



INNOVATIVE QUALIFICATIONS FOR TECHNOLOGICAL AND  
ORGANIZATIONAL INNOVATION IN BUILDING SECTOR

## **D3.3 –Valorisation and multiplication of the renovated qualification “Construction site Technician”**

WP3 – Implementation and update of the common qualification “Construction Site Technician”.

WP Leader: FLC

Date: 10/02/2021

Version: 1

Nature: Report | Diss. level: PU (Public)

Co-funded by the  
Erasmus+ Programme  
of the European Union



KA3 - Support for Policy Reform

Joint Qualifications in Vocational Education and Training (VET)

PROJECT CODE: N. 597840-EPP-1 2018-1-IT-EPPKA3-VET-JQ

Project duration: from 15/12/2018 to 14/12/2020

**LEADER**

FORMEDIL (Italy)

**PARTNERS**

Fundación Laboral de la Construcción (Spain)

FLC Asturias (Spain)

VSRC Vilnius (Lithuania)

Panevezys CCIC (Lithuania)

Conseil des Architectes d'Europe (Belgium)

Alma Mather Studiorum UNIBO (Italy)

IIPLE Bologna (Italy)

The content of this page is the sole responsibility of the organisers of the initiatives. The texts exclusively reflect the authors' opinions and cannot be attributed in any way to the European Commission. The Commission cannot be held responsible for the use that might be made of the information contained herein.

## DOCUMENT INFORMATION

Project Number	N. 597840-EPP-1 2018-1-IT-EPPKA3-VET-JQ	Acronym	ICARO
Full title	Innovative qualifications for technological and organizational innovation in building sector		
Project URL	www.icaroproject.eu		

Deliverable number: 3.3.	Title	Valorisation and multiplication of the renovated qualification "Construction site Technician"
Work package number: 3	Title	Implementation and update of the common qualification "Construction Site Technician"

Delivery date			
Status	Version:	Draft <input type="checkbox"/> Final	
Type	Internal Deliverable <input type="checkbox"/> Official Deliverable <input checked="" type="checkbox"/>		
Nature	ORDP <input type="checkbox"/> Report <input checked="" type="checkbox"/> Websites <input type="checkbox"/> Ethics <input type="checkbox"/>		
Dissemination Level	Public <input checked="" type="checkbox"/> Restricted (other E+) <input type="checkbox"/> Confidential (Consortium) <input type="checkbox"/>		

Project Coordinator	Rossella Martino	Email	<a href="mailto:rossella.martino@formedil.it">rossella.martino@formedil.it</a>
Partner	FORMEDIL	Phone	<b>+39 0685261797</b>

Authors (Partner)	Laura Mesa, Beatriz Oliete – Fundación Laboral de la Construcción (FLC)		
Responsible partner	Laura Mesa	Email	<a href="mailto:simona.tondelli@unibo.it">simona.tondelli@unibo.it</a>
	Organisation	FLC	Phone

Description of the deliverable (3-5 lines)	This report provides an in-dept analysis of the survey results distributed to the stakeholders of the Construction Sector in order to validate the Construction Site Technician qualification that is being developed within the ICARO framework.
Key words	Construction sector, building sector, innovations.

## DOCUMENT HISTORY

NAME	DATE	VERSION	DESCRIPTION
D3.3_ICARO_v1	9/02/21	1.0	Draft version
D3.3_ICARO_v2	3/03/21	2.0	Final version

## Index

Introduction.....	5
1. General Questions.....	6
2. Analysis of the qualification.....	8
2.1. Italy.....	9
1. General comments on Qualification description: .....	9
2. Comments and modifications per unit and competence: .....	9
3. Further comments.....	10
2.2. Lithuania.....	11
1. General comments on Qualification description: .....	11
2. Comments and modifications per unit and competence: .....	11
3. Further comments.....	12
2.3. Spain .....	12
1. General comments on the Qualification description .....	12
2. Comments and modifications per unit and competence: .....	12
3. Further comments.....	15
Other comments made by Spanish stakeholders: .....	15
3. Conclusions .....	15

## Introduction

A “multiplier” event was to be organised in conjunction with one project meeting aiming at analysing changes in qualifications, contractual obligations and new profiles that offers professional skills to the construction industry in EU Countries through the participation of full project partners and associated partners, involving also other stakeholders (i.e. members of the REFORME networks and ILO branch). The main aim of the seminar was to collect feedback from the main stakeholders in the construction sector at EU level to include their vision in the new curricula in an open participatory process.

Due to the pandemic situation, the presential event had to be cancel and replaced by an online transnational survey in order to gather relevant stakeholders opinions on the curricula and analyse their feedback.

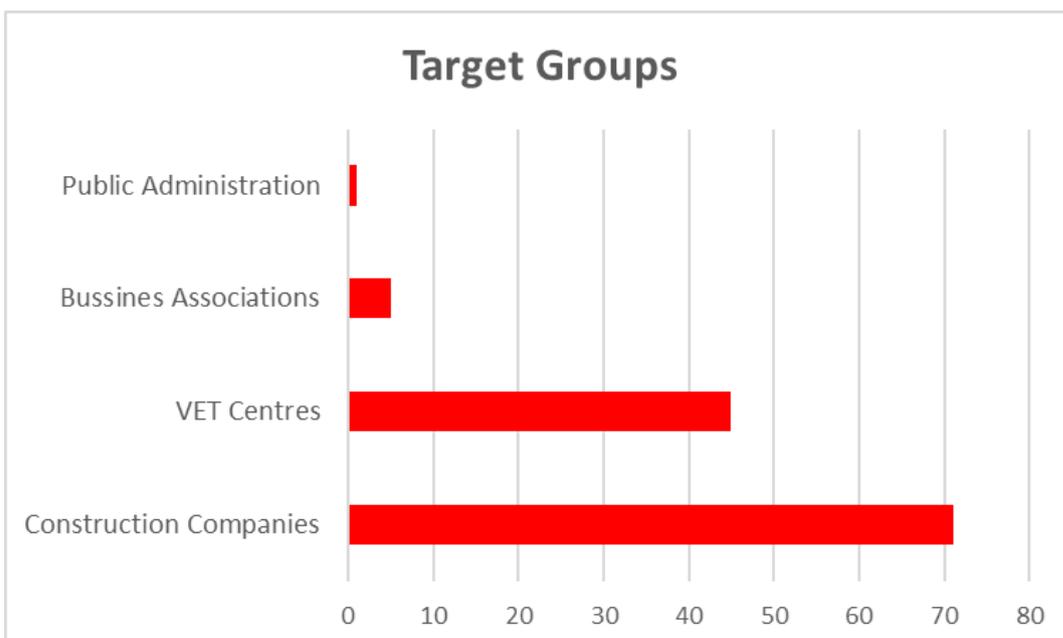
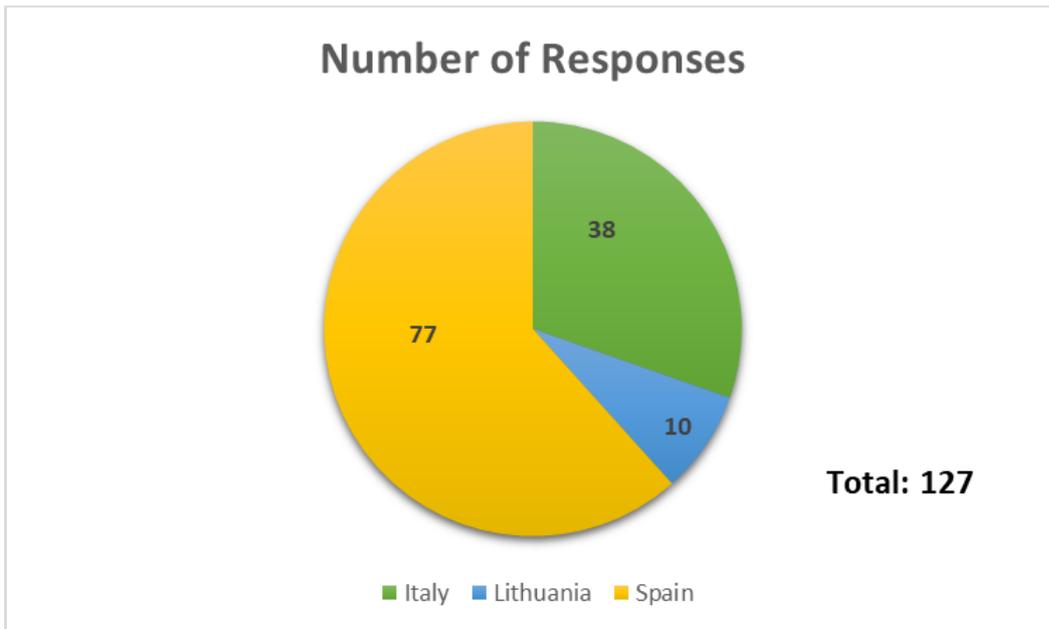
The survey consisted of a general description of the qualification and 60 questions regarding each unit and the competences within the units. Also, a section with general questions for the respondents was included in order to group them.

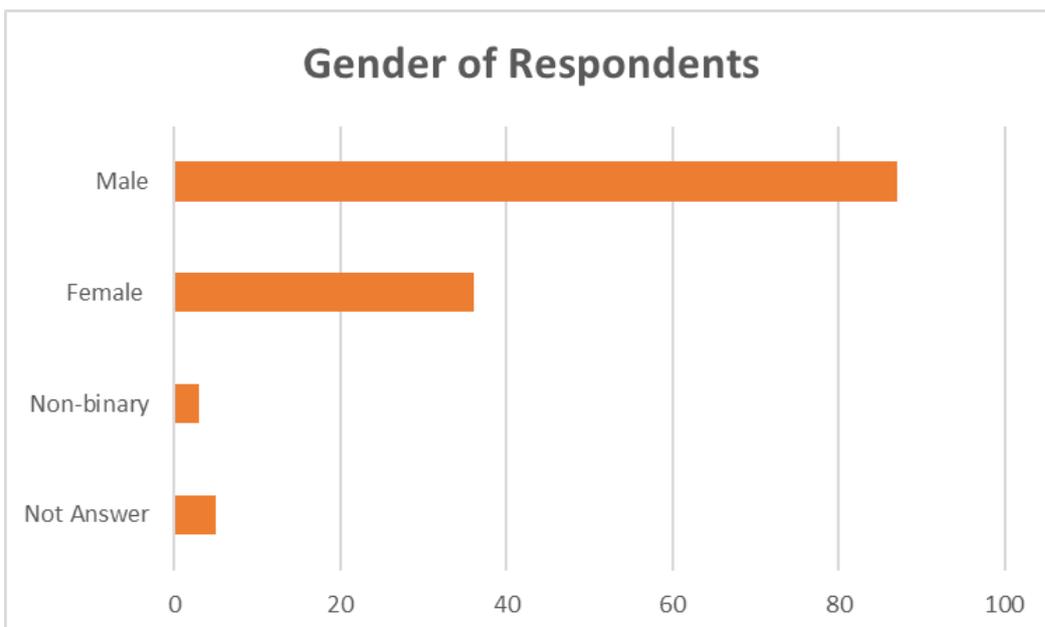
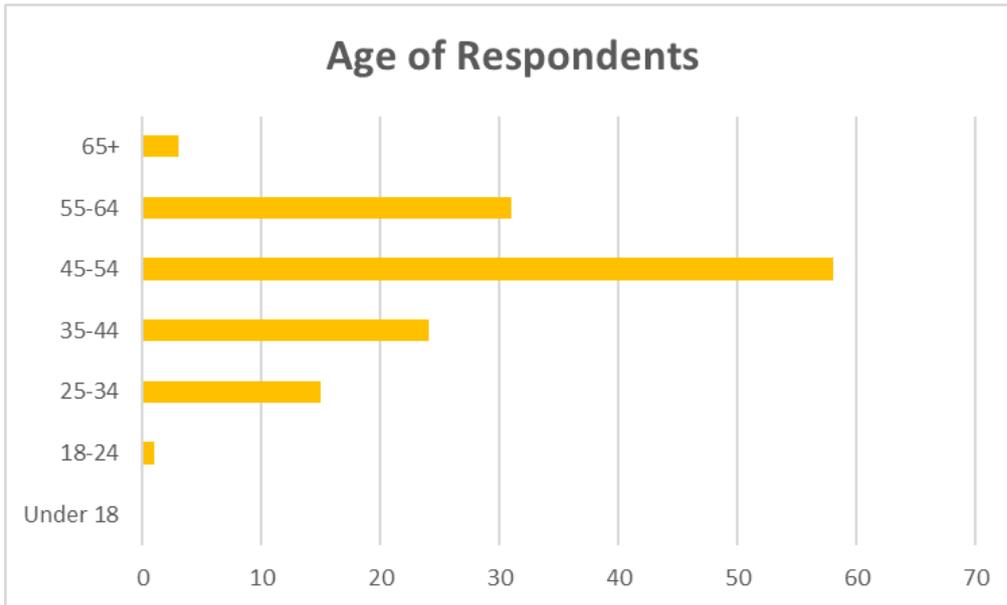
This report summarizes the results of the transnational survey and includes the input gained from the stakeholders. It also provides indications and recommendations for the reformulation of the curricula.

