

THE HONG KONG INSTITUTION OF ENGINEERS

Competence-based Professional Assessment (PA) in Mechanical Discipline Review of PA Results from 2020/21 to 2025/26

Summary of Statistical Passing Rates (2020/21 – 2025/26)

This report provides a longitudinal analysis of the Professional Assessment (PA) results for the Mechanical Discipline. For the 2020/21 assessment cycle, the results were endorsed by the Qualification & Membership Board between September 2020 and November 2021. During this period, 34 competence-based assessments were conducted, with 18 candidates successful, resulting in a passing rate of 53%.

2. For the performance for the subsequent periods from 2022/23 through 2025/26, the data distinguishes between ‘Direct Entry’ (encompassing the General, Formal Training, Mature, and Research routes) and the ‘Reciprocal Recognition Agreements (RRA)’ route are shown in Appendix A. Specifically, Direct Entry passing rates rose from 63% (2022/23) to peak 94% in 2024/25 and dropped to 90% in 2025/26, while Reciprocal Recognition Agreement (RRA) candidates improved from 58% (2022/23) to 80% in 2025/26.

Analysis of Competence Not Compliance

3. Statistics of not meeting the competence standard are also presented in Appendix A and summarised as follows:

- Peak Failure Period (2022/23 – 2023/24): Failures in the core technical areas (C1, C2, C3, and C4) peaked during the 2023/24 period, with C1 and C2 each recording 22 instances of not meeting the standard for 28 fail instances.
- Significant Improvement in Technical Competence: Since the 2023/24 peak, there has been a sharp decline in failures for Applying Engineering Knowledge and Developing Technical Solutions. For instance, C2 failures dropped from 22 (2023/24) to only 2 (2025/26) for 11 fail instances.
- Risk Management Consistency: Failure rates for C7 (Risk Management) remained relatively high and steady from 2022/23 to 2024/25 (11-14 instances) before finally showing a significant drop to 5 instances in 2025/26 for 11 fail instances.
- Improvements of Safety and Environmental Concerns: Failure rates for C9 peaked in 2023/24 (11 instances) against 28 failed instances. Then, it was improved to only 1 instance in 2025/26.

Summary of the assessor's comments

4. Professional Assessments from 2020 to 2026 reveal a trend of improvement, with major deficiencies identified in the application of mechanical engineering knowledge, the development of complex technical solutions, and risk management (C1–C4 and C7) between 2020 and 2024. Candidates frequently struggle to bridge the gap between theory and practice, often failing to explain fundamental mechanical equations—such as Bernoulli’s, Darcy’s, or stress formulas—or how parameter changes within these formulas impact real-world project outcomes.

5. While earlier assessments (2022–2025) highlighted gaps in basic statutory knowledge and local Hong Kong regulations, more recent reports from 2025/26 emphasize a critical distinction between operational tasks and professional assessment/judgement, noting that unsuccessful

candidates often provide superficial process descriptions rather than the deep analytical "how" and "why" required for complex problem-solving.

6. Consequently, failures are largely attributed to a lack of independent professional judgment - an over-reliance on standard procedures, and a persistent inability to conduct systematic risk assessments that distinguish between hazards and engineering risks.

7. The improvements outlined above, alongside the measures detailed in Appendix B, were achieved through a multi-pronged approach: clarifying PA competence requirements for candidates, enhancing their preparation of experience reports and PA interviews, and aligning assessors in determining competence.

Appendix A

Statistics of the competence-based PAs between 1 July 2022 and 30 June 2026 are detailed below:

		2022/23	2023/24	2024/25	2025/26
Passing rate					
Direct entry (General Route, Formal Training Route, Mature Route and Research Route)		5/8 (63%)	6/8 (75%)	16/17 (94%)	20/22 (91%)
Reciprocal Recognition Agreements		22/40 (55%)	44/71 (62%)	27/40 (68%)	35/44 (80%)
Failure of competence					
Applying Engineering Knowledge	C1	19	22	7	9
	C2	17	22	9	2
	C11	10	5	1	1
Development Technical Solutions	C3	18	21	5	5
	C4	19	19	6	5
Managing Engineering Work	C5	12	11	5	6
	C6	12	11	6	4
	C7	11	14	11	5
	C12	14	16	1	5
Upkeeping Professional Acumen	C8	6	6	0	0
	C9	7	11	5	1
	C10	9	5	3	1
Writing Assessment	C13	1	0	0	0
	C13(i)	1	0	1	1
	C13(ii)	1	0	1	0

Appendix B

1. Competence Framework Reference Materials

- **Guidance Note:** A comprehensive Guidance Notes for Applicants and Assessors(MCL) Competence Profiles for MHKIE (Mechanical Discipline) Applicant via Formal Training or General Experience Route and Competence Profiles for Lift and Escalator Engineering have been developed to map competence requirements against experience profiles. This document serves as a primary reference for both candidates and assessors. Reference materials include exemplar reports sourced from diverse industry perspectives, including consultants, contractors, and facilities management providers.

2. Standardization and Assessor Alignment

- **Assessment Alignment:** Measures are implemented to ensure consistency among assessors in determining whether a candidate's experience meets the required competence.
- **Assessment Criteria:** The evaluation standard is focused on competence attainment; candidates are not required to exceed requirements, nor is the assessment designed to identify weaknesses beyond the scope of competence. The passing standard is not a "top-tier" benchmark but a clear demonstration of meeting the defined requirements.
- **Reference for Assessors:** The Guidance Notes provide assessors with clear references on how competence levels correlate with experience profiles, ensuring objective and uniform evaluation.
- **Assessor Briefings:** Dedicated briefings are conducted for assessors prior to each assessment day to ensure alignment with the evaluation framework.
- **Facilitator Role:** A facilitator is introduced during PA interviews to ensure that PA interview questions remain confined to the candidate's actual experience, maintaining relevance and fairness.

3. Candidate Support and Preparation

- **PA corner:** A dedicated PA Corner webpage has been established on the MMNC website to consolidate all PA information pertinent to the mechanical discipline, serving as a comprehensive reference resource for candidates.
- **PA company workshops:** Almost 20 PA workshops are arranged for companies to support candidate preparation.
- **Webinars:** Monthly webinars were conducted to provide continuous learning and updates regarding the PA process, and previous webinars were uploaded to YouTube channels.
- **Online reels:** A series of reels highlighting the 12 competence requirements is distributed via Instagram and Facebook to increase awareness and accessibility.
- **Dedicated support:** Provided for the preparation of experience reports and PA interviews.
- **Pre-interview group consultation sessions:** Sessions are offered to all candidates to standardize preparation and address common queries.
- **Assessment Day:** Monthly assessment days are conducted on a regular basis to ensure the completion of PA interviews within a three-month period commencing from the date the DAP receives assessor allocation requests, whilst also affording candidates clear visibility of their anticipated interview dates.

Relevant Materials:

<u>Guidance Note</u> 	<u>HKIE MMNC Social Medias (YouTube / Instagram / Facebook)</u> 	<u>HKIE MMNC Professional Assessment Corner</u> 
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