05.04.2016 Round Table in Athens

TEE
TECHNICAL CHAMBER OF GREECE

Updated Information on Regulations for Architects and Civil Engineers Professional Practice and Education on the International Level

OVERVIEW OF REGULATION IN EUROPE

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OVERVIEW

i) Internationally **Civil Engineers** provide a wide range of activities
(e.g. P.E. exam – USA, C.Eng. disciplines - U.K., etc)

ii) **E.C.C.E. Civil Engineering Charter ≈ Universal Classifications**
(UNESCO Report [2010], Bureau of Labor Statistics U.S. [2014-15])

iii) Certain EU Member States **regulate the profession by way of 'reserves of activities'**
Other EU Member States **regulate the profession with regard to the title**

iv) In **Seismic Regions** certain fundamental principles must be taken into account in order to arrive at a **structural concept** that is considered **sound for the earthquake resistance** (e.g. EN1998)

Internationally Civil Engineers provide a wide range of activities

PE exam specifications and design standards

Exam specifications and design standards are posted 6 months before the exam administration. Updates for April exams are posted in November, and updates for October exams are posted in May.

Agricultural and Biological Engineering
Architectural
Chemical
Civil: Construction (with design standards for the 2015 exams)
Civil: Geotechnical (with design standards for the 2015 exams)
Civil: Structural (with revised design standards for the October 2015 exams)
Civil: Transportation (with revised design standards for the October 2015 exams)
Civil: Water Resources and Environmental
Control Systems
Electrical and Computer: Computer Engineering
Electrical and Computer: Electrical and Electronics
Electrical and Computer: Power
Environmental
Fire Protection
Industrial
Mechanical: HVAC and Refrigeration
Mechanical: Mechanical Systems and Materials
Mechanical: Thermal and Fluids Systems
Metallurgical and Materials (new specifications for the 2015 exam)
Mining and Mineral Processing
Naval Architecture and Marine (new specifications for the 2016 exam)
Nuclear
Petroleum
Software
Structural (with design standards for the 2015 exams)

(P.E. exams - U.S.A.)

ice by discipline

Buildings and structures
Coastal and offshore engineering
Development, planning and urban engineering
Energy
Geology, geotechnical and ground engineering
Professional practice
Transportation
Water engineering and wastewater management

ice by theme

BIM
Historical engineering
Low carbon
Sustainability

(Institute of Civil Engineers - U.K.)

International Practice

E.C.C.E. Civil Engineering Charter

- ***Structural Design***
- ***Building & other structures planning/design***
- ***Tunneling & ground solutions design***
- ***Roads and other communication infrastructures planning/design***
- ***Water & sanitary infrastructures planning/design***
- ***River, coastal and offshore infrastructures planning/design***
- ***Urban & environmental planning/design***
- ***Safety planning***

International Practice

Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2014-15 : *«What Civil Engineers Do:* ***Civil engineers design, construct, supervise, operate, and maintain large construction projects and systems, including roads, buildings, airports, tunnels, dams, bridges, and systems for water supply and sewage treatment»***

International Standard Classification of Education (ISCED - UNESCO)

0732: ***«Building and civil engineering»*** *(06.4 - 582)*
582 of subcategory 58 «Architecture and building»
of category 5 «Engineering, Manufacturing and Construction».

General Regulations and Directives

- Construction Products Regulation
- Public Procurement Directive
- Services Directive
- Directive on the provision of information in the field of technical standards and regulations

Policy Priorities

- Health and safety in construction
- Free movement of engineering/construction services and products
- Competitiveness of the Construction sector
- Sustainable Construction

Types of Regulation in the EU

Certain EU Member States regulate by way of 'reserves of activities'

Ireland *requires that a qualified professional,* ***either an architect or engineer****, sign compliance documentation at both* ***design completion stage & build****.*
In ***Austria*** *drawing up of public documents* ***are reserved to civil engineers****,*
In ***Portugal****, designing and construction activities in all areas of civil engineering* ***are reserved to civil engineers****.*
In Denmark, and Finland *the only regulated activities are those related to the* ***construction*** *of (public and private)* ***buildings.***
In Denmark *the activity of* ***designer is regulated to a very limited extent****, namely only for the construction of buildings categorised as* ***'high hazard risk'***
In Poland *the activities of* ***designing and construction*** *are performed either by 2 different types of engineers or jointly by the same engineer depending on the qualification held*

Types of Regulation in the EU

Other EU Member States regulate with regard to the title

Belgium, ***France, Germany*** *and the* ***United Kingdom*** *legally protect the use of the professional title, which means that while access to the profession is free, the service provider needs to hold the necessary qualification requirements (or a qualification considered equivalent) only* ***if he wants to use the title****. In practice and depending on the Member State, the use of the title may be necessary because of* ***market expectations and acceptance by the public.***

A small number of Member States*, i.e.* ***Croatia, Cyprus, Italy, Malta, Portugal, Ireland*** *and* ***Spain*** *not only regulate the profession* ***by way of reserved activity but also protect the use of the title****.*
*In Spain Ingeniero de Caminos, Canales y Puertos (****Master of Engineering****)* ***have full professional competence in civil engineering and public works.***

Example of Shared Activities

the submission of construction related documents to the building authorities, such as in the application for building permits or design approval
Germany reports the sharing of these reserves with **architects**
Ireland requires that a qualified professional, **either an architect or engineer**, sign compliance documentation at both the design and completion stage of the build.

