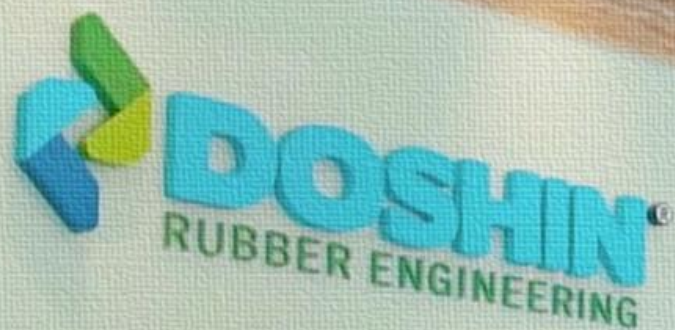
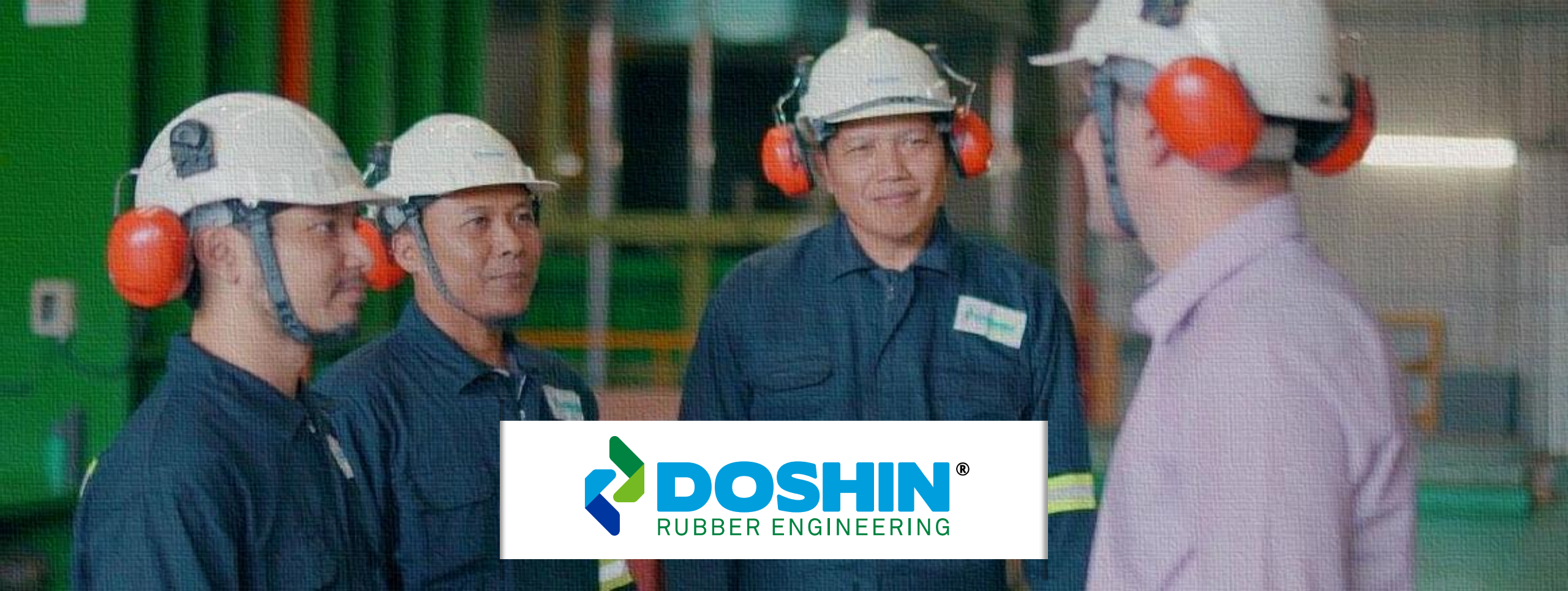


KOSSAN



"GO BEYOND LIMITS MAKE DREAMS REAL"





ESTABLISHED IN YEAR 1978

A subsidiary of



STRETCHING LIMITS • SINCE 1979



GO BEYOND LIMITS
MAKE DREAMS REALITY

VISION

“ To be the world class market leader in Engineering Rubber Products driven by technological advancement, people value and continual improvement to deliver long term and sustainable growth “

QUALITY POLICY

“ We strive beyond customers’ quality requirements through continuous improvement plans with specific attention to technical excellence and innovation “

CERTIFICATIONS

Certificate

Standard **ISO 9001:2015**
Certificate Registr. No. 01 100 2035867

Certificate Holder: **Doshin Rubber Products (M) Sdn Bhd**
Quality Profile Sdn Bhd
Lot PT 34252, Jalan Sekolah, Rantau Panjang,
42100 Klang, Selangor
Malaysia

Scope: Design, Development, Manufacture, Testing and Installation of
Elastomeric Bearings, Mechanical Pot Bearings High Damping
Rubber Bearings, Friction Pendulum Bearings, Lead Rubber
Bearings, Floating Slab Track Bearings, Steel & Rubber
Expansion Joints, Marine Fenders, Spherical Bearings, Dampers
and Other Engineered Rubber Product and Metal Products for
Bridges, Buildings, Railways, Tramways, Marine, Mining, Oil &
Gas, Nuclear Plants and Other Civil Engineering Applications
Proof has been furnished by means of an audit that the
requirements of ISO 9001:2015 are met.

Validity: The certificate is valid from 2025-10-03 until 2028-10-02.
First certification 2020

2025-08-18

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com IAF DAKS TÜVRheinland®
Deutsche
Akreditierungsstelle
D-50669 Köln

Precisely Right.

QUALITY SYSTEM MANAGEMENT
ISO 9001:2015

S/N: 1209

**STANDARDS
MALAYSIA**

Certificate of Accreditation

No: SAMM 372 Accredited since: 14 September 2007

This is to certify that

elab TESTING & RESEARCH CENTER
DOSHIN RUBBER PRODUCTS (M) SDN BHD
KLANG, SELANGOR
MALAYSIA

has been granted accreditation in respect of the scope of accreditation
described in the schedule, subject to the terms and conditions governing the
Skim Akreditasi Makmal Malaysia (SAMM), the Laboratory Accreditation
Scheme of Malaysia.

Laboratories accredited under SAMM meet the requirements of MS ISO/IEC
17025. This Malaysian Standard is identical with ISO/IEC 17025 published by
the International Organization for Standardization (ISO).

(DATUK FADILAH BAHARIN)
Director General
Department of Standards Malaysia

Date of issue: 26 June 2019

Issuance of this Certificate is governed by Section 16 Subsections (2) and (3) of Standards of Malaysia Act 1996 (Act 549)

LABORATORY ACCREDITATION
SKIM AKREDITASI MAKMAL MALAYSIA(SAMM)
MS ISO / IEC 17025

PRODUCT CERTIFICATE OF CONFORMITY

Certificate Number : IKRAM 00325MB

Certificate Holder
DOSHIN RUBBER PRODUCTS (M) SDN. BHD.
Lot PT 34252, Jalan Sekolah, Rantau Panjang
42100 Klang, Selangor Darul Ehsan, Malaysia

Product Name
Elastomeric Bearing

Standard
EN 1337 - 3 : 2005

Product Description
Product descriptions shall refer to ANNEX

Brands
DOSHIN

Manufacturer
DOSHIN RUBBER PRODUCTS (M) SDN. BHD.
Lot PT 34252, Jalan Sekolah, Rantau Panjang
42100 Klang, Selangor Darul Ehsan, Malaysia

Date of Original Issue 13.03.2025	Date of Renewal 27.04.2026	Date of Amendment NIL	Expiry Date 31.03.2027
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MOHAMAD AKHER BIN ABDULLAH
Director

DATO' Ir. Ts. HAJI MOHD TAUFIK BIN HARON
Chairman

Page 1 of 3

PRODUCT CERTIFICATE
ELASTOMER BEARING
EN 1337-3

QUALITY CERTIFICATION



CE CERTIFICATION
ISO 14001:2015 | ISO 45001:2018

QUALITY MANAGEMENT SYSTEM
Which Complies with the requirements

ISO 9001:2015
ISO 14001:2015
ISO 45001:2018

For the following Scope:

Design development, Manufacture, Testing and Installation of Elastomeric bearings, Mechanical Pot Bearings, High Damping Rubber Bearings, Floating Slab Track Bearings , Steel and Rubber Expansion joints, Marine Fenders, Spherical Bearings, dampers and other Engineered Rubber Products and Metal Products for Bridges, Buildings, Railways, Tramways, Marine, Mining, Oil and Gas, Nuclear Plants and others Civil Engineering application.

CERTIFICATIONS

ZÚS **TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.**
Technical and Test Institute for Construction Prague, S0E
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznamovaný subjekt, Súhlas pro technická posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorized Body, Notified Body, Technical Assessment Body, Certification Bodies, Inspection Body • Prosecká 811/76a, Prosek, 190 00 Praha 9, Czech Republic

Notified Body 1020

**CERTIFICATE
OF CONSTANCY OF PERFORMANCE**

No. 1020 – CPR – 090-052754

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

Anti-seismic devices
Variant: **Elastomeric isolators**
Type: **High damping rubber bearings (HDRB)**
placed on the market under the name or trade mark of

Doshin Rubber Products (M) Sdn Bhd.
Identification No.: H 114836
Address: Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Klang, Selangor/ Malaysia
and produced in the manufacturing plant:

Doshin Rubber Products (M) Sdn Bhd.
Identification No.: H 114836
Address: **Plant 1:** Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Klang, Selangor/ Malaysia
Plant 2: No. 14, Jalan Sungai Beting 2, Off Jalan Sungai Putus, 42100 Klang, Selangor/ Malaysia

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 15129:2009
under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on 6th September 2021 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

The stamp of the Notified Body 1020
Prague, 1st October 2021


Martin Pešek
Deputy Manager of the Notified Body

CE CERTIFICATION
HDR BEARING
EN15129

ZÚS **TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.**
Technical and Test Institute for Construction Prague, S0E
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznamovaný subjekt, Súhlas pro technická posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorized Body, Notified Body, Technical Assessment Body, Certification Body, Inspection Body • Prosecká 811/76a, 190 00 Praha 9 - Prosek, Czech Republic

Notified Body 1020

**CERTIFICATE
OF CONSTANCY OF PERFORMANCE**

No. 1020 – CPR – 090-044021

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

Anti-seismic devices
variant: **Elastomeric isolators**
type: **Lead rubber bearings (LRB)**
placed on the market under the name or trade mark of

Doshin Rubber Products (M) Sdn Bhd.
Identification No.: H 114836
Address: Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Klang, Selangor, Malaysia
and produced in the manufacturing plant:

Doshin Rubber Products (M) Sdn Bhd.
Identification No.: H 114836
Address: **Plant 1:** Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Klang, Selangor, Malaysia
Plant 2: No. 14, Jalan Sungai Beting 2, Off Jalan Sungai Putus, 42100 Klang, Selangor, Malaysia

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 15129:2009
under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on 20.03.2019 will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