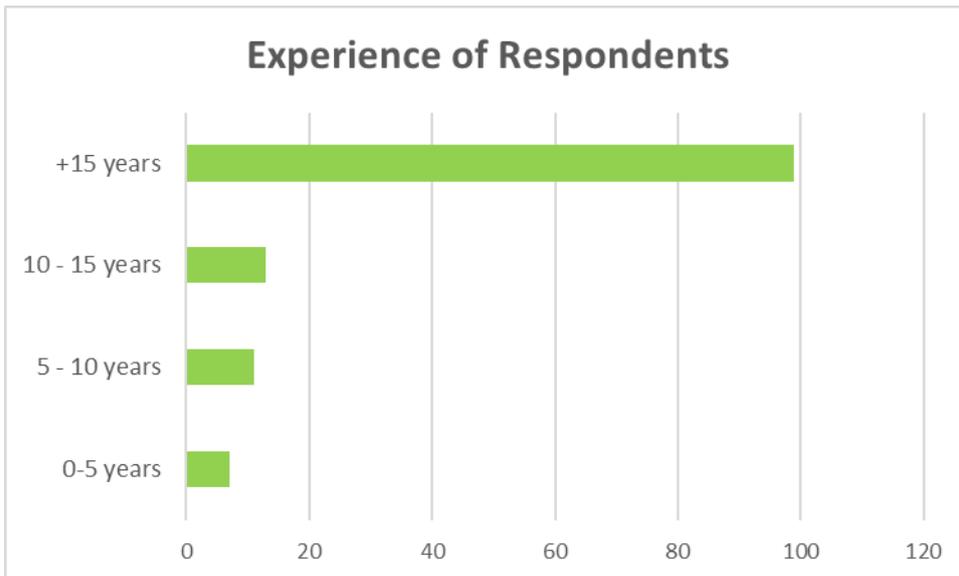
## 1. General Questions

Under this section, general questions regarding respondents' profile will be analysed. The main aspects under evaluation are:

- Total number of responses received per country.
- Target groups within the Construction Sector that participated.
- Age/ gender and years of experience working in the sector.

