules and instruction materials. Determines and analyses factors that have an impact on the facility (e.g. constant and variable load, service life, environmental impact and conditions of foundation design). Prepares the terms of reference for additional surveys (e.g. geotechnical surveys), where necessary. 3. Chooses the superstructure and type (material) of the facility based on source data and calculates and dimensions load-bearing structures, the land on which the facility stands and the foundations. Formulates calculation results. 4. Compiles an explanatory note according to the stage of design. 5. Collaborates with the parties involved in the project, participates in design and expert assessment meetings, etc. 6. Prepares the final design of the construction part (textual and graphic part) according to the stage of design. Compiles production drawings, where necessary (reinforced concrete, steel and timber elements). Is able to use building information modelling (BIM). 7. Prepares a demolition project for port facilities, where necessary. 8. Participates in compiling instructions for use and maintenance. 9. Where necessary, performs supervision during construction activities and provides consultation on project-related issues. Participates in the handover of the completed facility to the client, where necessary.
B.2.7 Geotechnical design **EstQF Level 8**
1. Performs geotechnical design work according to the competence limits of Chartered Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 listed in the description of occupational qualification standard A.1, i.e. without technical limits. 2. Prepares a programme for soil research. Describes the geological and hydrogeological conditions based on data from the soil research and makes proposals for the planning of the foundation solution. 3. Calculates the overall stability and load-bearing capacity of excavations, slopes, soil dams and embankments based on data from the soil research. 4. Conceptualises sheet piling and retaining walls for excavations, slopes, soil dams and embankments. 5. Makes proposals for ground consolidation needed for improvement and strengthening work on the basis of the soil research results and the requirements of the design project. 6. Determines the load-bearing capacity of a pile, considering data from geotechnical research and/or tests. 7. Assesses the geotechnical effects of construction activities on the immediate environment and buildings within the range of impact.
B.2.8 Managing construction **EstQF Level 8**
1. Leads construction activities according to the competence limits of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 listed in the description of occupational qualification standard A.1, i.e. without technical limits.

2. Examines design and procurement documentation and other relevant materials. Evaluates the volume of the tender based on the construction project and requests a quote for the necessary materials, equipment and subcontracting work. Determines potential administrative costs, profits and the level of risk and provides a tender. Completes and formulates the final tender.
3. Enters into the construction contract. Compiles a plan for work (incl. work safety measures and a work schedule) and a goal budget. Commissions the work project if no such project has been prepared.
4. Supplies the construction site with the necessary resources (mechanisms, materials, workforce, energy, etc.). Determines the tasks and extent of responsibility of each member of the site management team.
5. Arranges for the procurement of the necessary building materials, equipment, means of transport, construction mechanisms and contractors and enters into contracts.
6. Orders or creates product sketches, ensuring their compliance with construction norms and quality requirements. Procures and/or orders the necessary construction products, organises their reception and storage.
7. Organises and coordinates construction work in accordance with the goal budget of the project. Is able to use building information modelling (BIM). Ensures compliance with occupational health and safety requirements, environmental safety regulations and the general upkeep of the construction site. Constantly ensures the proper documentation of construction work (incl. acts of work to be covered), the compliance of construction work with the contract and design and the fulfilment of construction norms and quality requirements. Conducts construction consultations, where necessary.
8. Organises quality control to assess compliance with construction norms and quality requirements and the performance of the necessary surveying work before the transfer of the construction site.
9. Compiles or orders the documentation necessary for the transfer of the construction site, incl. performance sketches, documentation for equipment and materials and instructions for maintenance and use.
10. Arranges for the transfer of the construction site.

