# PERFORMANCE TESTING FACILITIES

## ELAB 132

**Max Vertical Load : 10,000 kN**
**Max Shear Force : 1,000 kN**
**Max Shear Displacement : +/- 500mm**
**#Double Shear Configuration**
**#Single Shear Configuration**

## ELAB 140

**Max Vertical Load : 20,000kN**
**Max Shear Force : 2,000 kN**
**Max Shear Displacement : +/- 500mm**
**#Single Shear Configuration Only**

## ELAB 150

**Max Vertical Load : 50,000 kN**
**Max Shear Force : 5,000 kN**
**Max Shear Displacement : +/- 1,000mm**
**# Single Shear Configuration Only**

# RESEARCH AND DEVELOPMENT FACILITIES

## ELAB 170

Max Vertical Load : 1000 kN
Max Shear Force : 100 kN
Max Shear Displacement: +/- 200mm
#Single Shear Configuration

## ELAB 121 & ELAB 122

Max Vertical Load : 1000 kN
Static Compression Loading
Rate: 2.5 ~ 100 N/Min

## RHEOMETER

Compound Rheology Test
# Mooney
# Curing Profile

## DYNAMIC DOUBLE SHEAR

Compound Development
# Damping Ratio at Various Frequency
# Shear Modulus
# Anaerobic Ageing

NOTE: FOR SCALE DOWN SAMPLE & COMPOUND DEVELOPMENT


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MS ISO/IEC 17025
TESTING
SAMM NO. 372

Quality
ISO 9001
Cert. No: QEC 23010

**www.doshinrubber.com**

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# DOSHIN®
RUBBER ENGINEERING

## eLab Testing & Research Center


## MRT

***Mechanical Pot bearings and Elastomeric Rubber Bearings***


## Penang Second Bridge

***Seismic Isolation High Damping Rubber Bearings***

## LRT

***Mechanical Pot Bearings***

# Schedule

# No: SAMM 372

MS ISO/IEC 17025
TESTING
SAMM NO. 372

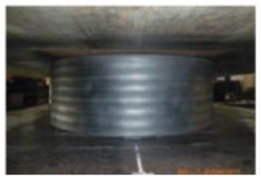
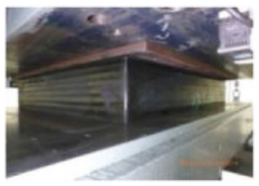
Quality ISO 9001 Cert. No: QEC 23010

This laboratory accredited under Skim Akreditasi Makmal Malaysia (SAMM) meets the requirements of MS ISO-IEC 17025:2005 General requirements for competence of testing and calibration laboratories. This Malaysian Standards is identical with ISO-IEC 17025:2005 published by the International Organization for Standardization (ISO).

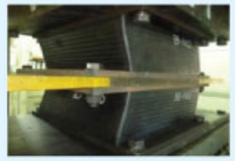
## FIELD OF TESTING : MECHANICAL

### SCOPE OF ACCREDITATION:

#### PRODUCT: LAMINATED ELASTOMERIC BEARING

| Type of Test | Test Method |
|---|---|
| **Compression Quality Assurance Test**   | AS 5100: Part 4 (2004) [Appendix D2]<br>BS 5400-1983 Section 9.2 Clause 7.2 (b)(i) |
| | BS 6177:1982 Clause 9.3 (Safe Carrying Capacity Test) |
| | BS 6177:1982 Clause 9.4 (Stablility Test) |
| | RMS B281 Clause 2.2.7 (Apr' 12) |
| | BSEN 1337-3:2005 (Annex H: Level1) |
| **Compression Stiffness**   | AS 5100: Part 4 (2004) [Appendix D3]<br>BS 5400-1983 Section 9.2 Clause 7.2(b)(ii) |
| | AASHTO Sec.18 (2003) Clause 18.7.4.5.6 (Short Duration) |
| | AASHTO Sec.18 (2003) Clause 18.7.4.5.7 (Long Duration) |
| | RMS B281 Clause 2.2.4 (Apr' 12) |
| | RMS B281 Clause 2.2.6 (Apr' 12) (Applied Rotation) |
| | RTA B280 Clause 2.2.4 (2011) |
| | BSEN 1337-3:2005 (Annex H: Level2) |
| | BS 6177:1982 Clause 9.6 |

#### PRODUCT: LAMINATED ELASTOMERIC BEARING ( Continue )

| Type of Test | Test Method |
|---|---|
| **Shear Stiffness #Single Shear**  | AS 5100: Part 4 (2004) [Appendix D4] |
| | BS 5400-1983 Section 9.2 Appendix A |
| | BSEN 1337-3:2005 [Annex F.7.2] |
| | BS 6177:1982 Clause 9.5 (Single Shear Configuration) |
| **#Double Shear**  | BS 6177:1982 Clause 9.5 (Double Shear Configuration) |
| | RMS B281 Clause 2.2.5 (Apr' 12) |
| | RTA B280 Clause 2.2.5 (2011) |
| | AASHTO Sec.18 (2003) Clause 18.7.4.5.8 |

#### PRODUCT: SEISMIC BEARING (HIGH DAMPING RUBBER BEARING)

| Type of Test | Test Method |
|---|---|
| **Compression Quality Assurance Test**  | BSEN 15129:2009 Clause 8.2.1.2.6 Compression under Zero Lateral Displacement |
| | BSEN 15129:2009 Clause 8.2.1.2.7 |
| **Compression Stiffness**  | BSEN 15129:2009 Clause 8.2.1.2.8 |
| **Horizontal Capacity**  | BSEN 15129:2009 Clause 8.2.1.2.5 Horizontal Characteristics On Repeated Cycling |

#### PRODUCT: MECHANICAL POT BEARING

| Type of Test | Test Method |
|---|---|
| **Compression Quality Assurance Test**  | BSEN 1337-5:2005 (Annex B) |
| | BS 5400:1983 Section 9.2 Clause 7.2 (b) |
| | AASHTO Sec.18 (2003) Clause 18.7.2.5 Short-term Compression Proof Load Test |
| | AASHTO Sec.18 (2003) Clause 18.7.2.6 Long-term Compression Proof Load Test |
| **Compression Stiffness**  | BSEN 1337-5:2005 [ Annex B ] |
| | BS 5400:1983 Section 9.2 Clause 7.2 (b) |
| **Vertical Load Test**  | AASHTO Sec.18 (2003) Clause 18.7.2.5 |
| | AASHTO Sec.18 (2003) Clause 18.7.2.6 |
| **Horizontal Load Test**  | BS 5400:1983 Section 9.2 Clause 7.2 (b) |
| | AASHTO Sec.18 (2003) Clause 18.7.2.9 (Fixed or Guided Bearings Only) |

**FENDER TESTING:**

**Max Vertical Load : 10,000 kN**
**- Energy Absorption**
**Reaction Force**
**(Standard PIANC 2002)**