In Austria drawing up of designs is shared activity
Italy reserves services related to **land use** and **urban planning,** including **landscape planning, to architects, engineers** and other technicians

Management of building projects
Austria, and **Lithuania** shared with architects
In Ireland, anyone may manage a construction project however final compliance certification must be signed off **by either an architect or civil engineer**.
In Italy shared with architects & environmental eng. - **excluding artistic & restoration**

Academic qualification beyond the Bachelor Degree

Czech Republic, **Finland**, **Italy** Master of 5 years for section A
Poland 5 years for Master Civil Engineers
Spain Ingeniero de Caminos, Canales y Puertos: either Bachelor + Masters' Degree (4+2) or Pre-Bologna integrated Masters Degree (5 or 6 years)
Netherlands, **Norway** - Master 5 years
Sweden, **France** - Master 5 years
In **Denmark** 5 years for civil engineer specialised in building

*In the **United Kingdom** there is a specific regime in the way that qualifications of civil engineers (Chartered structural engineer or Chartered civil engineer) are classified at level **e)** of **Article 11** of **Directive 2005/36/EC***

Duration of Professional experience : examples

Austria, Slovakia (at least 3 years)
Bulgaria (between 2 and 4 years)
the Czech Republic (3 years for section A)
Luxembourg (2 years)
Malta (1 or 2 years)
Poland (1.5 year after MSc)

Justification of Regulations

structural, fire and health safety risks
environmental damage (water contamination, disaster prevention and environmental protection, and energy efficiency)

optimisation of investments
impact of lawsuits on the business as well as insurance premiums fraud on prices and lack of control over legal provisions on public safety or risks raised from the exercise of the activity as self-employed

EN standardization … Compliance with basic requirements

to prove **compliance** of **Building & Civil Engineering Works**
with the basic requirements of the **Construction Products Regulation**

- **mechanical resistance and stability**
- **safety in case of fire**
- **hygiene, health and the environment**
- **safety in use**
- **protection against noise**
- **energy economy and heat retention**

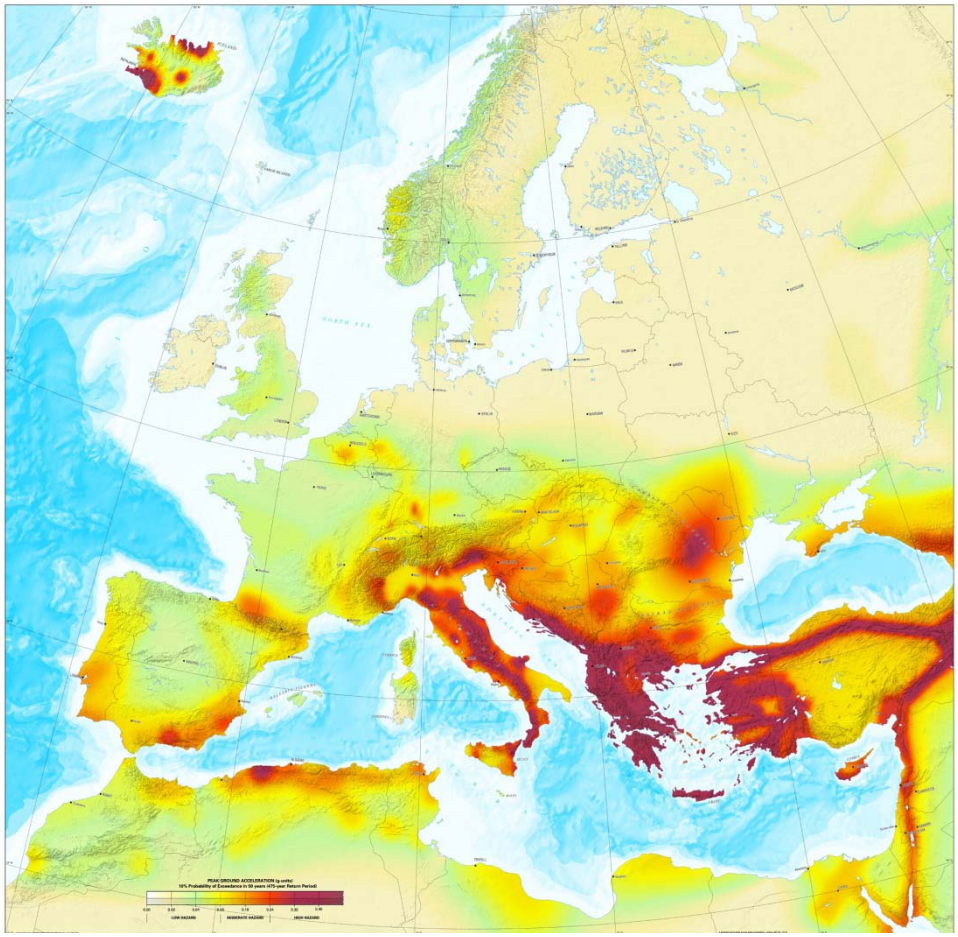
With the switchover to EN…
design, design supervision & inspection => more Qualified Persons (QPs)

Concrete effect of the measures

Germany & the UK the value of the title on the labour market
Croatia and Spain construction works are safe with good design and well maintained
Croatia waters are not polluted and forests are preserved
Austria, Croatia, Spain, and Poland low number of complaints against professionals
Portugal few accidents on site
Greece reported that due to the regulation of the profession, **the number of deaths caused by earthquakes is very low compared to other countries**

Civil Engineers in Greece

Greek Civil Engineers plan/design/build in the most **seismically** active region in Europe (also 6th position on the global scale)



PGA
475-year Return Period
High Hazard
Source: ESC

Civil Engineers in Greece

The majority of Greek Civil Engineers act as Building Engineers the Greek Society has directly recognized them as master builders & leaders in the construction sector.

Civil engineers in Greece are entrusted by society to achieve a safe & sustainable world and raise the quality of life.

εις το επανιδείν !

European Council
of
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