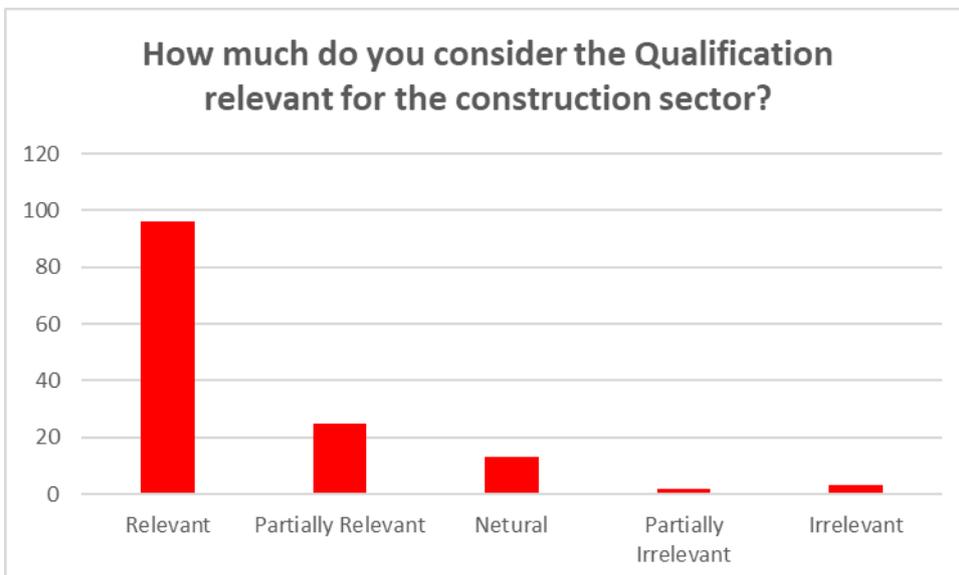


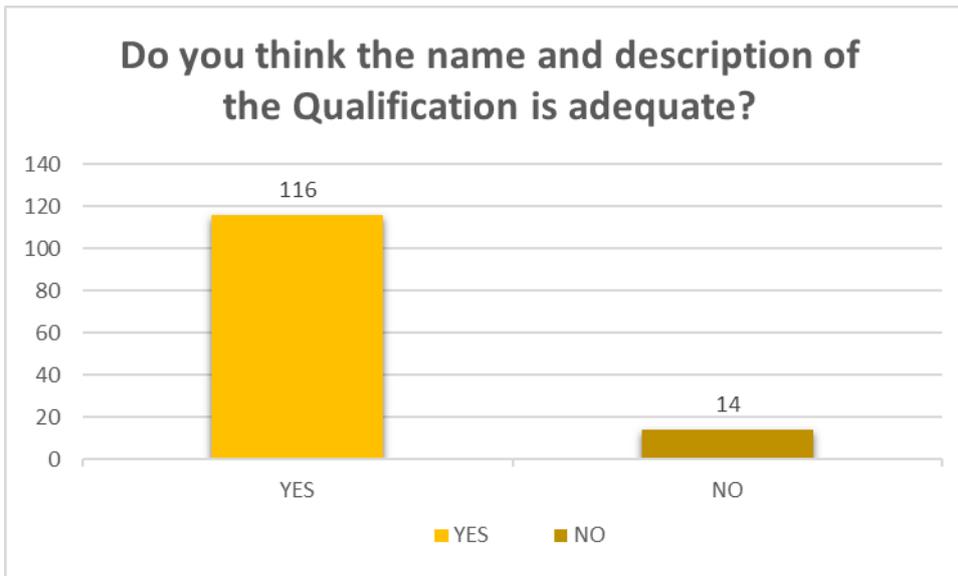




## 2. Analysis of the qualification

This section focuses on the responses received regarding the qualification developed. An analysis of the description and name of the qualification as well as of each unit and competences have been carried out per country, summarising the aspects that should be modified and positive remarks.





## 2.1. Italy

### 1. General comments on Qualification description:

Few remarks have been done by the respondents on specific units of competence, but these aspects have been discussed more in detail in the following and specific open answers. From the comments received on the profile per se, some are linked with the autonomy of this professional, who infrequently works alone, without collaborating with other technical profiles. Here below some of these comments are reported:

“the construction site technician does not work independently but in collaboration with superiors and other technicians of the construction chain. The technician must act and direct his activity towards compliance with the economic, timing and quality objectives required by the work and be able to warn his superiors in time for any problems that may arise”.

The observation is indeed correct, however does not take into consideration the innovative aspect of the whole project: the construction sector and the role of workers within it are changing and innovating, the Icaro project should be the driver to foster this evolution and improvement of tasks and responsibilities of the Construction site technician.

### 2. Comments and modifications per unit and competence:

#### ➤ UNIT 1: Construction Site Technician's preliminary activities

- **Competence 1.1 To be able to analyse technical project and planning of working activities.**

“Should be added the ability to propose alternative solutions to the one identified in the project, to optimize them with the organizational models of the specific business”.

- **Competence 1.3 to implement circular economy and environmental protection solutions at the stages of building construction and use.**

“To include also the knowledge of GPPs to qualify / improve the approach to an economy of scale”

- **Competence 1.4 to be able to apply instructions of the project and technical documentation concerning the environmental resources.**

Delete the sentence “design of environmental embedded and unified management systems”.

- UNIT 2: Site management and coordination of building site's activities (residential and commercial buildings, engineering structures, infrastructure)
  - **Competence 2.2 to supervise the implementation of technical solutions for the project and the construction process.**  
“The technician must be able to prepare an adequate estimate of costs and timing of construction and check the executive design that has received. He/she must be able to check and verify how much of the documents received is correctly executable and also suggest alternative solutions”.
  - **Competence 2.3 to be able to organise technical construction works on site.**  
“Underline that in this activity the technician must cooperate with the project designer”
  
- UNIT 3: Energy efficiency and sustainable construction
  - **Competence 3.1 to be able to control the execution of the elements that influence the energy performance of the building using the adequate technology.**  
“It shouldn't be the construction site technician who identifies and proposes solutions in the field of energy systems but the project designer; the technician takes care of the implementation and eventually proposes solutions”
  - **Competence 3.2 to be able to analyze the thermal behavior of the building and the recognition of pathologies, outlining the phases to be taken in a retrofitting building envelope site.**  
To be added the knowledge of the tests for measuring energy performance, to be carried out during construction and ex post. The technician should also know the main certification protocols.
  
- UNIT 4: Waste management
  - **Competence 4.2 to be able to manage the specific types of waste materials.**  
“The construction site technician must plan the construction activities taking into consideration the requirements of a correct management of the waste produced and / or found within the construction site”
  
- UNIT 5: Digitalization
  - **Competence 5.3 to be able to create, understand, manage and analyze digital content in construction.**  
“This competence is far too advanced; it is a responsibility of the project designer, not of the technician: he must not correct but only report problems or inconsistencies to other responsible figures”

### 3. Further comments

The overall profile of Construction site technician is perfectly characterized but, according to some of the respondents, is far too complex; when considering the transposition of the working profile identified into a training programme, it is difficult to imagine to train a technician with high level of competences in all the fields considered. Maybe, it would be a possible solution to identify the “basic profile” and a certain number of specialization curricula, to deepen the competence of the trained technician only in a specific field or unit of competence.

