I•M3

The global network for the materials cycle

Institute of Materials, Minerals & Mining

Guide to the Technical Report Route for Application as

Chartered Engineer CEng

Incorporated Engineer IEng

Introduction

The Technical Report Route (TRR) enables individuals with appropriate working experience but without the necessary qualification(s), be it the Level or related subject matter, to apply for registration as a Chartered Engineer (CEng) or Incorporated Engineer (IEng). The qualification level required to underpin these professional registrations is:

CEng – an accredited or approved RQF Level 7/SCQF Level 11 or equivalent qualification such as a MEng or MSc further learning top up to a BEng or BSc.

IEng – an accredited or approved RQF Level 6/SCQF Level 10 or equivalent qualification such as a BEng or BSc.

If in doubt about the Level or suitability of your qualification(s), you should seek guidance from the Membership Department by email on membership@iom3.org.

Individuals can qualify through the TRR by submitting an appropriate piece of work – the **TECHNICAL REPORT** – through which they demonstrate the same level of knowledge and understanding of engineering fundamentals as someone who has the necessary qualification. This is achieved by satisfying a set of learning outcomes.

If you require a Reasonable Adjustment to be made to the application or assessment process, please let us know; there is also a box to tick on the application form to indicate this. If you request a Reasonable Adjustment, a member of the IOM3 Team will contact you to see how best we can support you through the application process.

Entry experience

As this route is based on experience gained through appropriate work-based learning, applicants should have gained sufficient to develop the knowledge and understanding to underpin their application. Whilst opportunities for career development vary from person to person, it is recommended, but only as a rough guide, that individuals have gained the following before making an application through the TRR:

Highest RQF level of related academic qualification held	Work experience (Years)
Application for CEng	
6 – such as a BEng/BSc	7
4/5 – such as a FdSc/FdEng/HNC/HND	10
3 – such as a ONC/OND	12
None	15
Application for IEng	
4/5 – such as a FdSc/FdEng/HNC/HND	5
3 – such as a ONC/OND	7
None	10

Step 1: The Summary

Before writing the Technical Report, potential applicants must first submit a summary of the subject matter for approval. This is to ensure that it will meet the requirements in terms of its technical scope and level. The Summary should ideally be no more than 800 words and text only.

The Summary should include the following:

- Your name and Institute membership number
- Title of the Report
- Your role in the work forming the basis of the report
- Introduction including background and reasons for the selection of the proposed topic
- Key objectives
- Challenges encountered
- Technical review of the engineering, scientific and technological principles encountered
- Resolution of the objectives
- Conclusions and lessons learnt

Step 2: Submission of the Summary

Once drafted, the Summary should be submitted to the Institute with the following documents:

- Application form
- CV
- Any academic certificates held unless already submitted to the Institute

The Summary will be reviewed by the Membership Committee. The applicant will be advised of the outcome of this review and the length of Technical Report they should submit within 4 weeks. Once approved, the applicant will have 9 months in which to prepare and submit their Technical Report. An extension may be sought if circumstances prevent its completion. The granting of any extension is at the discretion of the Membership Committee and the maximum period that may be granted is 3 months. If the outcome of the review is not successful, the applicant will be encouraged to resubmit along the lines of feedback and guidance from the Membership Committee.

Step 3: Preparation of the Technical Report

Content
The Technical Report should include a commentary, diagrams and calculations which together demonstrate an understanding of fundamental engineering principles of the project outlined in the Summary and cover the following five areas of learning:

- Science and mathematics
- Engineering analysis
- Design and innovation
- The Engineer and society
- Engineering practice

Indicative content may include:

- Mathematical aspects and calculations
- Details on Standards that must be conformed with
- Use of appropriate software to solve problems and reach engineering solutions
- Application of new and innovative technologies relevant to the subject of the project
- Application of analysis and modelling
- Evaluation and exploitation of sustainable technologies
- Establishing fitness for purpose using reliable quantitative methods
- Solution of practical problems

- Scientific knowledge of the properties of materials, minerals, ground conditions, components, and physical processes
- Selection and use of relevant equipment, tools processes or products
- The use and application of information from technical knowledge resources
- Application of engineering practices and processes such as in commissioning, design, maintenance, repair, refurbishment, and adaption

Individuals are not asked to demonstrate their professional competence in the Technical Report. The submission of a 'Management Report' addressing budgets, sourcing equipment, completion dates, staff matters, control of consultants, compliance with international standards and health and safety requirements is not acceptable content for the Technical Report.

