

1. TITLE OF THE CERTIFICATE - ET ⁽¹⁾

Diplomeeritud ehitusinsener, EKR tase 7

⁽¹⁾ In the original language

2. TRANSLATED TITLE OF THE CERTIFICATE ⁽¹⁾

Diploma Civil Engineer in Buildings and Structures, EstQF level 7

⁽¹⁾ If applicable. This translation has no legal status.

3. PROFILE OF SKILLS AND COMPETENCIES

Civil engineers act as specialists in designing, establishing, expanding and renovating buildings and facilities, as well as in demolishing and restoring buildings and facilities. In performing their professional duties, civil engineers give consideration to social, economic, environmental, occupational safety, occupational health and ethical aspects, and work with specialists in related fields.

Civil engineers specialise in one of three sub-specialities:

- a) Building¹ construction
- b) Harbour construction
- c) Geotechnical engineering²

In specialisation, at least one of the following occupations must be chosen.

- a) In building¹ construction:
 - Preparing building design documentation
 - Preparing design documentation for a building's glass façade
 - Preparing design documentation for a building's lightweight façade
 - Preparing roof design documentation
 - Preparing building design documentation for a log building
 - Construction activity management
 - Management of construction activities in glass façade construction
 - Management of construction activities in lightweight façade construction
 - Management of construction activities in roof construction
 - Management of construction activities in log building construction
 - Construction management
 - Owner supervision
 - Expert analysis of building design documentation
 - Building audit
 - Design management³
 - Construction cost estimation
- b) In harbour construction:
 - Designing port facilities
 - Construction activity management

^(*) Explanatory note

This document is designed to provide additional information about the specified certificate and does not have any legal status in itself. The format of the description is based on the following texts: Council Resolution 93/C 49/01 of 3 December 1992 on the transparency of qualifications, Council Resolution 96/C 224/04 of 15 July 1996 on the transparency of vocational training certificates, and Recommendation 2001/613/EC of the European Parliament and of the Council of 10 July 2001 on mobility within the Community for students, persons undergoing training, volunteers, teachers and trainers.

More information available at: <http://europass.cedefop.europa.eu/et/home>

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- Construction management
- Owner supervision
- Expert analysis of building design documentation
- Building audit
- Design management³
- Construction cost estimation

c) In geotechnical works:

- Geotechnical design
- Engineering geodetic surveys
- Construction activity management
- Construction management
- Owner supervision
- Expert analysis of building design documentation
- Building audit
- Design management³
- Construction cost estimation

Diploma civil engineer, Level 7 is a specialist who is responsible for their own performance and that of others in the work group they manage.

Diploma civil engineer, Level 7 professional qualification certificate entitles its holder, on a statutory basis, to act as a competent person independently and at his or her own risk within the limits described as follows.

I CONSTRUCTION OF BUILDING OR PORT FACILITY SUBJECT TO BUILDING PERMIT REQUIREMENT, GEOTECHNICAL WORKS, CONSTRUCTION MANAGEMENT

1. Construction of a building subject to building permit requirement

1.1 Constructing buildings with maximum height of 100 m above ground and maximum depth of 12 m and their constructions
Constructing log houses and envelope structures of buildings with the limitations above.

1.2 Construction of structures of geotechnical category up to 3#.

1.3 Constructing roads, lots and transport facilities not for public use.

1.4 Factory production of construction elements.

2. Construction of port facilities

2.1 Berths, seawalls, bank protections and breakwaters with water depth up to 19 m.

3. Geotechnical works

3.1 Leading geotechnical fieldwork

3.2 Data processing for geotechnical surveys of structures of geotechnical category# up to 3.

3.3 Construction of structures of geotechnical category# up to 3.

II PREPARATION OF BUILDING DESIGN DOCUMENTATION FOR BUILDING AND PORT FACILITY SUBJECT TO BUILDING PERMIT REQUIREMENT, GEOTECHNICAL DESIGN

1. Preparing the building design documentation for a building subject to building permit requirement

A structure of conventional construction with no major static or dynamic loads, up to 65 m above ground and up to 8 m in depth (except pile rafts).

Constructions with spans up to:

- monolithic concrete constructions up to 18 m

- prefabricated constructions up to 32 m

- steel constructions up to 36 m

- wooden constructions up to 18 m

- composite constructions up to 24 m

Designing log buildings and peripheral structures of buildings with the limitations above.

2. Designing port facilities

2.1 Berths, seawalls, bank protections and breakwaters with water depth up to 14 m.

2.2 Calculated wave height up to 3 m

2.3 Structures of geotechnical category# up to 2

3. Geotechnical design

3.1 Structures of geotechnical category# up to 2

III OWNER SUPERVISION

1. Building owner supervision

1.1 Constructing buildings with maximum height of 65 m above ground and maximum depth of 8 m and their constructions

1.2 Constructing structures of geotechnical category# up to 3

1.3 Constructing roads, lots and transport facilities
not for public use.

2. Port facility owner supervision

2.1 Berths, seawalls, bank protections and breakwaters with water depth up to 19 m

3. Owner supervision of geotechnical works

3.1 Leading geotechnical fieldwork

3.2 Data processing for geotechnical surveys of structures of geotechnical category# up to 3.

3.3 Constructing structures of geotechnical category# up to 3.

IV EXPERT ANALYSIS OF BUILDING DESIGN DOCUMENTATION

V BUILDING AUDIT

VI DESIGN MANAGEMENT³

Limitations are analogous to those applicable to the preparation of the building design documentation for a building and port facility subject to building permit requirement and geotechnical design.