Moreover, the respondents highlighted the relevance of building a European procedure to adopt the new profile and recognize the qualification of Construction site technician outside of the

consortium of Icaro project. Finally, a mentioned topic deals with the need to change the mentality of construction companies that, especially in Italy, are **still tied to the past and to the traditional profiles**.

## 2.2. Lithuania

### 1. General comments on Qualification description:

As there is no officially defined construction site technician position in Lithuania, the comments in the survey showed that it is more reminiscent of a job description for a construction manager.

### 2. Comments and modifications per unit and competence:

#### ➤ UNIT 1 Construction Site Technician's preliminary activities.

Based on the comments, all the competencies of this Unit were indicated as relevant.

#### ➤ UNIT 2 Site management and coordination of building site's activities (residential and commercial buildings, engineering structures, infrastructure.

Survey showed that competencies of this Unit are relevant and continuous improvement of them is necessary.

#### ➤ UNIT 3 Energy efficiency and sustainable construction.

- **Competence 3.1 to be able to control the execution of the elements that influence the energy performance of the building using the adequate technology.**

It shows that level of this competence is too high. All the participants who has commented on it thinks that technician won't be able to change energy source. There was suggestion to make change in formulation of it indicating that Construction Site Technician need only to control of the implementation of the project solutions.

- **Competence 3.2 to be able to analyze the thermal behavior of the building and the recognition of pathologies, outlining the phases to be taken in a retrofitting building envelope site.**

It was indicated as relevant just in the field of building maintenance.

According to the respondents, the remaining competencies require continuous improvement. They should also be further defined so that the construction site technician implements project solutions and their control.

#### ➤ UNIT 4 Waste management

- **Competence 4.1. to be able to manage the construction and demolition waste chain, by overseeing all the steps of the process.**

It was stated as relevant, because the decisions depend on the circumstances, the project does not provide. No further comments or suggestions has been received.

#### ➤ UNIT 5 Digitalization

Survey results indicates that the application of IT technologies is a constant need for competence development.

➤ UNIT 6 Soft skills

Based on survey results there was no comments or suggestions on this Unit's competencies.

➤ UNIT 7 Specific skills with reference to the construction site typology

It was indicated that competences of this Unit are relevant in individual cases and the level of general erudition is necessary. No suggestions for changing these competencies were indicated.

### 3. Further comments

Most of respondents had no comments or suggestions. Just one opinion was received indicating, that proposed qualification duplicates the engineering qualifications described in the professional standard for the construction sector and thoughts that it is not needed. However, we do not think that this view is absolutely correct, as the mentioned engineering qualification is an EQF level 7 qualification, which actually requires very in-depth knowledge.

## 2.3. Spain

### 1. General comments on the Qualification description

It is mentioned that in the description of the qualification it is important to mention that through this qualification the individual "will be able to..." and then indicate all the competence that he/she will acquire.

Some stakeholders also pointed out that Construction Site Technician's competences might encroach on competences of a Civil engineering in Spain. It is important to replace the word "manage" by "control".

In addition, it was commented that in order to show that this qualification is common in various EU countries the word "international" could be added to the name of the qualification.

### 2. Comments and modifications per unit and competence:

➤ UNIT 1: Construction Site Technician's preliminary activities.

- **Competence 1.1: To be able to analyse technical project and planning of working activities**

The title of this competence should be: validation and technical analysis of the Project. Planning.

It is also mentioned that the word "and understand" should be added.

- **Competence 1.2: to be able to implement occupational health and safety solutions.**

This competence falls under the scope of a health and safety coordinator. In order not to encroach competences, it should be specified that we are talking about basic occupational health & safety knowledge.

The title should be changed to: Contribution and implementation of improvements in the field of Health and Safety. In the description instead of "understands the related regulation documents...", I would remove "the documents" to leave "understands the related regulations...". Another point for improvement, in the description "able to adopt

solutions...” I would write as “able to provide solutions...”.

- **Competence 1.3: to implement circular economy and environmental protection solutions at the stages of building construction and use.**

In the description it should be added: “analyse the information related to carbon footprint of materials”.

The title of the competence says “implement” but the description says knowledge. It is contradictory.

- **Competence 1.4: to be able to apply instructions of the project and technical documentation concerning the environmental resource.**

The competence “acquisition of information concerning industrial processes, machinery and plant, raw materials;” goes beyond environmental matters.

The description of this competence is too brief.

➤ UNIT 2: Site management and coordination of building site’s activities (residential and commercial buildings, engineering structures, infrastructure)

- **Competence 2.1: to be able to prepare construction documentation under the management of a supervisor; to be able to manage the daily work on site.**

It could be described as “preparation of site documentation, filling in of paper and digital forms; monitoring the correct execution of the works by managing variations”

I would give greater prominence to documentation and processes related to electronic administration: digital skills (use of office software, CAD, e-mail and electronic messaging programs, handling of digital certificates and basic security concepts in the field of ICT).

- **Competence 2.2: to supervise the implementation of technical solutions for the project and the construction process.**

This competence is more suited to a higher profile, or at least it cannot be solely the competence of the technician as she/he would need the supervision of the competent higher manager.

I would change it to “preparation of the construction work monitoring report, construction rules, evaluation of the effectiveness of solutions in compliance with the supervisor’s instructions; identification of the work activity budgetary estimate, implementation of estimated metrics”.

