

Technical Report Route for Chartered Membership

Guidance for Candidates: key technical aspects considered to demonstrate Masters level further learning

Candidates will submit a Technical Report in order to demonstrate that they have the engineering knowledge and understanding that is equivalent to Masters level. The Report will be judged on the extent to which the applicant has demonstrated a clear grasp of the principles of engineering science and key technical aspects relating to the topic as would normally be expected of a graduate assessed at Masters level.

It is important for Technical Report Route candidates to establish the main differences in learning outcomes between BEng and MEng level qualifications as this in turn will allow applicants to identify the key technical aspects required to meet the output standards. Accredited MEng programmes will include a deepening of technical understanding, additional emphasis on team/group working, an increase in use of industrially relevant applications of engineering analysis and an enhanced capability for independent learning and work. It is the deepening of technical understanding which is considered key, however, and the Technical Report is intended to test this criterion.

The following table lists the sort of areas which would be considered to demonstrate to-Masters-level further learning. Note that this list is not exhaustive. It is merely intended to serve as a set of examples of structural-engineering-related areas which are considered to be to Masters level.

Complex actions on structures	Structural materials beyond the BEng norm	Structural Analysis beyond the BEng norm	Structural systems beyond the BEng norm
Dynamics of structures under any form of excitation	Low-carbon materials in general	Material and/or geometric non-linear analysis	Bridge design
Seismic analysis and design	Rammed earth	Post-buckling behaviour and disproportionate collapse	Strengthening of existing buildings and bridges
Wind loading outside the ordinary	Limecrete	Fracture mechanics	Conservation engineering
Temperature loading outside the ordinary	Strawbale	Plasticity-based approaches such as yield-line or strut-and-tie methods	Tall buildings
Severely-hostile conditions for structures	Green timber	Limit-state structural assessment of existing buildings and bridges	Façade engineering
Blast or impact resistance of structures	Prestressed concrete	Torsion-induced behaviour	Tunnelling
Structures at sea, in the air or in space	Advanced composites	Structural stability of unusual or complex geometry buildings	Plate and/or shell design
	Hempcrete		Lightweight structures
	Re-used materials		Gridshells