



INSPECTION & SAMPLING

With an experience of about 10 years, with inspection and sampling activities conducted at warehouses, factories and points of entries locally and abroad, MKRM-CREAM has conducted over 300 inspection and sampling activities to date. The inspection and sampling exercise is conducted to determine that the materials are in accordance to CIDB's ACT 520 Schedule 4 requirements. We also provide services with wide variety of certification bodies and regulatory agencies.

Services Offered:

1. Inspection and sampling of accredited inspection body
2. Arrangement of testing for Certification Bodies/Regulatory agencies

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FORENSIC

CREAM's forensic team is supported by our extensive range of laboratory equipment's suited for the construction industry in line with CIDB Fourth Schedule under act 520(Amendment 2011) which gives CIDB the authority to control and regulate the quality of construction materials produced locally or imported through certification process.

Forensic Services offered are:

1. Sampling and Data collection,
2. On-site and laboratory testing,
3. Identification and Preservation of Physical evidence,
4. Root cause analysis through testing and diagnostics.

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**MAKMAL KERJA RAYA
MALAYSIA**
MKRM

RESEARCH & CONSULTANCY

MKRM facilities enable researchers to conduct physical laboratories work.

MKRM staffs often involved in technical research and development work.

Some of the researches are:

Capturing Best Practice of Bridge Construction (Case study: Penang 2nd Bridge)

Precast Column-beam Connection (Collaboration with JKR and Dr Kim Elliott of Nottingham University UK)



TRAINING

MKRM also provides training services to construction industry players, universities, colleges, etc. The training consists of relevant testing procedures and methods, in theory and practical.

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TECHNICAL OPINION



Technical Opinion Programme is a mechanism introduced by CIDB to evaluate IBS systems, product, material, ICT, technology and innovation in construction. Selection of innovative products or new technologies to be evaluated would be based upon products that do not have reference to Malaysian Standard (MS) or Foreign Standards. CREAM is the technical secretariat for this Technical Opinion Programme. Technical Evaluation Committee appointed by CREAM comprised of industry experts and professionals will evaluate the proposal through certain criteria, test report, factory or site visit and inspection.



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ABOUT US

MAKMAL KERJA RAYA MALAYSIA (MKRM) was established in 2010 and managed by Construction Research Institute of Malaysia (CREAM), the research & development (R&D) arm of CIDB.

Services offered by MKRM :

- Testing (Construction material and structure)
- Inspection and Sampling
- Forensic investigation
- Calibration Services
- Technical Opinion
- Research and Consultancy
- Training Service



TESTING

We offer over 10 years of experience, providing a broad range of services to clients around the globe.

Full scale structure testing is our main forte. We can test all type of structures such as wall, slab, scaffolding, beam, etc. Other than that, we offers wide range of construction material testing services.

Some of our facilities are:
 Reaction floor (15m x 26m)
 Reaction wall (6m x 6m)
 2000 kN Universal Testing Machine
 200 kN Dynamic Testing Machine
 300 kN Dynamic Actuator
 500 – 2000 kN Static Actuator
 Single and Double Portal Frame

TYPE OF TESTING

SCAFFOLDING

- Tensile.
- Chemical.
- Impact.
- Flattening.
- Dimensioning.
- Zinch coating thickness.
- Coating adhesion.
- Coating mass (min. 2 samples).
- Salt spray / corrosion test.
- jackbase / U-head.
- Castor Wheel.
- Platform.
- Drop test.
- Steel props.
- Vertical deflection of horizontal tube.
- Compressive strength of vertical tube.
- Standard Post - Vertical load test.
- 3x3 modul scaffold - MS 1462-3-2.
- 1x3 vertical frame.
- Cross brace pin (Annex N).
- Cross brace - comprehensive strength (Annex F).
- Stairway load test.
- Stairway (cyclic load).
- The board (horizontal load) / ledger
- Horizontal brace :
 - downward loading.
 - upward loading.
- Horizontal point load.
- Ladder beam - point load.
- Coupler :
 - slip force.
 - failure force.
 - pull apart.
 - indentation.
 - slip resistance.
- 3x3 steel frame.
- 1xh modular shoring - BS EN 12813 (HIGH TOWER).
- 1xh modular shoring - BS EN 12813 (LOW TOWER).

TYPE OF TESTING

FRESH CONCRETE

- Slump test.
- Compacting factor
- Cube preparation
- Cylinder/beam preparation.

HARDENED CONCRETE / BRICK / BLOCK

- Cube compression test.
- Cylinder compression test.
- Beam flexural test.
- Cylinder tensile splitting test.
- Water absorption test.
- Density test.

AGGREGATE

- Sieve analysis.

CORING OF CONCRETE

- Concrete coring through reinforced concrete.
- Core specimen density.
- Compressive strength of core sample (trimmed & capped).
- Compressive strength of core sample (without trimmed & capped).

CONCRETE NDT

- Surface hardness (12 reading per set).
- Rebound hammer / digital.

TYPE OF TESTING

CEMENT

- Compressive strength of cement mortar cube.
- Chemical Composition.

CALIBRATION OF HYDRAULIC JACK

- 500 / 300 / 200 / 100 ton.

STEEL / METAL

- Dimensioning (metal, steel fabric, wire mesh, etc).
- Surface geometry (steel rebar, tube, etc).
- Tensile test (rebar, wire strand, plate, tube, etc).
- Bend / Rebend test (rebar, plate, tube, etc).
- Fatigue test on steel.
- Bonding test.
- Chemical composition.
- Coating mass.

FULL SCALE STRUCTURE TEST

- Flexural test on beam / pile / wall / hollow core / slab.
- Shear test on beam / hollow core / slab.
- Compression test on wall panel.

HARDNESS TEST

- Brinell hardness test.
- Rockwell hardness test.
- Micro hardness test.

TYPE OF TESTING

OTHER TEST

- Microscopy analysis for metallurgy test.
- Accelerated UV chamber testing.
- Corrosion test using salt spray chamber.
- Post exposure test (Pencil Hardness & Color Meter).

SAMPLE PREPARATION

- Cutting pipe/tube dumb bell.
- Cutting plate/H-Beam dumb bell.
- Cutting specimen impact test 7X10X55 & 10x10x55.
- Polisher/Grinder.

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