- **Competence 2.3: to be able to organise technical construction works on site.**

It could be useful to define “technical construction works”.

Add ITC competences: electronic management of all project documentation.

Add: Controlling quality and being capable of organising the work and resources.

➤ UNIT 3: Energy efficiency and sustainable construction

- **Competence 3.1: to be able to control the execution of the elements that influence the energy performance of the building using the adequate technology.**

On the competence “choose alternative solutions to oil-based fuels through renewable energies that can be easily applied to buildings consumptions” change choose by “recommend”

This technician must not take certain decisions regarding energy efficiency, but must implement the solutions that have been designed.

- **Competence 3.2: to be able to analyse the thermal behaviour of the building and the recognition of pathologies, outlining the phases to be taken in a retrofitting building envelope site**

The scope of these decisions exceeds the qualification. It should imply basic knowledge.

- **Competence 3.3: to be able to monitor the construction of Ventilated Facades.**

There are other efficient solutions for building façades, so it would be more appropriate not to single one out. Propose: “Being capable of monitoring the execution of energy efficient façades according to the project technical specifications”.

- **Competence 3.4: to be able to monitor the installation of External Wall Insulation Systems**

Delete word “manage” from the LO.

- **Competence 3.5: to be able to manage waterproofing and insulation of roofs, walls and underground floors**

Delete the word “manage” - only monitoring.

➤ UNIT 4: Waste management

- **Competence 4.1: to be able to manage the construction and demolition waste chain, by overseeing all the steps of the process**

Being capable of managing involves learning outcomes that go beyond “knowledge”. This competence should entail basic knowledge. An expert on waste management should be on site.

➤ UNIT 5: Digitalization

- **Competence 5.1: to be able to get the information and data needed for the construction work.**

The names and descriptions are too sweepingly general, they should be more specific to the construction sector.

- **Competence 5.2: to be able to communicate and collaborate with the other construction stakeholders and colleagues.**

Include: Ability to “translate” information with highly technical content to the personnel responsible for execution on site.

Also, add “in digital environments” to the competence.

- **Competence 5.3: to be able to create, understand, manage and analyse digital content in construction.**

Too ambitious description and goes beyond its profile. He or she must be able to analyse them, but not the capability to create.

“Create” seems excessive, as does “amend the required digital content at all levels of detail and complexity”. Knowing how to use the tools, understanding, analysing, etc. is enough. Handling the plug-ins would be enough. Moreover, in Spain, a construction site technician has no legal competence to modify a project.

- **Competence 5.4: to be able to protect the personal and other digital data**

Other digital data should be specified.

It should entail basic knowledge.

➤ UNIT 6: Soft skills

- **Competence 6.1: to be able to communicate and present the construction progress report.**

The description contains things beyond “communicating” and “reporting”, such as: “problem-solving skills” or “being sufficiently flexible to re-prioritise tasks if something unexpected occurs in a project”.

It is also mentioned that his competence is very important.

➤ UNIT 7: Specific skills with reference to the construction site typology

- **Competence 7.1: to be able to manage and supervise technical aspects of the construction project**  
Knowledge in means of communication constructions? Simplify it by: “knowledge in building works, industrial and civil constructions”.  
This competence should be described at a more general level, and put the EIFS and the rest of the construction solutions here.
- **Competence 7.2: To be able to manage and supervise industrialised construction (IC)**  
Managing and supervising is a higher level of competence than having knowledge.
- **Competence 7.3: to be able to manage and supervise water supply and sewerage system installation according to construction documentation.**  
Change “sewage” to “drainage”  
Managing and supervising versus knowing.
- **Competence 7.4: to be able to manage and supervise heating, ventilation and air-conditioning system installation according to construction documentation.**  
Incorporate some content relating to new generating facilities with alternative energy sources. Training in solar panels for domestic hot water generation, geothermal and aerothermal systems, etc.  
The term HVAC should be used.  
Managing and supervising versus knowing.
- **Competence 7.5: to be able to manage and supervise installation of electricity network, low voltage and communication systems according to construction documentation.**  
The mention of systems for generating electrical power using alternative systems – photovoltaic panels, wind turbines, requirements for battery storage rooms (accumulators), etc. – would be lacking.  
Delete “supervise”  
Managing and supervising versus knowing.

### 3. Further comments

Other comments made by Spanish stakeholders:

- In terms of competences, being capable of managing and supervising is not the same as having knowledge. It should be noticed that there are huge differences between building and the diversity of public works: it would have been good to have differentiated at least the role of Building Construction Technician from Public Works Construction Technician.
- It is better to define professional competences at the generic level. The technician needs to be able to manage and supervise all types of construction systems and works phases; there is no need to go into them one by one. It would be impossible to list them all.
- I believe the fundamental competences required for Building Technician posts should be related to, and training be provided in: leadership skills, conflict resolution, communication, management of high performance teams, stress management, for example.