The stamp of the Notified Body 1020
Prague, 9th January 2020


Martin Pešek
Deputy Manager of the Notified Body

CE CERTIFICATION
LR BEARING
EN15129

ZÚS **TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.**
Technical and Test Institute for Construction Prague, S0E
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznamovaný subjekt, Súhlas pro technická posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorized Body, Notified Body, Technical Assessment Body, Certification Body, Inspection Body • Prosecká 811/76a, 190 00 Praha 9 - Prosek, Czech Republic

Notified Body 1020

**CERTIFICATE
OF CONSTANCY OF PERFORMANCE**

No. 1020 – CPR – 090-044865

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

Anti-seismic devices
variant: **Curved Surface Sliders**
type: **PENDULUM Bearings**
placed on the market under the name or trade mark of

Doshin Rubber Products (M) Sdn Bhd.
Identification No.: H 114836
Address: Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Klang, Selangor, Malaysia
and produced in the manufacturing plant:

Doshin Rubber Products (M) Sdn Bhd.
Identification No.: H 114836
Address: **Plant 1:** Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Klang, Selangor, Malaysia
Plant 2: No. 14, Jalan Sungai Beting 2, Off Jalan Sungai Putus, 42100 Klang, Selangor, Malaysia

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 15129:2009
under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on 13 June 2019 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

The stamp of the Notified Body 1020
Prague, 9th January 2020


Martin Pešek
Deputy Manager of the Notified Body

CE CERTIFICATION
PENDULUM BEARING
EN15129

CERTIFICATIONS

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague, SdE
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznámený subjekt, Subjekt pro technické posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorized Body, Notified Body, Technical Assessment Body, Certification Body, Inspection Body • Prosecká 811/76a, 190 00 Praha 9 - Prosek, Czech Republic

Notified Body 1020

**CERTIFICATE
OF CONSTANCY OF PERFORMANCE**

No. 1020 – CPR – 090-044887

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

STRUCTURAL BEARING
variant: elastomeric bearing

Type A – laminated bearing fully covered with elastomer comprising only one steel reinforcing plate; Type B – bearing fully covered with elastomer comprising at least two steel reinforcing plates; Type C – laminated bearing with outer steel plates (profiled or allowing fixing)

placed on the market under the name or trade mark of
Doshin Rubber Products (M) Sdn Bhd.

Identification No.: H 114836
Address: Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Kiang, Selangor, Malaysia

and produced in the manufacturing plant:
Doshin Rubber Products (M) Sdn Bhd.

Identification No.: H 114836
Address: **Plant 1:**
Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Kiang, Selangor, Malaysia
Plant 2:
No.14, Jalan Sungai Beting 2, Off Jalan Sungai Putus, 42100 Kiang, Selangor, Malaysia

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 1337-3:2005

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on 18 June 2019 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

The stamp of the Notified Body 1020
Prague, 9th January 2020

Martin Pešek
Deputy Manager of the Notified Body

CE CERTIFICATION
ELASTOMER BEARING
EN1337-3

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague, SdE
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznámený subjekt, Subjekt pro technické posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorized Body, Notified Body, Technical Assessment Body, Certification Bodies, Inspection Body • Prosecká 811/76a, Prosek, 190 00 Praha 9, Czech Republic

Notified Body 1020

**CERTIFICATE
OF CONSTANCY OF PERFORMANCE**

No. 1020 – CPR – 090-054437

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

STRUCTURAL BEARINGS
Variant: Pot bearings
Type: Fixed, Guided and Free sliding bearings

placed on the market under the name or trade mark of
Doshin Rubber Products (M) Sdn Bhd.

Identification No.: H 114836
Address: Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Kiang, Selangor/ Malaysia

and produced in the manufacturing plant:
Doshin Rubber Products (M) Sdn Bhd.

Identification No.: H 114836
Address: **Plant 1:**
Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Kiang, Selangor/ Malaysia
Plant 2:
No.14, Jalan Sungai Beting 2, Off Jalan Sungai Putus, 42100 Kiang, Selangor/ Malaysia

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 1337-5:2005

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on 27th January 2022 will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

The stamp of the Notified Body 1020
Prague, 27th January 2022

Martin Pešek
Deputy Manager of the Notified Body

CE CERTIFICATION
POT BEARING
EN1337-5

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague, SdE
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznámený subjekt, Subjekt pro technické posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorized Body, Notified Body, Technical Assessment Body, Certification Bodies, Inspection Body • Prosecká 811/76a, Prosek, 190 00 Praha 9, Czech Republic

Notified Body 1020

**CERTIFICATE
OF CONSTANCY OF PERFORMANCE**

No. 1020 – CPR – 090-052752

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

STRUCTURAL BEARINGS
Variant: Spherical bearings
Type: Fixed, one-way, multi-way

placed on the market under the name or trade mark of
Doshin Rubber Products (M) Sdn Bhd.

Identification No.: H 114836
Address: Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Kiang, Selangor/ Malaysia

and produced in the manufacturing plant:
Doshin Rubber Products (M) Sdn Bhd.

