



Certification of concrete field testing technicians

The Institute of Concrete Technology (ICT) has entered into a partnership with the American Concrete Institute (ACI) to bring an established certification programme to the UK and Ireland, aimed at concrete field testing technicians (CFTT), but adapted to suit the particular requirements of EN Standards. This programme, co-sponsored and co-branded as ACI-ICT, was launched in April. Rob Lewis and Raman Mangabhai report.

The ACI has been known for many years as the place to go to get certified on the more practical aspects of concrete testing or use, with its programmes offered in 24 countries. Indeed, on most American construction projects, it is impossible to have anything to do with the concrete unless you can show the appropriate ACI certificate.

Whereas ICT's qualifications in concrete are regarded as second to none, especially the Advanced Concrete Technology Diploma, these are more knowledge-based than practical. Some element of reciprocity has been an obvious target and besides – why reinvent the wheel?

Over the past couple of years, the two bodies have explored a closer collaboration, signing an international partnership

agreement in 2016. This has manifested itself in practice through publishing initiatives, reciprocal attendance at conventions and conferences, and now in qualifications and certification at each end of the professional spectrum: ACT and CFTT. ACI gets a ready-made academic qualification and ICT a template for practical certification.

CFTT certification scheme

The present scheme relates specifically to the certification of field technicians – the multiple-choice examination and practical assessment of candidates to demonstrate competence in carrying out several defined tests. While ACI certification is based on ASTM Standards, the new scheme is based on ENs – specifically, the following Standards: EN 12350⁽¹⁾ Part 1 – *Sampling*,

Above: Slump test assessment in progress.



ICT's examiner Gareth David with ACI's Mike Morrison and the jointly developed workbook.



Air content test in progress.

Part 2 – *Slump-test*; Part 5 – *Flow table test*; Part 6 – *Density*; Part 7 – *Air content*; Part 8 – *Self-compacting concrete*. *Slump-flow test*; and EN 12390 Part 2 – *Making and curing specimens for strength tests*⁽²⁾. This will be applicable in the parts of the globe that use ENs rather than ASTMs, but to an internationally recognised standard of competence. Such an extension to ENs has not been available before.

Now open for business

The scheme has just been launched – initially at the ACI Spring Convention in Quebec then straight afterwards at the ICT Convention in Wembley.

It will operate in much the same way as the ICT's existing Concrete Technology & Construction scheme: the ICT setting out agreed learning objectives (the job task analysis), preparing a workbook and promoting the scheme; external course providers delivering training; jointly appointed examiners assessing candidates' performance; and the ACI providing independent validation of exam achievement and offering administrative support. And at the end, a jointly 'badged' certificate will be issued. As usual, the ICT is acting not as

a training organisation but as a Standards-setting and examining body.

Multiple choice and assessment

The certification usually takes place over a two-day period: one day for revision of the Standards, some practical trials and then the written exam; the second day for practical assessment.

A review session on day one is filled with questions and discussion using PowerPoint presentations, workbook content and videos, and provides hands-on practice with concrete using the required test equipment. It concludes with a one-hour written, closed-book examination that consists of approximately 65 multiple-choice questions.

These review sessions are intended as a refresher. It should be noted that they do not constitute formal training and that candidates should arrive fully trained and knowledgeable about the testing required.

A workbook will be issued in advance to aid their preparation. Candidates will be expected to perform all the practical tests without fault and to demonstrate their ability to the assessor.

The practical assessments take place on day two. Each candidate undergoes seven

Invigilating the written exam.



Air content test equipment set-up.





Participants in a preliminary session held at GCP Applied Technologies' premises.



Rob Lewis with ACI's John Nehasil, MD – certification (left) and Mike Morrison, manager of certification programme development (right).

individual assessments reflecting the tests in EN 12350 Part 1 and 12390 Part 2.

Outcomes

To be certified, candidates have to pass both the written exam and the practical assessment. Those who succeed will receive a certificate to show they have passed – jointly badged with the ACI and ICT logos. Co-badging the scheme lends the resulting certificates international recognition and – from the technician's perspective – portability between jobs. They will also receive a card that remains valid for five years.

It should be understood that while the standards are high and the assessment thorough, the scope of the learning objectives is very specific: it is to demonstrate competence in a limited range of tests. It might prove suitable for inclusion in a wider portfolio of concrete training being developed within the industry. But ICT considers the balance of breadth to depth to justify membership of the Institute at the Technician level (TechICT).

Future

It is the intention of ICT to promote this certification to authorities, to drive its specification within Standards and Codes of Practice to ensure that all concrete testing is done correctly, the first time, every time. It is hoped that companies will see this as a way to build reputation for themselves and their staff. Being jointly 'badged' and

recognised by both ACI and ICT, it gives a 'portable' certificate of competence, wherever the technician might venture in their career. It is hoped that those areas of the concrete industry that need verifiable testing by qualified staff will look to this certification for their 'concrete employees' and that it will be viewed as a minimum level of competence for anyone testing concrete.

The ICT is currently arranging training for anyone interested in becoming an assessor, and seeking laboratories prepared to host a certification session. We'd love to hear from you. ■

Further details:

Contact: ict@concrete.org.uk for further details or see the introductory video at: <https://bit.ly/2ZNHpLD>.

References:

1. BRITISH STANDARDS INSTITUTION, BS EN 12350. *Testing fresh concrete. Part 1 – Sampling. Part 2 – Slump-test. Part 5 – Flow table test. Part 6 – Density. Part 7 – Air content. Pressure methods. Part 8 – Self-compacting concrete. Slump-flow test.* BSI, London.
2. BRITISH STANDARDS INSTITUTION, BS EN 12390. *Testing hardened concrete. Part 2 – Making and curing specimens for strength tests.* BSI, London, 2009.

Checking flow table drop height before commencing test.

