

Ministry of the Environment guidelines on the qualification of building designers

YM2/601/2015

The Ministry of the Environment issues the following guidelines on the qualification of building designers. The guidelines shall be valid until further notice.

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Land Use and Building Act, Section 120 e(41/2014)

Qualification requirements for designers

A designer must be a natural person.

The following qualification requirements concern building designers and special designers:

- 1) in a difficult design task, a construction-related or technical university degree appropriate for the design task in question, or an earlier construction-related higher-level vocational or other equivalent degree, and at least four years of experience of working on conventional design tasks and at least two years of experience of assisting in difficult design tasks;
- 2) in a conventional design task, a construction-related or technical degree appropriate for the design task in question, equivalent to an earlier technician's or other equivalent degree, and at least three years of experience of assisting in design tasks that are at least conventional in terms of difficulty;
- 3) in a minor design task, the skill required in view of the type and extent of the construction project or design task.

The qualification requirement for building designers and special designers in exceptionally difficult design tasks is a construction-related or technical university master's degree appropriate for the design task in question, and at least six years of experience of difficult design tasks.

The principal designer must meet the qualification requirements for building designers or special designers, at least at the highest level difficulty class of the design tasks included in the construction project. Furthermore, the principal designers must have sufficient expertise and the professional skill required to manage the coordination of the plans.

Most of the experience required in subsections 2 and 3 must have been obtained in design tasks in the field in question. The designer of repair or alteration works must have experience of design tasks for repair or alteration works.

GENERAL INSTRUCTIONS

These guidelines refer to section 120 e of the Land Use and Building Act. The guidelines concern the qualifications of building designers in the main fields of design in construction:

- *building design*
- *design of load-bearing structures*
- *design of foundation structures*
- *ventilation design*
- *water supply and sewage design*
- *building physics design*
- *design of repair work to moisture damage.*

These guidelines are not binding. The purpose of the guidelines is to support the uniform application of the Act.

In the tables, credits are given as ECTS credit points (according to the European Credit Transfer System). If earlier studies have been completed in credit units, they can be converted to credit points by multiplying them by 1.5.

As regards university degrees completed abroad, the decision on whether the degree corresponds to a higher or lower level degree, for example, is made by the Finnish National Board of Education. The decision by the Finnish National Board of Education does not take a stand on the relevance of the field or content of the degree for the fulfilment of the requirements, instead such decisions are made by the building supervision authority.

Regulations on the difficulty classes of design tasks are enacted in section 120 d of the Land Use and Building Act, and the Decree on the determination of difficulty classes of building design tasks issued under it. The Ministry of the Environment guidelines on the difficulty classes of building design tasks are related to these guidelines (YM1/601/2015).

Building design			
<i>Minor design task</i>	<i>Conventional design task</i>	<i>Difficult design task</i>	<i>Exceptionally difficult design task</i>
Sufficient expertise for the design task in question.	<p>Has successfully completed at least the qualification of technician (master builder)¹ in the field of housing construction, or the degree of bachelor of science in technology (180 credits), and the degree included at least 90 credit points of studies related to building design and construction technics, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • housing design • construction engineering and structural engineering • technical systems of the building. <p>In a conventional building design task for repair and alteration work to the interiors of a building, the designer can also be a person who has successfully completed the qualification of designer at a university of applied sciences, including at least 90 credit points of studies in spatial planning and interior design.</p>	<p>Has successfully completed the degree of architect, a higher-level degree in building design at a university of applied sciences, the qualification of construction architect (at a university of applied sciences) or construction architect (at a technical college)², and the degree or the supplementary studies have included at least 120 credit points of studies related to building design and architecture, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • history and theory of architecture • design of public buildings and service buildings • construction engineering and structural engineering • housing design <p>In a difficult building design task of repair and alteration work to the interiors of a building, the designer can also be a person who has successfully completed the degree of master of arts or interior designer, if the degree has included at least 120 credit points of studies in spatial planning and interior design.</p>	<p>Has successfully completed the qualification of architect or a higher-level degree at a university of applied sciences in building design, and the degree or the supplementary studies have included at least 150 credit points of studies dealing with building design and architecture, including courses in the following fields (or other similar fields):</p> <ul style="list-style-type: none"> • history and theory of architecture • design of public buildings and service buildings • construction engineering and structural engineering • housing design
	AND	AND	AND
	<p>Has at least three years of experience of assisting in building design tasks.</p> <p>In the case of a designer of repair and alteration work, at least one year of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>Has at least four years of experience of working on conventional design tasks and at least two years of experience of assisting in difficult design tasks.</p> <p>The experience can include both assisting in design tasks belonging to different difficulty classes and acting as the responsible designer in conventional design tasks.</p> <p>In the case of a designer of repair and alteration work, at least two years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>Has at least six years of experience of difficult building design tasks.</p> <p>The experience can include both assisting in difficult and exceptionally difficult design tasks, and acting as the responsible designer in difficult design tasks.</p> <p>In the case of a designer of repair and alteration work, at least three years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>The experience must have been obtained after graduation.</p>

1) The qualification of civil engineer in the field of housing construction is also included in this category.

2) The qualification of civil engineer in the field of building design completed before the start of the construction architecture degree programmes (before 1972) is also comparable to these degrees, or the qualification of civil engineer in the field of building design from a university of applied sciences, completed immediately after the termination of the degree programmes in construction architecture (between 2000 and 2006).

Design of load-bearing structures				
Minor design task	Conventional design task	Difficult design task	Exceptionally difficult design task	
Sufficient expertise for the design task in question.	Has successfully completed at least the qualification of technician in the field of building technology, building production or mechanical engineering, or has completed the degree of bachelor of science in technology (180 credits), and the degree or supplementary studies have included at least 30 credit points of studies related to structural engineering and the design and function of the structures in question, including courses in the following fields (or other equivalent fields):	Has successfully completed the degree of master of science in technology, master of engineering (at a university of applied sciences), or bachelor of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, or an engineering degree in the field of building technology or mechanical engineering, and the degree or supplementary studies have included at least 40 credit points of studies related to structural engineering and the design and function of the structures in question, including courses in the following fields (or other equivalent fields):	Has successfully completed the degree of master of science in technology or master of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, and the degree or supplementary studies have included at least 45 credit points of studies related to structural engineering and the design and function of the structures in question, including courses in the following fields (or other equivalent fields):	
	<ul style="list-style-type: none"> • structural mechanics and structural design • materials and manufacturing engineering • studies listed under the structural material in question. 	<ul style="list-style-type: none"> • structural mechanics and structural design • materials and manufacturing engineering • studies listed under the structural material in question. 	<ul style="list-style-type: none"> • structural mechanics and structural design • material and manufacturing engineering and material models • studies listed under the structural material in question. 	
	<i>Concrete structures</i>			
	<ul style="list-style-type: none"> • design of concrete structures and concrete building. 	<ul style="list-style-type: none"> • design of concrete structures and concrete building. 	<ul style="list-style-type: none"> • design of concrete structures and concrete building • design of prestressed structures 	
	<i>Steel structures</i>			
	<ul style="list-style-type: none"> • design of steel structures and steel building 	<ul style="list-style-type: none"> • design of steel structures and steel building 	<ul style="list-style-type: none"> • design of steel structures and steel building 	
	<i>Aluminium structures</i>			
		Studies such as those listed under steel structures	Studies such as those listed under steel structures	
	<i>Timber structures</i>			
	<ul style="list-style-type: none"> • design of timber structures and timber building 	<ul style="list-style-type: none"> • design of timber structures and timber building • timber product technology 	<ul style="list-style-type: none"> • design of timber structures and timber building • timber product technology 	
	<i>Masonry structures</i>			
	<ul style="list-style-type: none"> • design of concrete structures and concrete building • design of masonry structures 	<ul style="list-style-type: none"> • design of concrete structures and concrete building • design of masonry structures 	<ul style="list-style-type: none"> • design of concrete structures and concrete building • design of masonry structures 	
	<i>Composite structures</i>			
		Studies required for difficult design tasks for the materials in question, and experience of composite structures.	Studies required for difficult design tasks for the materials in question and for an exceptionally difficult design task for one of the materials, and experience of composite structures.	
	AND	AND	AND	
Has at least three years of experience of assisting in design	Has at least four years of experience of working on	Has at least six years of experience of difficult design tasks for load-		

	<p>tasks for load-bearing structures, including design tasks for the load-bearing structures in question.</p> <p>In the case of a designer of repair and alteration work, at least one year of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>conventional design tasks for load-bearing structures and at least two years of experience of assisting in difficult design tasks, including design tasks for the load-bearing structures in question.</p> <p>The experience can include both assisting in design tasks belonging to different difficulty classes and acting as the responsible designer in conventional design tasks.</p> <p>In the case of a designer of repair and alteration work, at least two years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>bearing structures, including design tasks for the load-bearing structures in question.</p> <p>The experience can include both assisting in difficult and exceptionally difficult design tasks, and acting as the responsible designer in difficult design tasks.</p> <p>In the case of a designer of repair and alteration work, at least three years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>The experience must have been obtained after graduation.</p>
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Design of foundation structures			
Minor design task	Conventional design task	Difficult design task	Exceptionally difficult design task
	<p>Has successfully completed the qualification of technician in the field of building technology or building production, or has completed the degree of bachelor of science in technology (180 credits), and the degree or supplementary studies have included at least 30 credit points of studies related to the design and function of foundation structures and structural engineering, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • soil mechanics and foundation engineering • structural mechanics and structural design. 	<p>Has successfully completed the degree of master of science in technology, master of engineering (at a university of applied sciences), or bachelor of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, or an engineering degree in the field of civil engineering, and the degree or supplementary studies have included at least 40 credit points of studies related to the design and function of foundation structures and structural engineering, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • soil mechanics, foundation engineering and soil engineering • structural mechanics and structural design. 	<p>Has successfully completed the degree of master of science in technology, master of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, and the degree or supplementary studies have included at least 45 credit points of studies related to the design and function of foundation structures and structural engineering, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • soil mechanics, foundation engineering and soil engineering • structural mechanics and structural design.
	AND	AND	AND
	<p>Has at least three years of experience of assisting in design tasks for foundation structures.</p> <p>In the case of a designer of repair and alteration work, at least one year of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>Has at least four years of experience of working on conventional design tasks for foundation structures and at least two years of experience of assisting in difficult design tasks for foundation structures.</p> <p>The experience can include both assisting in design tasks belonging to different difficulty classes and acting as the responsible designer in conventional design tasks.</p> <p>In the case of a designer of repair and alteration work, at least two years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>Has at least six years of experience of difficult design tasks for foundation structures.</p> <p>The experience can include both assisting in difficult and exceptionally difficult design tasks, and acting as the responsible designer in difficult design tasks.</p> <p>In the case of a designer of repair and alteration work, at least three years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>The experience must have been obtained after graduation.</p>

Ventilation design			
Minor design task	Conventional design task	Difficult design task	Exceptionally difficult design task
<p>Sufficient expertise for the design task in question.</p>	<p>Has successfully completed the qualification of HVAC technician, or has completed the degree of bachelor of science in technology (180 credits), and the degree or supplementary studies have included at least 30 credit points of studies related to ventilation, air conditioning and other HVAC engineering, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • ventilation and air conditioning engineering • heating and energy consumption engineering • control theory • HVAC design • dimensioning and documentation of HVAC systems. 	<p>Has successfully completed the degree of master of science in technology, master of engineering (at a university of applied sciences), or bachelor of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, or an engineering degree in the field of HVAC engineering, building technology or mechanical engineering, and the degree or supplementary studies have included at least 40 credit points of studies related to ventilation, air conditioning and other HVAC engineering, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • ventilation and air conditioning engineering and indoor climate • heating and energy consumption engineering • cooling engineering • heat transfer and fluid mechanics • control theory and building automation • HVAC design • dimensioning and documentation of HVAC systems. 	<p>Has successfully completed the degree of master of science in technology or master of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, and the degree or supplementary studies have included at least 45 credit points of studies related to ventilation, air conditioning and other HVAC engineering, including courses in the following fields (or other similar fields):</p> <ul style="list-style-type: none"> • ventilation and air conditioning engineering and indoor climate • heating and energy consumption engineering • cooling engineering • heat transfer and fluid mechanics • control theory and building automation • HVAC design • dimensioning and documentation of HVAC systems.
	AND	AND	AND
	<p>Has at least three years of experience of assisting in ventilation design tasks.</p> <p>In the case of a designer of repair and alteration work, at least one year of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>Has at least four years of experience of working on conventional ventilation design tasks and at least two years of experience of assisting in difficult ventilation design tasks.</p> <p>The experience can include both assisting in design tasks belonging to different difficulty classes and acting as the responsible designer in conventional design tasks.</p> <p>In the case of a designer of repair and alteration work, at least two years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>Has at least six years of experience of difficult ventilation design tasks.</p> <p>The experience can include both assisting in difficult and exceptionally difficult design tasks, and acting as the responsible designer in difficult design tasks.</p> <p>In the case of a designer of repair and alteration work, at least three years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>The experience must have been obtained after graduation.</p>

Water supply and sewage design			
<i>Minor design task</i>	<i>Conventional design task</i>	<i>Difficult design task</i>	<i>Exceptionally difficult design task</i>
<p>Sufficient expertise for the design task in question.</p>	<p>Has successfully completed the qualification of HVAC technician, or has completed the degree of bachelor of science in technology (180 credits), and the degree or supplementary studies have included at least 30 credit points of studies related to water supply and sewage engineering and other HVAC engineering, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • water supply and sewage engineering • HVAC design • dimensioning and documentation of HVAC systems. 	<p>Has successfully completed the degree of master of science in technology, master of engineering (at a university of applied sciences), or bachelor of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, or an engineering degree in the field of HVAC engineering, building technology or mechanical engineering, and the degree or supplementary studies have included at least 40 credit points of studies related to water supply and sewage engineering and other HVAC engineering, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • water supply and sewage engineering • fluid mechanics • control theory • HVAC design • dimensioning and documentation of HVAC systems. 	<p>Has successfully completed the degree of master of science in technology or master of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, and the degree or supplementary studies have included at least 45 credit points of studies related to water supply and sewage engineering and other HVAC engineering, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • water supply and sewage engineering • fluid mechanics • control theory • HVAC design • dimensioning and documentation of HVAC systems.
	AND	AND	AND
	<p>Has at least three years of experience of assisting in water supply and sewage design tasks.</p> <p>In the case of a designer of repair and alteration work, at least one year of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>Has at least four years of experience of working on conventional water supply and sewage design tasks and at least two years of experience of assisting in difficult water supply and sewage design tasks.</p> <p>The experience can include both assisting in design tasks belonging to different difficulty classes and acting as the responsible designer in conventional design tasks.</p> <p>In the case of a designer of repair and alteration work, at least two years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>Has at least six years of experience of difficult water supply and sewage design tasks.</p> <p>The experience can include both assisting in difficult and exceptionally difficult design tasks, and acting as the responsible designer in difficult design tasks.</p> <p>In the case of a designer of repair and alteration work, at least three years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>The experience must have been obtained after graduation.</p>

Building physics design					
Minor design task	Conventional design task	Difficult design task	Exceptionally difficult design task		
	<p>Has completed at least the qualification of technician in the field of building technology, building production or mechanical engineering, or has completed the degree of bachelor of science in technology (180 credits), and the degree or supplementary studies have included at least 20 credit points of studies related to building physics, structural engineering and material technology, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • building physics • structural engineering and structural design • material technology • building engineering systems 	<p>Has successfully completed the degree of master of science in technology, master of engineering (at a university of applied sciences), or bachelor of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, or an engineering degree in the field of building technology or mechanical engineering¹⁾, and the degree or supplementary studies have included at least 30 credit points of studies related to building physics, structural engineering, material technology and the building physics field in question, including courses in the following fields (or other similar fields):</p> <ul style="list-style-type: none"> • building physics • structural engineering and structural design • materials and manufacturing engineering • building engineering systems • the studies listed under the field of building physics in question. 	<p>Has successfully completed the degree of master of science in technology or master of engineering (at a university of applied sciences)²⁾ in the field of building technology or another appropriate field, and the degree or supplementary studies have included at least 35 credit points of studies related to building physics, structural engineering, material technology and the building physics field in question, including courses in the following fields (or other similar fields):</p> <ul style="list-style-type: none"> • building physics • structural engineering and structural design • materials and manufacturing engineering • building engineering systems • the studies listed under the field of building physics in question. 		
				<i>Heat and moisture engineering</i>	
				• heat and moisture insulation	• heat and moisture insulation
				<i>Sound engineering</i>	
				• structural sound and vibration engineering design • room acoustics and building acoustics	• structural sound and vibration engineering design • room acoustics and building acoustics
AND	AND	AND			
	<p>Has at least three years of experience of assisting in building physics design tasks.</p> <p>In the case of a designer of repair and alteration work, at least one year of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the experience must have been obtained after graduation.</p>	<p>Has at least four years of experience of working on conventional building physics design tasks and at least two years of experience of assisting in difficult design tasks, including design tasks in the building physics field in question.</p> <p>The experience can include both assisting in design tasks belonging to different difficulty classes and acting as the responsible designer in conventional design tasks.</p> <p>In the case of a designer of repair and alteration work, at least two years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>Most of the required experience must have been obtained after graduation.</p>	<p>Has at least six years of experience of difficult building physics design tasks, including design tasks in the building physics field in question.</p> <p>The experience can include both assisting in difficult and exceptionally difficult design tasks, and acting as the responsible designer in difficult design tasks.</p> <p>In the case of a designer of repair and alteration work, at least three years of the experience must have been obtained in design tasks for repair or alteration works.</p> <p>The experience must have been obtained after graduation.</p>		