Identification No.: H 114836
Address: **Plant 1:**
Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Kiang, Selangor/ Malaysia
Plant 2:
No.14, Jalan Sungai Beting 2, Off Jalan Sungai Putus, 42100 Kiang, Selangor/ Malaysia

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 1337-7:2004

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on 6th September 2021 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

The stamp of the Notified Body 1020
Prague, 1st October 2021

Martin Pešek
Deputy Manager of the Notified Body

CE CERTIFICATION
SPHERICAL BEARING
EN1337-7

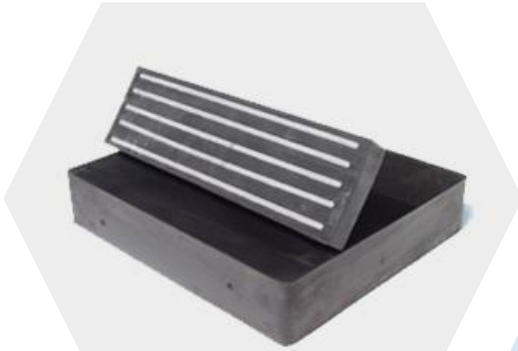
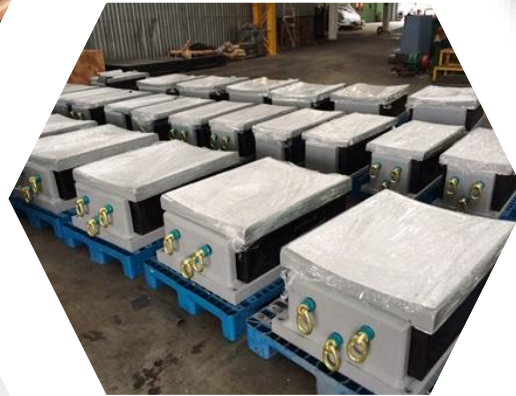
PRODUCTS



A SOLUTION FOR ENGINEERED RUBBER AND STEEL PRODUCTS FOR BRIDGES,
BUILDINGS, RAILWAYS, MININGS, AND OTHER CIVIL ENGINEERING APPLICATIONS

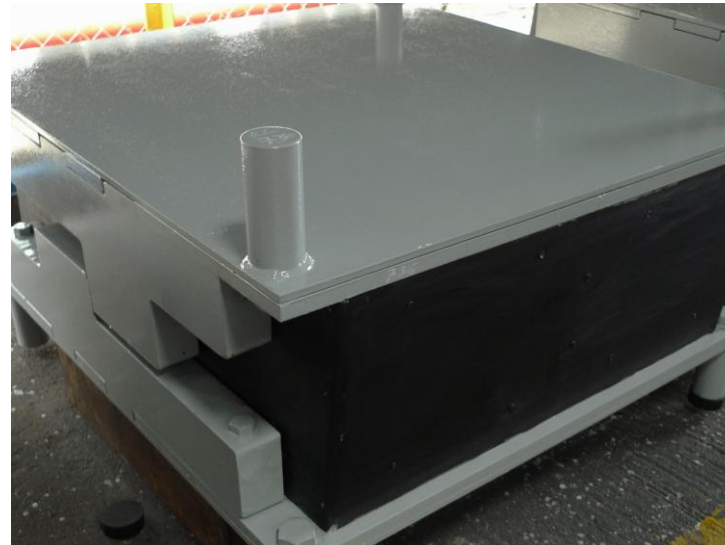
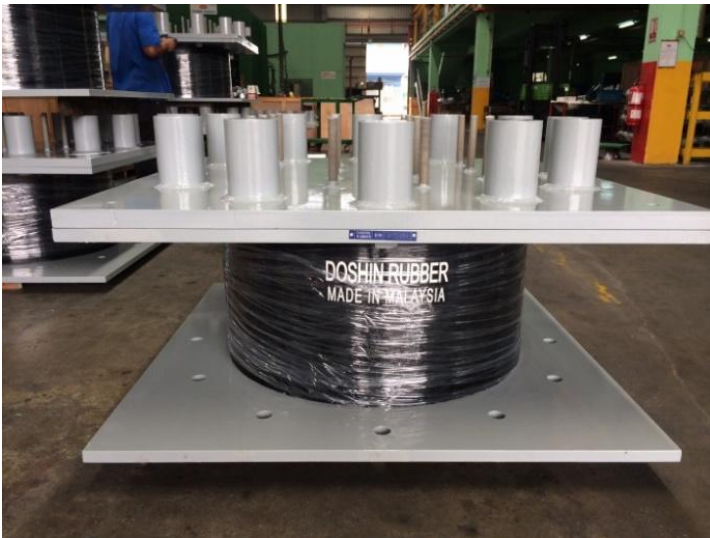
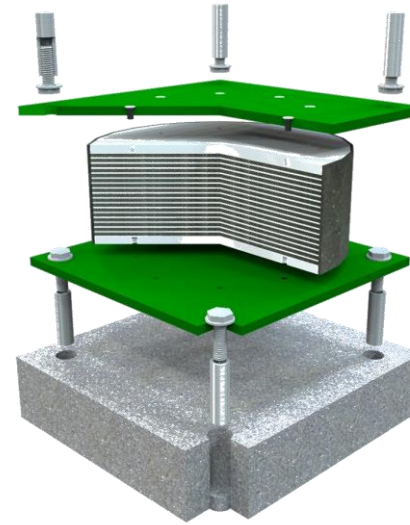
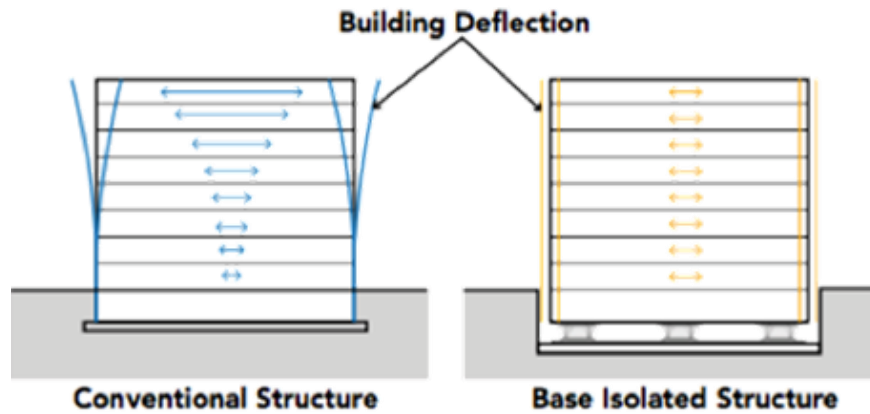
ELASTOMERIC BEARINGS