Format
The following format for the Technical Report should be used:

Title page
This should include the applicant's name, membership number, date, report title and purpose of the report e.g., CEng application via the TRR.

Executive summary
This should be a summary of the main objectives, conclusions, findings, and achievements.

Contents page

Introduction
This should clearly indicate what the report is about and rationale behind the subject.

Main body of the report
Applicants should be guided by the following points when writing this part of the report:

- This can be sub-divided but must demonstrate the application and understanding of engineering, scientific and technological principles
- Each section should have a clear theme with ideas presented in a logical manner backed up by data, references and calculations or other sources
- Ensure the content links to the subject of the report and to the aims and objectives
- Relevant diagrams or graphical supporting information can be included
- Any lengthy supporting calculations should be included as an appendix

Discussion
This is where the applicant should develop reasoned arguments by applying their engineering knowledge and understanding.

Conclusions
The applicant must be able to provide a considered opinion on their work linked to engineering, scientific or technological principles; identify lessons learnt; and recommend changes as a result of the work and implementation of these recommendations.

Appendices
These should be limited to any calculations too lengthy for the body of the report, essential background data, drawings, or photographs.

Length

The length of the Technical Report will usually vary according to the highest level of related academic qualification held by the applicant. Where an individual holds a qualification of the required level but in a non-engineering subject, for example a MChem, they will be set a bespoke minimum report length. The following should be regarded as a rough guide only:

Highest RQF Level of related academic qualification held	Minimum report length (Words)
Application for CEng	
6 – such as a BEng/BSc	3,000
4/5 – such as a FdSc/FdEng/HNC/HND	5,000
3 – such as a ONC/OND	6,000
None	7,000
Application for IEng	
4/5 – such as a FdSc/FdEng/HNC/HND	4,000
3 – such as a ONC/OND	5,000

The minimum length of the Technical Report to be submitted by the applicant will be confirmed at the time the Summary is approved.

The applicant must sign-off their Technical Report under the statement:

I certify that this Technical Report is all my own work.

Mentor

The Institute recommends that applicants seek the guidance of a mentor when preparing their Technical Report. The Mentor should be an IOM3 member who is a CEng and familiar with the subject area of the Technical Report and the TRR process and requirements. If this is not possible, IOM3 will be happy to help identify a suitable mentor. The role of the Mentor is:

- Advise on content and subject matter
- Discuss conclusions and challenge technical reasoning and any assumptions made
- Comment constructively on drafts and advise on any changes which may be necessary

Step 4: Submission of the Technical Report

The Technical Report should be submitted together with the following documents:

- Professional Review Report
- CPD Record
- Annual Professional Development Plan
- Details of the name of their mentor and their Institute membership number if they have had the support of one

Information on preparing a suitable Professional Review Report, CPD Record, and Annual Professional Development Plan can be found in the respective guides to registration: *Guide to CEng, CEnv and CSci*, and *Guide to IEng, REnvP and RSci* which are available from the Institute website.

Applications are only accepted in electronic form by email, and submissions should be made to membership@iom3.org. Receipt will normally be acknowledged within five (5) working days. Please feel free to contact us if you do not receive an acknowledgement.

Next steps
Following submission, the Technical Report and other documentation will be reviewed by two scrutineers, who can make one of two decisions:

- Accept and proceed to the Interview Stage
- Decline but recommend revisions; the re-submitted report will be assessed again

Applicants will be notified in writing of this decision and any further action required.

Interview Stage
Applicants are required to undertake two interviews, the format being:

1. The **Technical Interview** to explore the depth and breadth of engineering knowledge and understanding. Applicants who do not meet the appropriate standard will not be able to progress to the Professional Review Interview. Applicants will be expected to give a 10 minute, three-slide PowerPoint introductory presentation on their technical report project at the start of the interview.

2. The **Professional Review Interview** which will assess an applicant's engineering competence.

Each interview will take between 45 and 60 minutes, and held on different days, with the same interviewers where possible.

Final Decision
The reports and recommendations submitted by the scrutineers and interviewers from both interviews together with a copy of the full application will be considered by the Membership Committee, who will take the final decision on the application. Applicants should receive notification of the outcome within 10 working days of the Professional Review Interview having taken place.