1) In sound engineering, the degree of architect, a higher degree level qualification in building design from a university of applied sciences, the degree of construction architect (from a university of applied sciences) and the degree of construction architect (from a technical college) are also comparable to these qualifications.

2) In sound engineering, the degree of architect and a higher degree level qualification in building design from a university of applied sciences are also comparable to these qualifications.

Design of repair work to moisture damage			
Minor design task	Conventional design task	Difficult design task	Exceptionally difficult design task
	<p>Has completed at least the qualification of technician in the field of building technology or another appropriate field, or has completed the degree of bachelor of science in technology (180 credits), and the degree or supplementary studies have included at least 20 credit points of studies related to building physics and the design and function of the structures in question, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • building physics • structural engineering and structural design • material technology • building engineering systems 	<p>Has successfully completed the degree of master of science in technology, master of engineering (at a university of applied sciences), or bachelor of engineering (at a university of applied sciences) in the field of building technology or another appropriate field, or an engineering degree in another appropriate field¹⁾, and the degree or supplementary studies have included at least 30 credit points of studies related to building physics, the design and function of the structures in question and repair work, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • building physics • structural engineering and structural design • materials and manufacturing engineering • building engineering systems • indoor environments • technical consultancy methods. 	<p>Has successfully completed the degree of master of science in technology or master of engineering (at a university of applied sciences)²⁾, in the field of building technology or another appropriate field, and the degree or supplementary studies have included at least 35 credit points of studies related to building physics, the design and function of the structures in question and repair work, including courses in the following fields (or other equivalent fields):</p> <ul style="list-style-type: none"> • building physics • structural engineering and structural design • materials and manufacturing engineering • building engineering systems • indoor environments • technical consultancy methods.
	AND	AND	AND
	<p>Has at least three years of experience of assisting in design tasks for repair work.</p> <p>At least one year of the experience must have been obtained in design tasks for repair work to moisture damage.</p> <p>Most of the required experience must have been obtained after graduation.</p>	<p>Has at least four years of experience of working on conventional design tasks for repair work and at least two years of experience of assisting in difficult design tasks for repair work.</p> <p>The experience can include both assisting in design tasks belonging to different difficulty classes and acting as the responsible designer in conventional design tasks.</p> <p>At least two years of the experience must have been obtained in design tasks for repair work to moisture damage.</p> <p>Most of the required experience must have been obtained after graduation.</p>	<p>Has at least six years of experience of difficult design tasks for repair work.</p> <p>The experience can include both assisting in difficult and exceptionally difficult design tasks, and acting as the responsible designer in difficult design tasks.</p> <p>At least three years of the experience must have been obtained in design tasks for repair work to moisture damage.</p> <p>The experience must have been obtained after graduation.</p>

1) The degree of architect, a higher degree level qualification in building design from a university of applied sciences, the degree of construction architect (from a university of applied sciences) and the degree of construction architect (from a technical college) are also comparable to these qualifications.

2) The degree of architect and a higher degree level qualification in building design from a university of applied sciences are also comparable to these qualifications.