To design, produce, and test to meet BS, EN, AS, AASHTO and other international specs

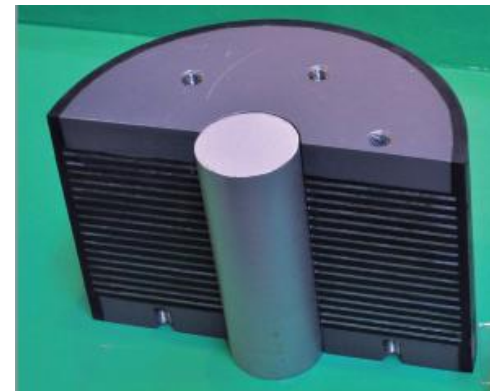
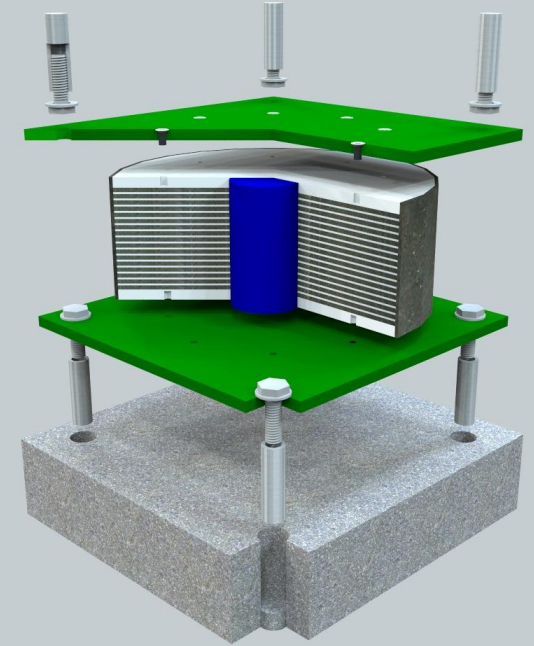
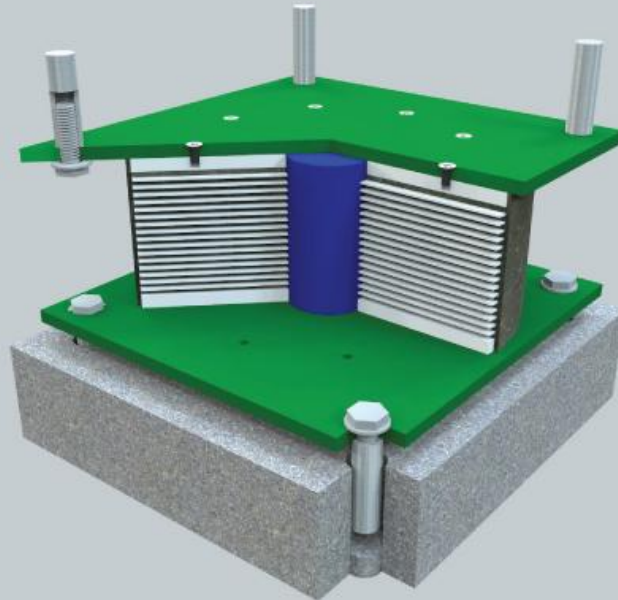
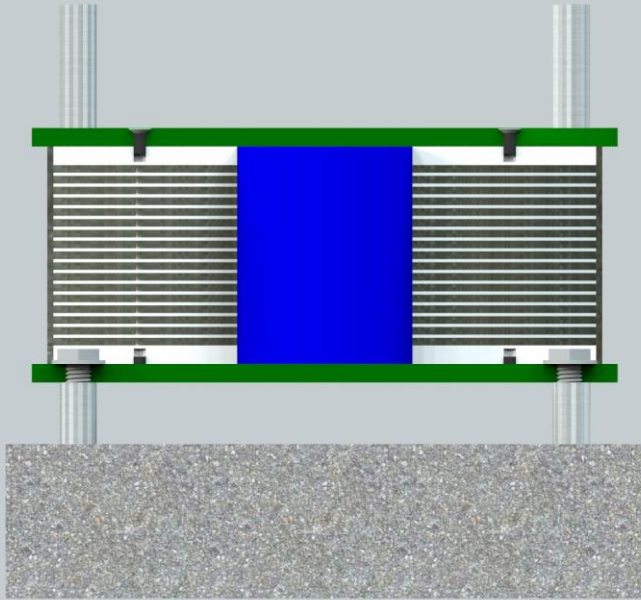


HIGH DAMPING RUBBER BEARINGS

Design & Produce UHDRB with damping ratio up to 24%



LEAD RUBBER BEARINGS



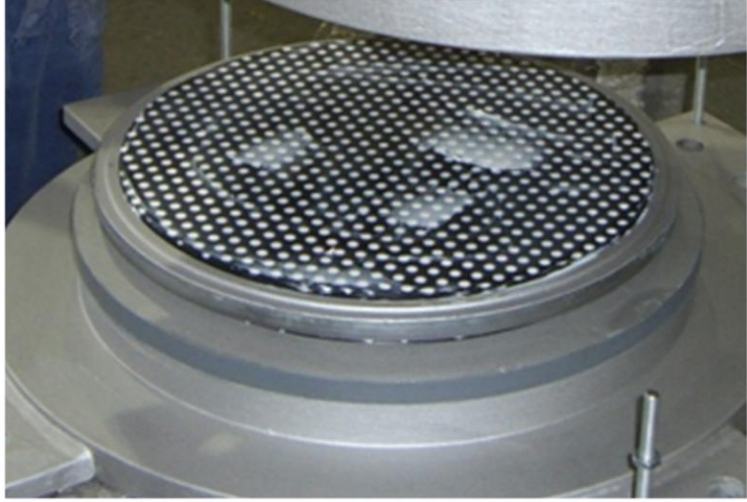
MECHANICAL POT BEARINGS



Design, Fabricate, Testing and Install POT BEARINGS up to vertical load 50,000 KN



SPHERICAL BEARINGS



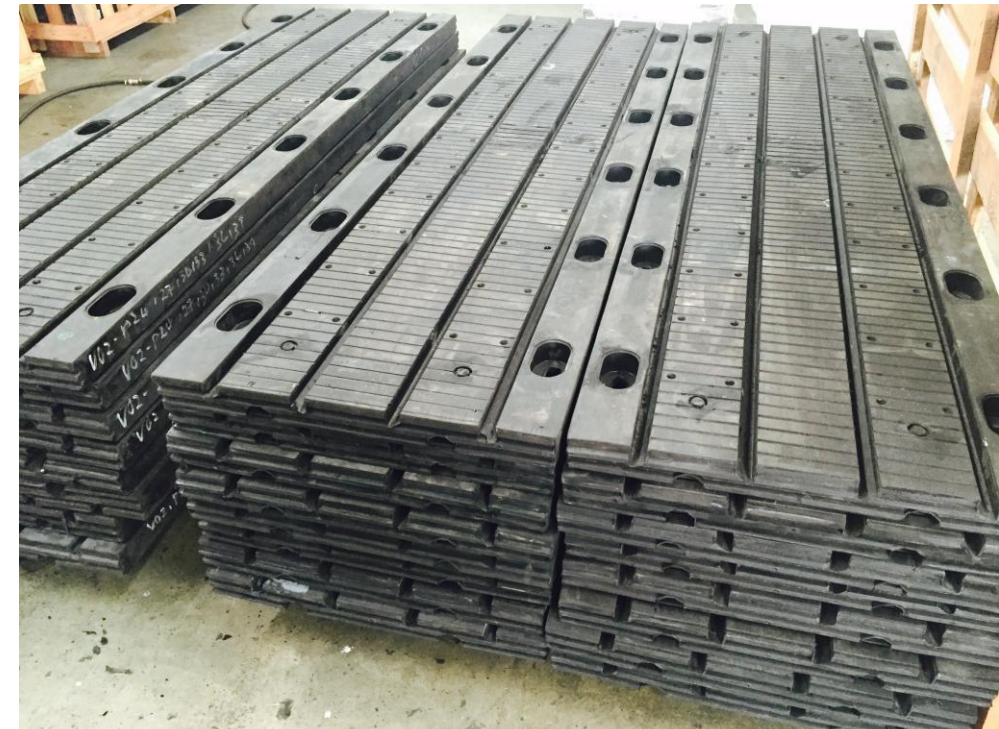
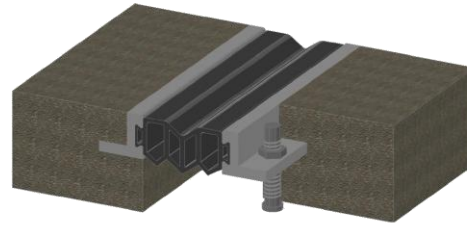
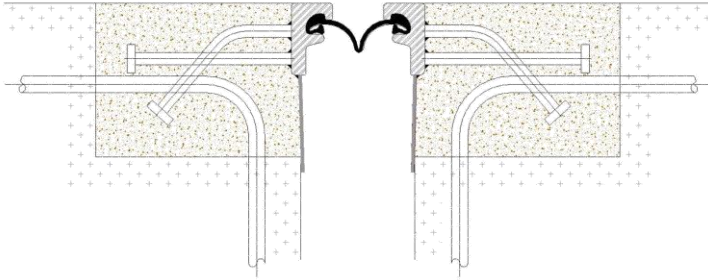
Doshin Spherical bearings are designed for very high vertical, horizontal and lateral loads and where large rotational structural displacements need to be accommodated.



EXPANSION JOINTS AND SEALS

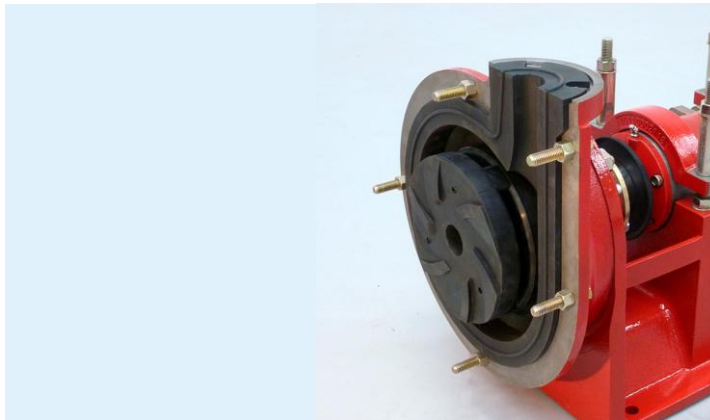
TYPES OF JOINTS:

