The

EFNARC
NOZZLEMAN CERTIFICATE
for shotcrete operators

Concrete spraying is a fundamental aspect of tunneling and underground mining operations, enabling quick entrance to the site under safe conditions. Appropriately trained and certified operators are of vital importance. A poor application technique not only generates unnecessary material waste through rebound and overspraying, poor quality but can also compromise the structural integrity of the site, and thus jeopardise safety.

achieving the highest standards

EFNARC

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 obtainied 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

DAY 1

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.

DAY 2-4

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.

DAY 5

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).

Apply for information: