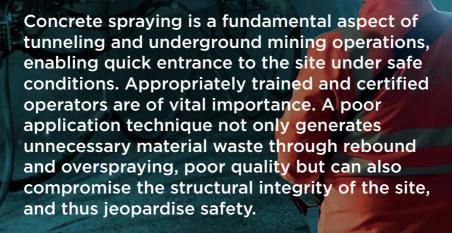
### The

## EFNARC NOZZLEMAN CERTIFICATE

# for shotcrete operators





EFNARC is a not for profit organisation founded in 1989 and comprises Company Members and Associate Members from Europe, Asia, Australasia and Latin America. its current focus is underground construction technology, particularly in relation to sprayed concrete having launched the Nozzleman Certification Scheme in September 2009.

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#### **HOW TO GET THE EFNARC NOZZLEMAN CERTIFICATE**

The Nozzleman certificate is obtained after attending and passing the course and handing in proof of minimum 40 days robotic spraying experience.

The course is arranged by EFNARC certified examiners at numerous locations around the world and takes 5 days, during consecutive days or on separate occasions. The examiners are responsible for processing the certification and making sure that eligible participants receive their EFNARC Nozzleman certificate.

#### THE COURSE



#### **MODULE 1 - THEORY SESSION**

The course includes classroom theory during a full day. The theory involves both basic and advanced theory.

#### **MODULE 2 - THEORY EXAM**

Each course participant individually completes a theory exam online which includes 30 multiple-choice questions.



#### **MODULE 3 - TRAINING AND ASSESSMENT IN VIRTUAL REALITY (VR)**

The course participants go through different scenarios on VR-simulators specifically developed for training and assessment.



#### **MODULE 4 - WORK EXPERIENCE**

The course participant hands in a document showing minimum 40 days of spraying experience. The experience can be gained prior to or after the course, but only those with experience will go through the last day of the course and perform the assessment.

#### **MODULE 5 - ASSESSMENT**

Practical assessment of each participant with a real spraying robot. This module is performed on day 5 of the course for participants that have handed in the work experience documents. Novice operators will do module 5 at a later stage (most probably on their own site).