B.2.9 Construction management	**EstQF Level 8**

1. Leads construction activities according to the competence limits of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 listed in the description of occupational qualification standard A.1, i.e. without technical limits.
2. Carries out a needs assessment survey to clarify the source data of the project (intended layout, purpose of use, spatial programme, temporal and volumetric purpose of facility, requirements of project, etc.). Compiles the technical part of the project implementation decision based on the needs assessment survey.
3. Examines the initial conditions (construction surveys, technological solution, spatial programme, functional and operational quality requirements, energy balance, etc.) and prepares the procurement or compiles procurement documentation.
4. Compiles a schedule for construction work based on their technological processes.
5. Prepares a financial plan for construction work based on the estimated cost of construction, general and personalised cost calculations and time and payment schedules and taking into account the need for self-financing and the conditions presented in the procurement documentation.
6. Formulates the principles of carrying out the construction project and plans the organisational scheme of the project. Plans the necessary permit activities, prepares a schedule for carrying out the project and the division of project contractors. Compiles a design programme.
7. Selects designers and prepares design contracts.
8. Determines the principles of organisation of construction work incl. labour methods and distribution. Compiles the organisational scheme of construction work.
9. Formulates the time- and cost-related goals of construction work and prepares tender documentation based on these goals.
10. Selects the necessary contractors and enters into contracts with them if corresponding agreements have been made.
11. Coordinates construction work as a representative of the customer: communicates with contractors, the design team and the customer, holds meetings and discussions, exchanges information between the parties involved, processes additional work due to changes made to the project during construction work and monitors the compliance of the construction work with the design.
12. Carries out inspections. Plans and manages acceptance procedures, ensures the availability of necessary operating and maintenance instructions and other documentation and their handover to the client or user.
13. Conducts warranty-period procedures for buildings.

B.2.10 Performing owner's supervision	EstQF Level 8
1. Performs owner's supervision within the limits of competence of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 as listed in the A.1 description of work in the occupational qualification standard, i.e. without technical limitations. 2. Compiles a programme of supervision procedures, bearing in mind relevant legislation. 3. Assesses the compliance of the design documentation forming the basis for construction with applicable legislation and the construction design on the basis of which a construction permit was issued. 4. Monitors the compliance of construction activities with the conditions and quality agreed upon by the construction company and the owner of the building. 5. Monitors the compliance of the building or parts thereof under construction with the construction project and the compliance of work to be covered and as-built drawings with requirements, reality and the construction project. Is able to use building information modelling (BIM). Assesses whether the actual conditions of foundation design comply with the soil data or data from geotechnical research upon which the design project was based. 6. Monitors compliance with environmental and occupational safety and maintenance requirements in the area involving construction. 7. Verifies the existence of construction documents drafted during construction activities and their proper and timely drafting, presentation and revision. Monitors the validity of the documentation of the construction products, materials and equipment permanently installed in the facility and, on the basis of the submitted documents, the validity and compliance with the construction project of the construction product, materials and equipment. 8. Assesses the level of completion of buildings and participates in the transfer of buildings or their parts. 9. Notifies the relevant persons or agencies of any deficiencies identified in the course of owner supervision. 10. Proposes additional quality control, measurements, tests and expert analyses of construction work, where necessary.	
B.2.11 Expert analysis of building projects	**EstQF Level 8**
1. Provides expert analysis of building projects within the limits of competence of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 as listed in the A.1 description of work in the occupational qualification standard, i.e. without technical limitations. 2. Examines the construction project, determines applicable legislation, standards, rules and instruction materials. Verifies the compliance of the project with the primary task and the associated normative and instruction materials. Verifies the compliance of the people compiling the project with competence requirements. 3. Determines and analyses factors that have an impact on the building (e.g. constant and variable load, service life, environmental impact and conditions of foundation design). 4. Performs the necessary control calculations and/or verifies the calculations and calculation schemes of the designer, assessing the validity of the technical solutions implemented. Assesses whether the stability, safety and economy of the system or its parts presented in the project documentation serve the intended purpose. 5. Conducts expert analysis of design projects in accordance with legal requirements and participates in expert analysis meetings. Assesses the corrected design project, where necessary.	
B.2.12 Building audits	**EstQF Level 8**
1. Conducts building audits within the limits of competence of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 as listed in the A.1 description of work in the occupational qualification standard, i.e. without technical limitations. 2. Performs primary visual inspection, collects the information needed for the auditing of buildings (design documentation, surveys, research, photos, etc.). 3. Compiles a programme for and estimates the cost of further research and audits based on the goal and carries out or organises the carrying out of the necessary research and tests. 4. Examines existing and procured documents and additional research reports, performs the necessary control calculations and additional measurements. 5. Compiles an audit report in accordance with the goal of the audit and relevant legislation, wherein they assess whether the building is in accordance with the documentation for such a structure and is technically sound; for verification of use (whether using the building for its intended purpose and in the intended way is safe); and for documentation verification (whether documentation about the building and of its safe use and upkeep exists and meets the requirements). In the absence of such documents, determines and records the current situation and organises the drafting of the necessary documents.	

