



European Federation of
Explosives Engineers

EFEE AND COMPETENCE IMPROVEMENT

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OBJECTIVES OF EFEE

- Promotion of **standardisation and harmonisation of the shotfire training in Europe** and thereby to contribute to the improvement of matters like safety, health, environment and security in the field of explosives technology.

EFEE TODAY

- **Nation memberships: 24**

Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France (2), Germany, Hungary, Liechtenstein, Netherlands, Norway, Poland, Portugal, Russia, Slovenia, Slovak Republic, Spain, Sweden, Switzerland, United Kingdom and Ukraine

VOCATIONAL TRAINING IN BLASTING ACTIVITY

- Vocational training courses in blasting activity are **still supported by traditional methods and programmes are not the same in all European countries.**
- Vocational training courses are dependent of the explosives and blasting nature.
 - Consequently **different blasting certificates are available** according to the main activity to be carried out by the shotfire.

Most of European countries (Norway, Finland, Denmark and Switzerland, Greece, Czech Republic, ...) propose two or three shotfire level certificates.

ASSESSMENT TO CERTIFY COMPETENCES IN BLASTING

- The licence certificate attesting the competence is obtained by the approval in an exam (attesting theoretical and practical knowledge) after a period of training in workplace under the supervision of a licensed shotfire and a short training course at a vocational training school or a professional association during one or two weeks.
- For high certificate levels:
 - The period of training in workplace can reach about 12 months and must involve a significant range of blasting operations.
 - Others are based in a minimum of specific shots.

SUPPLEMENTARY REQUIREMENTS

- Adding to the approval in the exam is generally required an **official document attesting the moral of the candidate.**
- In addition some countries, like Portugal, only provide **the blasting licence if the candidate possess a valid company contract and a license to use explosives**

MOBILITY OF SHOTFIRE

- The desire of a shotfire to work in another country is often linked to local job opportunities, so this period of time is normal of short duration. This scenario is common for demolition shotfiring.
- The mutual recognition principle means that registered training organisations are bound to accept the qualifications awarded by other registered training organisations. In theory the mutual recognition of qualifications enables the portability of qualifications and credit between states and territories.

BASIC KNOWLEDGE OF EU SHOTFIRE

- A **shotfire must demonstrated basic knowledge** about explosives, initiation systems and characteristics behaviour of materials to be ruptured by explosives (geology, building construction), blasting design and safety & environmental aspects.
- EFEE has scrutinised the education of shotfirers in the majority of the EFEE member countries and has **concluded that these countries have an education level considered acceptable** as “EFEE basic standard education”.
- **EFEE approved the basic standard education for rock blasting and demolition**

CERTIFYING COMPETENCES IN EUROPE

- **EFEE has appointed national approvers in the recognised countries to control the valid national certificate of an applicant for European Certificate**
- Subject to acceptance by the national approver; **EFEE may issue an EFEE Standard European Shotfirer Certificate to the applicant.** This certificate is then valid in combination with the valid National certificate
- If the National certificate is withdrawn by the domestic authorities the related European EFEE certificate is also not valid.

CERTIFYING COMPETENCES IN EUROPE

- Although the basic standard education for shotfires is accepted by nation memberships of EFEE the **recognition and validation of competences by national authorities of the different European countries are not certain**

ESSEEM PROJECT

- November 2008 a new project intituled ESSEEM started with the purpose to support the improvements in quality and innovation of the vocational education and training systems on rock blasting and demolition.
- Develop harmonised high quality education for European shotfirers and personnel undertaking rock blasting and demolition
- Legal regulations are relatively different between countries and the target to certifying qualifications and harmonise competence and skills in Europe must not force the harmonisation of the laws.

BARRIERS TO MOBILITY OF SHOTFIRES

EU Action Plan on Enhancing the Security of Explosives

- The required **control of all activities related to explosives** may produce a supplementary barrier to promote mobility.

Different Languages

- As **blasting activity requires a good level communication and a good transmission of orders between those involved in a blasting operation** the different languages in Europe can also be a supplementary barrier to mobility.

CONCLUSIONS

- The European **convergence on education and training practices and principles** in **explosive sector** is also **far to be achieved**.
- **Many obstacles still exist** related to national regulations, language and recognition qualification and competence from one education and training system to another.