## 3. Conclusions

On the following matrix, relevant modifications implemented the curricula is displayed in order to track the changes made on the competences and units:

UNIT	COMPETENCE	ITALY	LITHUANIA	SPAIN	Comments Lithuania	Comments Italy	Comments Spain	Modified competence
<b>1: Construction Site Technician's preliminary activities.</b>	<b>to be able to analyse and understand technical project and planning of working activities</b>			<p>The title of this competence should be: validation and technical analysis of The Project. Planning.</p> <p>It is also mentioned that the word “and understand” should be added.</p>	We think that this competence may be modified by adding the word "Understand".	We agree on the suggested modifications	<p>we agree on the modifications:</p> <ul style="list-style-type: none"> <li>- add to the title " able to analyse and validate the project. Planning working activities.</li> <li>- Add in the description the word understand + italian comment</li> </ul>	

	<p><b>1.2: to be able to implement occupational health and safety solutions.</b></p>			<p>This competence falls under the scope of a health and safety coordinator. In order not to encroach competences, it should be specified that we are talking about basic occupational health &amp; safety knowledge.</p> <p>The title should be changed to: Contribution and implementation of improvements in the field of Health and Safety. In the description instead of “understands the related regulation documents...”, I would remove “the documents” to leave “understands the related regulations...”. Another point for improvement, in the description “able to adopt solutions...” I would write as “able to provide solutions...”.</p>	<p>we think that no changes are needed to this competence, because only one country has commented on it.</p>	<p>We agree on the suggested modifications</p>	<p>We agree on the comments made by our stakeholder</p>	<p>To be able to provide health and safety solutions</p>
--	--	--	--	--	--	--	---	--

	<b>1.3: to implement circular economy and environmental protection solutions at the stages of building construction and use</b>	“To include also the knowledge of GPPs to qualify / improve the approach to an economy of scale”		In the description it should be added: “analyse the information related to carbon footprint of materials”  The title of the competence says “implement” but the description says knowledge. It is contradictory.	We think that this competence should stay unchanged. Comments only can be used when describing the content of it.	We agree on the suggested modifications + better to modify “implement” with “knowledge”	We agree on changing the description of the comments as Spain and Italy proposed.	To know circular economy and environmental protection solutions at the stages of building construction and use
	<b>1.4: to be able to apply instructions of the project and technical documentation concerning the environmental resource</b>	Delete the sentence “design of environmental embedded and unified management systems”.		The competence “acquisition of information concerning industrial processes, machinery and plant, raw materials;” goes beyond environmental matters.  The description of this competence is too brief.	We think that this competence should stay unchanged. We think only this sentence “design of environmental embedded and unified management systems” could be deleted.		we agree on changing the description deleting what Italy proposed and also changing “acquisition of information concerning” by “knowing the industrial processes, machinery and plant....”	

<p><b>2: Site management and coordination of building site's activities (residential and commercial buildings, engineering structures, infrastructure)</b></p>	<p><b>2.1. to be able to prepare construction documentation under the management of a supervisor; to be able to manage the daily work on site.</b></p>			<p>It could be described as "preparation of site documentation, filling in of paper and digital forms; monitoring the correct execution of the works by managing variations" I would give greater prominence to documentation and processes related to electronic administration: digital skills (use of office software, CAD, e-mail and electronic messaging programs, handling of digital certificates and basic security concepts in the field of ICT).</p>	<p>we think that no changes are needed to this competence, because only one country has commented on it.</p>	<p>We agree</p>	<p>we agree on what we proposed.</p>	
	<p><b>2.2: to supervise the implementation of technical solutions for the project and the construction process.</b></p>	<p>"The technician must be able to prepare an adequate estimate of costs and timing of construction and check the executive design that</p>		<p>This competence is more suited to a higher profile, or at least it cannot be solely the competence of the technician as she/he would need the supervision of the competent higher manager. I would change it to "preparation of the construction work</p>	<p>We think that this competence should stay unchanged. Comments only can be used when describing the content of it.</p>	<p>We agree</p>	<p>we agree on modifying the description as proposed</p>	

		has received. He/she must be able to check and verify how much of the documents received is correctly executable and also suggest alternative solutions”.		monitoring report, construction rules, evaluation of the effectiveness of solutions in compliance with the supervisor’s instructions; identification of the work activity budgetary estimate, implementation of estimated metrics”.				
	<b>2.3 to be able to organise technical construction works on site.</b>	“Underline that in this activity the technician must cooperate with the project designer”		It could be useful to define “ technical construction works”. Add ITC competences: electronic management of all project documentation. Add: Controlling quality and being capable of organising the work and resources.	We think that this competence should stay unchanged. Electrical management is covered in competence 5.	We agree on better defining the "technical construction works" tasks but we believe the ITC competences should not be included	we agree that Technical construction works should be defined. ITC competences should be left out.	

						here; maybe in the Digitalization unit. <b>Suggestion: identify executive problems and suggest technical solutions.</b>		
<b>3: Energy efficiency and sustainable construction</b>	<b>3.1: to be able to control the execution of the elements that influence the performance of the building using the adequate technology.</b>	“It shouldn’t be the construction site technician who identifies and proposes solutions in the field of energy systems but the project designer; the technician	It shows that level of this competence is too high. All the participants who has commented on it thinks that technician won’t be able to change energy source. There was suggestion to make change in formulation of it indicating that Construction Site Technician need only to control of the implementation	On the competence “choose alternative solutions to oil-based fuels through renewable energies that can be easily applied to buildings consumptions” change choose by “recommend” This technician must not take certain decisions regarding energy efficiency, but must implement the solutions that have been designed.	We think that description of these two competences should be just representing general knowledge about energy efficient systems and knowing the main facts about their instalation.		Change this competence accordingly.	To be able to take care of the implementation of the solution that have been designed and eventually propose solution

		takes care of the implementation and eventually proposes solutions”	of the project solutions.					
	<b>3.2 to be able to analyze the thermal behavior of the building and the recognition of pathologies, outlining the phases to be taken in a retrofitting building envelope site</b>	To be added the knowledge of the tests for measuring energy performance, to be carried out during construction and ex post. The technician should also know the main certification protocols.	It was indicated as relevant just in the field of building maintenance. According to the respondents, the remaining competencies require continuous improvement. They should also be further defined so that the construction site technician implements project solutions and their control.	The scope of these decisions exceeds the qualification. It should imply basic knowledge.			Change this competence accordingly.	To know the thermal behavior of the building