VII CONSTRUCTION COST ESTIMATION

No technical limitations.

¹ - In the framework of civil engineers' standards, the word "building" refers to all land structures except bridges, tunnels, culverts, etc., which are part of the road construction industry

² - A qualification granted in geotechnical engineering, a sub-speciality of general construction, also provides the right to act as a level 7 competent person in road engineering and in geotechnical works in the speciality of utility systems of buildings in environmental engineering.

³ - design management refers to project management of the full design project, not that of specific areas of work

- EVS-NE 1997-1:2006 classification

A.2 Parts of work and tasks

MANDATORY COMPETENCE

1 Mandatory competencies in the occupation of civil engineer

- Following the requirements for professional ethics
- Professional self-education
- Participation in teamwork, team management
- Applying the principles of environmental protection and energy efficiency
- Applying specialized knowledge to work
- Digital competence and language skills

SPECIALISED COMPETENCIES

2 Building construction

- Conducting and organizing works within the scope of a given level of professional competence
- Quality control of completed works and their parts
- Determining the complex compliance/suitability of completed works
- Arranging the transfer of completed works to the client

3 Port construction

- Conducting and organizing works within the scope of a given level of professional competence
- Quality control of completed works and their parts
- Determining the complex compliance/suitability of completed works
- Arranging the transfer of completed works to the client

4 Geotechnical works

- Conducting and organizing works within the scope of a given level of professional competence
- Quality control of completed works and their parts
- Determining the complex compliance/suitability of completed works
- Arranging the transfer of completed works to the client

OPTIONAL COMPETENCIES

5 Preparing building design documentation

- Compiling the design project within the competence of the professional qualification level
- Collecting and analysing source data
- Selecting, calculating and dimensioning the scheme and type of load-bearing solutions
- Determining building enclosure solutions
- Compiling the explanatory letter
- Collaboration with the design team
- Preparing and formulating the design documentation for the structural part
- Preparing a demolition project for structures
- Preparing user manual and service manual for the building
- Conducting designer supervision

6 Preparing design documentation for a building's glass façade

- Designing a glass façade within the competence of the professional qualification level
- Collecting and analysing source data
- Selecting, calculating and dimensioning the scheme and type of load-bearing solutions
- Determining building enclosure solutions
- Compiling the explanatory letter
- Collaboration with the design team
- Preparing and formulating the design documentation for the structural part
- Preparing a demolition project for structures
- Preparing structure maintenance and operation instructions
- Conducting designer supervision

7 Preparing design documentation for a building's lightweight façade

- Designing a lightweight façade within the competence of the professional qualification level
- Collecting and analysing source data
- Selecting, calculating and dimensioning the scheme and type of load-bearing solutions
- Determining building enclosure solutions
- Compiling the explanatory letter
- Collaboration with the design team
- Preparing and formulating the design documentation for the structural part
- Preparing a demolition project for structures
- Preparing structure maintenance and operation instructions
- Conducting designer supervision

8 Preparing roof design documentation

- Designing a roof within the competence of the professional qualification level
- Collecting and analysing source data
- Selecting, calculating and dimensioning the scheme and type of load-bearing solutions
- Determining building enclosure solutions
- Compiling the explanatory letter
- Collaboration with the design team
- Preparing and formulating the design documentation for the structural part
- Preparing a demolition project for structures
- Preparing structure maintenance and operation instructions
- Conducting designer supervision

9 Preparing building design documentation for a log building

- Preparing the design documentation for a log building within the competence of the professional qualification level
- Collecting and analysing source data
- Selecting, calculating and dimensioning the scheme and type of load-bearing solutions
- Determining building enclosure solutions
- Compiling the explanatory letter
- Collaboration with the design team
- Preparing and formulating the design documentation for the structural part
- Preparing a demolition project for structures
- Preparing user manual and service manual for the building
- Conducting designer supervision

10 Designing port facilities

- Preparing the design documentation for a port facility within the competence of the professional qualification level
- Collecting and analysing source data
- Selecting, calculating and dimensioning the scheme and type of load-bearing solutions
- Compiling the explanatory letter
- Collaboration with the design team
- Preparing and formulating the design documentation for the structural part
- Preparing a demolition project for structures
- Preparing facility maintenance and operation instructions
- Conducting designer supervision

11 Geotechnical design

- Geotechnical design within the competence of the professional qualification level
- Conducting soil surveys
- Calculating the overall stability and bearing capacity of excavation pits, slopes, earth embankments and cuttings/trenches
- Planning retaining and pile walls
- Planning soil compaction, improvement and reinforcement
- Determining the load bearing capacity of piles
- Geotechnical impact assessment of construction activities