1. Elastomer Expansion Joints
2. Modular Joints (3 DOF)
3. Finger Joint (DFJ)
4. Compression Seals

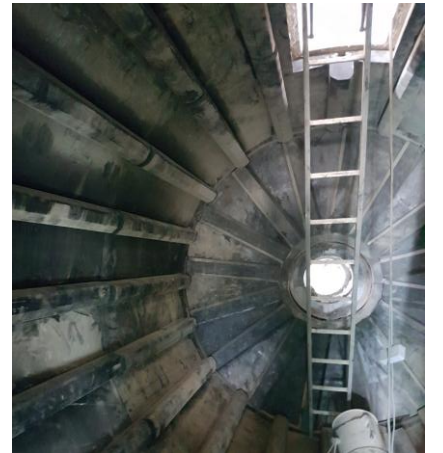
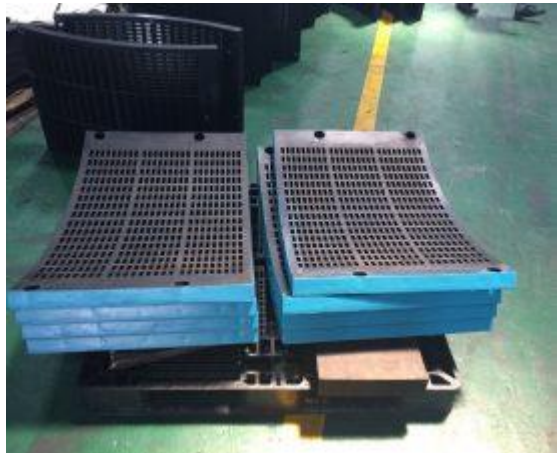


MINING RUBBER PRODUCTS

Superior wear resistant rubber compound formulation

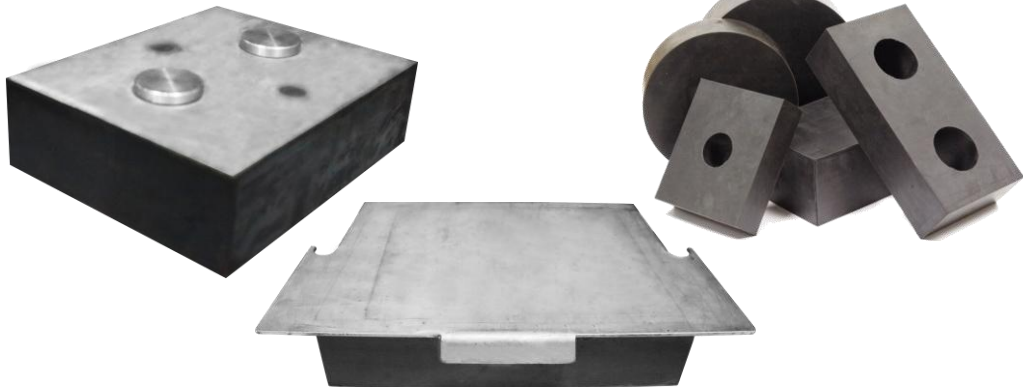


MINING RUBBER PRODUCTS



RAILWAY RUBBER PRODUCTS

- A proven mass-spring system for achieving very high levels of noise & vibration isolation
- Floating slab track (FST), rubber wedge, rail fastening



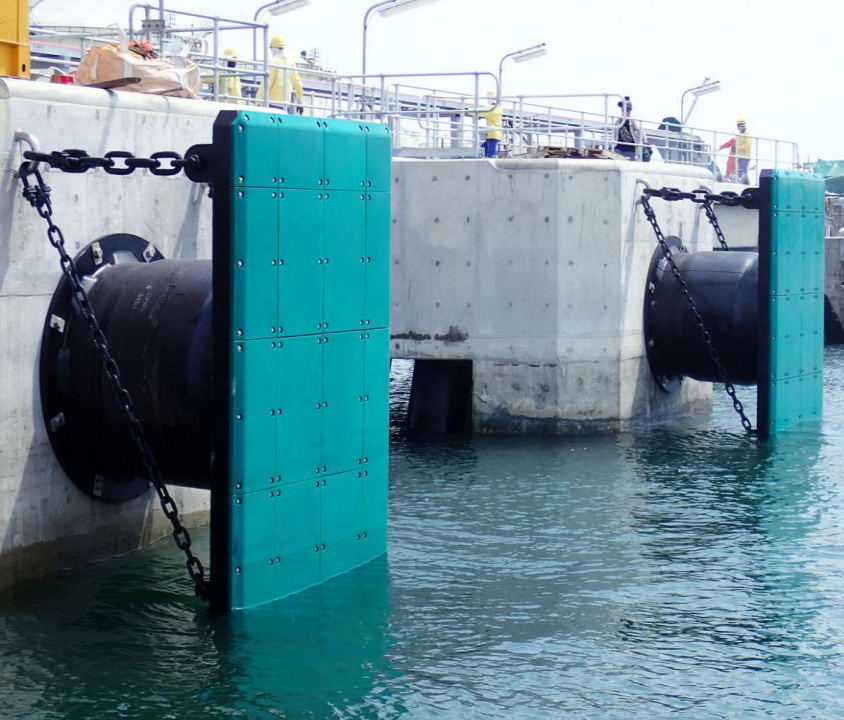
TRAMWAY & LIGHT RAIL

Special formulated electrical Insulated rubber technology Electrical resistivity ground-level power supply (APS 3) and Static Charging System (SRS) for Alstom's Trams



APS is a service-proven power system for tramways which supplies electricity through a third rail at ground level and eliminates the need for catenaries, thus preserving the aesthetics of city center and guaranteeing maximum safety.