B.2.13 Geotechnical surveying	EstQF Level 8
1. Performs geotechnical surveying within the limits of competence of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 as listed in the A.1 description of work in the occupational qualification standard, i.e. without technical limitations. 2. Conducts field studies pertaining to site surveying. This includes taking soil samples, probing and penetrating the soil and conducting plate bearing tests. Conducts hydrogeological testing and measures and assesses the groundwater conditions. Conducts load tests on piles. 3. Draws up research reports: processes static data, draws up geological sections, etc. 4. Determines physical and mechanical parameters in laboratory conditions. Describes layers of soil and their properties and explains the test results in a geotechnical report. 5. Assesses settlement on the basis of field studies and laboratory tests. Predicts settlement change over time on the basis of geodetic surveys.	
B.2.14 Managing design	**EstQF Level 8**
1. Performs activities related to design management according to the competence limits of Chartered Civil Engineer in Buildings and Structures, EstQF Level 8 listed in the description of occupational qualification standard A.1, i.e. without technical limitations. 2. Collects and examines source data, determines applicable regulations, standards, rules and instruction materials. Estimates the amount and limits of work, prepares and clarifies the work schedule, where necessary, and prepares the design contract(s). 3. Assembles a design team, involving relevant contractors and specialists. 4. Organises and carries out design meetings, documents decisions and develops and establishes principles of information exchange. Is able to use building information modelling (BIM). 5. Leads and monitors the design process and solutions and verifies the integrity of the design documentation and the compatibility of its parts. Controls data exchange and collaboration between the general construction and other specialties involved in the project. Documents changes and additional work that occur in the course of design. Verifies the compliance of solutions with the primary task and contract and the compatibility between individual parts of the design documentation. Formulates the design documentation, applies for approval from the relevant authorities and arranges the transfer of the project to the customer. 6. Organises designer’s supervision during the construction process.	
B.2.15 Construction cost estimation	**EstQF Level 8**
1. Acquaints themselves with the primary task of the project and draws up target costs on the basis thereof. 2. Specifies and closely acquaints themselves with the source data of the project. Compares estimated costs of construction and use with target costs. Compares estimated costs of different parts of the building with target costs and compares the costs of the potential solutions for the construction project. 3. Closely acquaints themselves with and, where necessary, specifies procurement documents and considers the impact of the chosen technologies and methods, the work schedule and the organisation of the construction site on pricing. Calculates construction volumes. Requests, compares and analyses quotes for subcontracting, materials and equipment. Defines administrative costs and the risk level of construction. Bearing the above-mentioned factors in mind, calculates the offer price and compiles the construction tender.	
B.2.16 Training engineers and development work	**EstQF Level 8**
1. Compiles study programmes and organises teaching. Gives lectures, leads theoretical discussions and gives practical workshops. Supervises study projects and laboratory work. 2. Compiles study and instructional materials for the field. 3. Plans research activities and conducts or supervises research. Prepares and submits study reports and scientific articles, presenting the results of studies, where necessary.	

Part C
GENERAL INFORMATION AND ANNEXES

C.1 Information concerning compilation and certification of occupational qualification standard and reference to classification of occupations

1. ID of occupational qualification standard in register of occupational qualifications	22-14112023-4.6/12k
2. Occupational qualification standard compiled by:	Heiki Meos, EstKonsult OÜ Ants Raja, Ants Raja Ehituskorraldus FIE Andres Piirsalu, OÜ Entec Eesti Andres Piir, Projektbüroo KODA OÜ Peeter Parre, IB Aksiaal OÜ Aleksander Grünstam, Allux SG OÜ
3. Occupational qualification standard approved by:	Architecture, Geomatics, Construction and Real Estate
4. No. of decision of Sectoral Council	50
5. Date of decision of Sectoral Council	14.11.2023
6. Occupational qualification standard valid until	10.11.2025
7. Occupational qualification standard version no.	12
8. Reference to International Standard Classification of Occupations (ISCO 08)	2142 Civil Engineers
9. Reference to European Qualifications Framework (EQF)	8
C.2 Occupational title in foreign language	
English:	Chartered Civil Engineer in Buildings and Structures, EstQF Level 8
Finnish:	Rakennusinsinööri
Russian:	Инженер-строитель
C.3 Annexes	
Lisa 1 Engineer's Professional Ethics and Code Of Conduct	
Lisa 2 Scale of self-assessment in digital competence	
Lisa 3 Language skills level descriptions	