12 Management of construction activities

- Management of construction activity within the competence of the professional qualification level
- Compiling tenders
- Planning construction activities

- Planning construction resources
- Management of subcontractor procurements and conclusion of contracts
- Procurement of construction supplies
- Management of construction activities during the construction
- Organizing quality control and surveying
- Preparing the construction site handover documentation
- Arranging the handover of the construction site

13 Management of construction activities in glass façade construction

- Management of construction activities in glass façade construction within the competence of the professional qualification level
- Compiling tenders
- Planning construction activities
- Planning construction resources
- Management of subcontractor procurements and conclusion of contracts
- Procurement of construction supplies
- Management of construction activities during the construction
- Organizing quality control and surveying
- Preparing the construction site handover documentation
- Arranging the handover of the construction site

14 Management of construction activities in lightweight façade construction

- Management of construction activities in lightweight façade construction within the competence of the professional qualification level
- Compiling tenders
- Planning construction activities
- Planning construction resources
- Management of subcontractor procurements and conclusion of contracts
- Procurement of construction supplies
- Management of construction activities during the construction
- Organizing quality control and surveying
- Preparing the construction site handover documentation
- Arranging the handover of the construction site

15 Management of construction activities in roof construction

- Management of construction activities in roof construction within the competence of the professional qualification level
- Compiling tenders
- Planning construction activities
- Planning construction resources
- Management of subcontractor procurements and conclusion of contracts
- Procurement of construction supplies
- Management of construction activities during the construction
- Organizing quality control and surveying
- Preparing the construction site handover documentation
- Arranging the handover of the construction site

16 Management of construction activities in log building construction

- Management of construction activities in log building construction within the competence of the professional qualification level
- Compiling tenders
- Planning construction activities
- Planning construction resources
- Management of subcontractor procurements and conclusion of contracts
- Procurement of construction supplies
- Management of construction activities during the construction
- Organizing quality control and surveying
- Preparing the construction site handover documentation
- Arranging the handover of the construction site

17 Construction management

- Construction management within the competence of the professional qualification level
- Conducting needs assessment surveys
- Preparing procurements and compiling procurement documentation
- Planning the building life cycle
- Construction cost calculation
- Design work preparation and organisation
- Selecting designers and preparing contracts
- Construction work preparation
- Tender documentation preparation
- Subcontractor selection
- Co-ordinating the construction process as the client's representative
- Handover and implementation of the construction site
- Warranty period procedures

18 Owner supervision

- Performing owner supervision within the limits of competence provided by the profession standard
- Developing a monitoring programme
- Verifying requirement compliance of the design project
- Verifying contract compliance of the construction work
- Quality control and assessment
- Verifying compliance with safety requirements
- Verifying required documentation
- Receiving the building
- Information distribution
- Making proposals

19 Expert analysis of building design documentation

- Conducting expert analysis of the design project within the competence of the professional qualification level
- Familiarization with the project, collecting and analysing the source data
- Determining the volumetric accuracy of the design project
- Determining the compliance of project solutions with their purpose and requirements
- Compiling the expert analysis report

20 Facility audit

- Conducting facility audits within the competence of the professional qualification level
- Familiarization with the system, collecting and analysing the source data
- Organizing additional studies and tests
- Performing control calculations and additional measurements
- Compiling the audit report

21 Geotechnical site investigations

- Conducting geotechnical site investigations within the competence of the professional qualification level
- Conducting field studies
- Preparing study reports

22 Design management

- Conducting design management activities within the competence of the professional qualification level
- Preparing the design contract
- Assembling the design team
- Organizing the exchange of information
- Design coordination and quality management
- Arranging designer supervision

23 Construction cost estimation

- Conducting cost and cost-benefit studies
- Preparing the client's budget, cost planning
- Preparing the cost sections in tenders

4. RANGE OF OCCUPATIONS ACCESSIBLE TO THE HOLDER OF THE CERTIFICATE ⁽¹⁾

designer, person executing owner supervision, construction manager, site manager and consultant.

⁽¹⁾ If applicable

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
The occupational certificate that has been issued by the professional council that operates under the activity license issued by a Awarding Body	Sector Skills Council approved by a Regulation of the Government of the Republic
Level of the certificate (national or international)	Grading scale / Pass requirements
Estonian Qualification Framework level 7 European Qualification Framework level 7	passed/fail

Access to next level of education/training Chartered Civil Engineer in Buildings and Structures, EstQF level 8	International agreements
Legal basis Occupational Qualifications Act (RT I 2008, 24, 156; 01.09.2008)	

6. OFFICIALLY RECOGNISED WAYS OF ACQUIRING THE CERTIFICATE

In order to obtain a occupational certificate, the applicant has to prove all his/her competencies required by the occupational standard and by the procedure for awarding of occupational qualification established by the body awarding the occupational qualification

More information (including a description of the national qualifications system) available at:
www.kutsekoda.ee