	<b>3.3: to be able to monitor the construction of Ventilated Facades.</b>			There are other efficient solutions for building façades, so it would be more appropriate not to single one out. Propose: “Being capable of monitoring the execution of energy efficient façades according to the project technical specifications”.	we think that no changes are needed to these competences, because only one country has commented on it.	We agree, better leave it general.	Change this competence accordingly.	To be capable of monitoring the execution of energy efficient facades according the the project technical specifications
	<b>3.4: to be able to monitor the installation of External Wall Insulation Systems</b>			Delete word “manage” from the LO.		We agree	we agree on what we proposed.	To monitor the installation of External Wall Insulation Systems
	<b>3.5: to be able to manage waterproofing and insulation of roofs, walls and underground floors</b>			Delete the word “manage” - only monitoring		We agree	we agree on what we proposed.	To manage waterproofing and insulation of roofs, walls and underground floors
<b>4: Waste management</b>	<b>4.1: to be able to manage the construction and demolition waste chain, by overseeing all the steps of the process</b>		It was stated as relevant, because the decisions depend on the circumstances, the project does not provide. No further comments or	Being capable of managing involves learning outcomes that go beyond “knowledge”. This competence should entail basic knowledge. An expert	We think that these competences should stay unchanged. Comments only can be used when	We agree, better change manage with knowledge	we agree on changing “manage” by “knowledge”	

			suggestions has been received.	on waste management should be on site.	describing the content of it.			
	<b>4.2 to be able to manage the specific types of waste materials.</b>	“The construction site technician must plan the construction activities taking into consideration the requirements of a correct management of the waste produced and / or found within the construction site”					we agree with Italy’s proposal. Also, on the description change "plan waste management strategy" by "understand the Waste Management Plan"	

<b>5: Digitalization</b>	<b>5.1: to be able to get the information and data needed for the construction work</b>			The names and descriptions are too sweepingly general, they should be more specific to the construction sector.	We think that these competences should stay unchanged. Comments only can be used when describing the content of it.	It is a transversal/soft skill, not only related to construction sector; we believe it can be left as it is.	we agree on leave it as it is.	
	<b>5.2: to be able to communicate and collaborate with the other construction stakeholders and colleagues.</b>			Include: Ability to “translate” information with highly technical content to the personnel responsible for execution on site. Also, add “in digital environments” to the competence.	We agree.	we agree on what we proposed.	To translate information with highly technical content to the personnel responsible for execution and collaborate with the other construction stakeholders and colleagues	
	<b>5.3: to be able to create, understand, manage and analyse digital content in construction</b>	“This competence is far too advanced; it is a responsibility of the project designer, not of the technician: he must		Too ambitious description and goes beyond its profile. He or she must be able to analyse them, but not the capability to create. “Create” seems excessive, as does “amend the required digital content at all levels of detail and	We agree do delete the word create. Maybe it could be some description added that technician is able to create simple digital content for	We agree, should be modified with less responsibilities.	we agree on simplifying responsibilities as mentioned by Spain and Italy.	To be able to create simple digital content for the explanation of tasks and critical issues of the site

		not correct but only report problems or inconsistencies to other responsible figures”		complexity”. Knowing how to use the tools, understanding, analysing, etc. is enough. Handling the plug-ins would be enough. Moreover, in Spain, a construction site technician has no legal competence to modify a project	the explanation of tasks.			
	<b>5.4: to be able to protect the personal and other digital data</b>			Other digital data should be specified. It should entail basic knowledge	We think that this competence should stay unchanged. Now it looks unclear what additional data should be specified.	We believe is already explained in the "learning outcomes" column.	we agree on leave it as it is.	
<b>6: Soft skills</b>	<b>6.1: to be able to communicate and present the construction progress report.</b>			The description contains things beyond “communicating” and “reporting”, such as: “problem-solving skills” or “being sufficiently flexible to re-prioritise tasks if something unexpected occurs in a project”. It is also mentioned that this competence is very important.	We think that no changes are needed in this competence.	We agree	we agree on what we proposed.	

<b>7: Specific skills with reference to the construction site typology</b>	<b>7.1: to be able to manage and supervise technical aspects of the construction project</b>			<p>Knowledge in means of communication constructions? Simplify it by: “knowledge in building works, industrial and civil constructions”. This competence should be described at a more general level, and put the EIFS and the rest of the construction solutions here.</p>	<p>Our suggestion to all these competences could be that all of them can start like this: "Have knowledge about and be able to manage". But the term supervise also suits for us.</p>		<p>we agree on what Lithuania proposes.</p>	
	<b>7.2: To be able to manage and supervise industrialised construction (IC)</b>			<p>Managing and supervising is a higher level of competence than having knowledge.</p>				
	<b>7.3: to be able to manage and supervise water supply and sewerage system installation according to construction documentation.</b>			<p>Change “sewage” to “drainage” Managing and supervising versus knowing.</p>				
	<b>7.4: to be able to manage and supervise heating, ventilation and air-conditioning system installation according to</b>			<p>Incorporate some content relating to new generating facilities with alternative energy sources. Training in solar panels for</p>				

	<p><b>construction documentation.</b></p>			<p>domestic hot water generation, geothermal and aerothermal systems, etc.          The term HVAC should be used.          Managing and supervising versus knowing.</p>				
	<p><b>7.5: to be able to manage and supervise installation of electricity network, low voltage and communication systems according to construction documentation.</b></p>			<p>The mention of systems for generating electrical power using alternative systems – photovoltaic panels, wind turbines, requirements for battery storage rooms (accumulators), etc. – would be lacking.          Delete “supervise”          Managing and supervising versus knowing.</p>		<p>We agree.</p>		