MARINE DOCK FENDERS



- To perform as bumper to protect the hull and bearing facility from damages



- To perform as a shock absorber on the bearing operation

MANUFACTURING FACILITIES





MANUFACTURING FACILITIES – MIXING

- ❖ Mixing capacity up to 2000 tons compound per month
- ❖ Farrell Chronos Richardan mixing 80L & 160L
- ❖ ST rotor variable speed
- ❖ Temperature control
- ❖ Chronos auto material feeding system



MANUFACTURING FACILITIES



VARIOUS MOULDING MACHINES FROM
500 TONS TO 2000 TONS



INJECTION TO FENDER AT
1500KG/HR



3 UNITS GEAR PUMP EXTRUDER
1500KG/HR



2000 TONS CLAMPING MACHINE
3.5M X 3.5M X 3.0M DAYLIGHT



1200 TONS COMPRESSION PRESS
1.2M X 2.2M



SHEETING PREFORM MACHINE

MANUFACTURING FACILITIES



CNC



2000 TONS COMPRESSION MACHINE
1.2M X 3.2M



2000 TONS COMPRESSION MACHINE
3.5M X 3.5M X 3M



2000 TONS COMPRESSION MACHINE
1.5M X 3.5M



2000 TONS COMPRESSION MACHINE
2.2M X 2.2M



1800 TONS HYDRAULIC BUILT
INTO AUTOLAVE FOR CURING

E-LAB TESTING & RESEARCH CENTER

CERTIFIED TO ISO/IEC 17025



Innovating the best testing machines with our well trained engineers for engineered rubber solution

E-LAB TESTING & RESEARCH CENTER

Schedule
No: SAMM 372

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)



Management
System
ISO 9001:2015

www.tuv.com
ID 9000009626



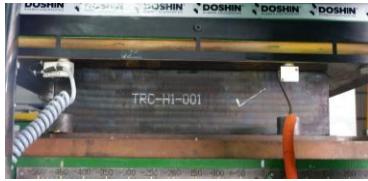
E-LAB TESTING & RESEARCH CENTER

FIELD OF TESTING : MECHANICAL

Scope of Accreditation:

Product: Laminated Elastomeric Bearings, Elastomeric Bearing Pads and Strips

Type of Test	Test Method
SHEAR STIFFNESS #Single Shear 	AS 5100. 4 [Appendix D4] BS 5400 – 9.2 [Appendix A] AASHTO Sec. 18 [Clause 18.7.4.5.8] EN 1337-3 [Annex F]
#Double Shear 	TfNSW B281 [Clause 4.5] TfNSW B280 [Clause 4.5] BS 6177 [Clause 9.5]

Type of Test	Test Method
COMPRESSION QUALITY ASSURANCE TEST  	AS 5100. 4 [Appendix D2] BS 5400 – 9.2 [7.2 b) 2) i)] AASHTO Sec. 18 [Clause 18.7.4.5.6] EN 1337 – 3 [Annex H – Level 2] BS 6177 [Clause 9.3]
COMPRESSION STIFFNESS  	AS 5100. 4 [Appendix D3] BS 5400 – 9.2 [7.2 b) 2) ii)] EN 1337 – 3 [Annex H – Level 1] BS 6177 [Clause 9.6] TfNSW B281 [Clause 4.4] TfNSW B280 [Clause 4.4]

E-LAB TESTING & RESEARCH CENTER

Product: SEISMIC ISOLATORS

Type of Test	Test Method
COMPRESSION QUALITY ASSURANCE TEST 	EN 15129 [Clause 8.2.1.2.6]
COMPRESSION STIFFNESS 	BSEN 15129 [Clause 8.2.1.2.8]
HORIZONTAL CAPACITY 	BSEN 15129 [Clause 8.2.1.2.7]

Notes:

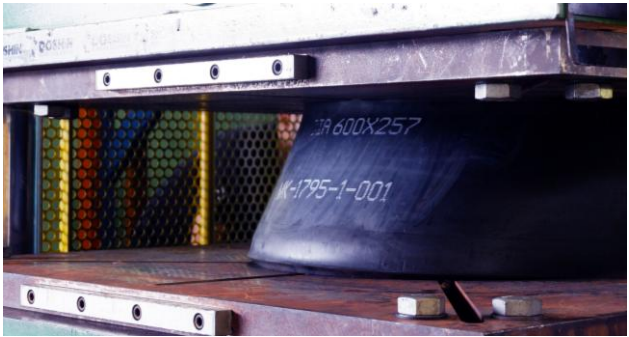
HDRB : High Damping Rubber Bearing

LRB : Lead Rubber Bearing

NRB : Natural Rubber Bearing

Product: STRUCTURAL BEARINGS
(SPHERICAL BEARINGS AND MECHANICAL POT BEARINGS)

Type of Test	Test Method
COMPRESSION STIFFNESS 	BSEN 1337 – 5 [Annex B] BS 5400 – 9.2 [7.2 b) 2) i)]
LOAD TEST 	BS 5400 – 9.2 [7.2 b) 1)] AASHTO Sec. 18 [Clause 18.7.2.5] AASHTO Sec. 18 [Clause 18.7.2.6] AASHTO Sec. 18 [Clause 18.7.2.9]
FRICTION TEST 	AASHTO Sec. 18 [Clause 18.7.2.7]
ROTATION TEST 	AASHTO Sec. 18 [Clause 18.7.2.4]



BEARING SHEAR STIFFNESS TEST



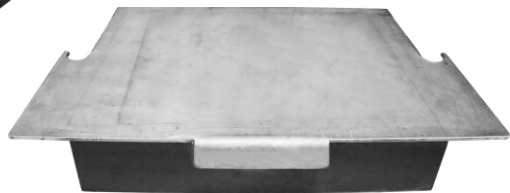
TEST SYSTEM WITH LARGE CAPACITY



COMBINED COMPRESSION & SHEAR TEST



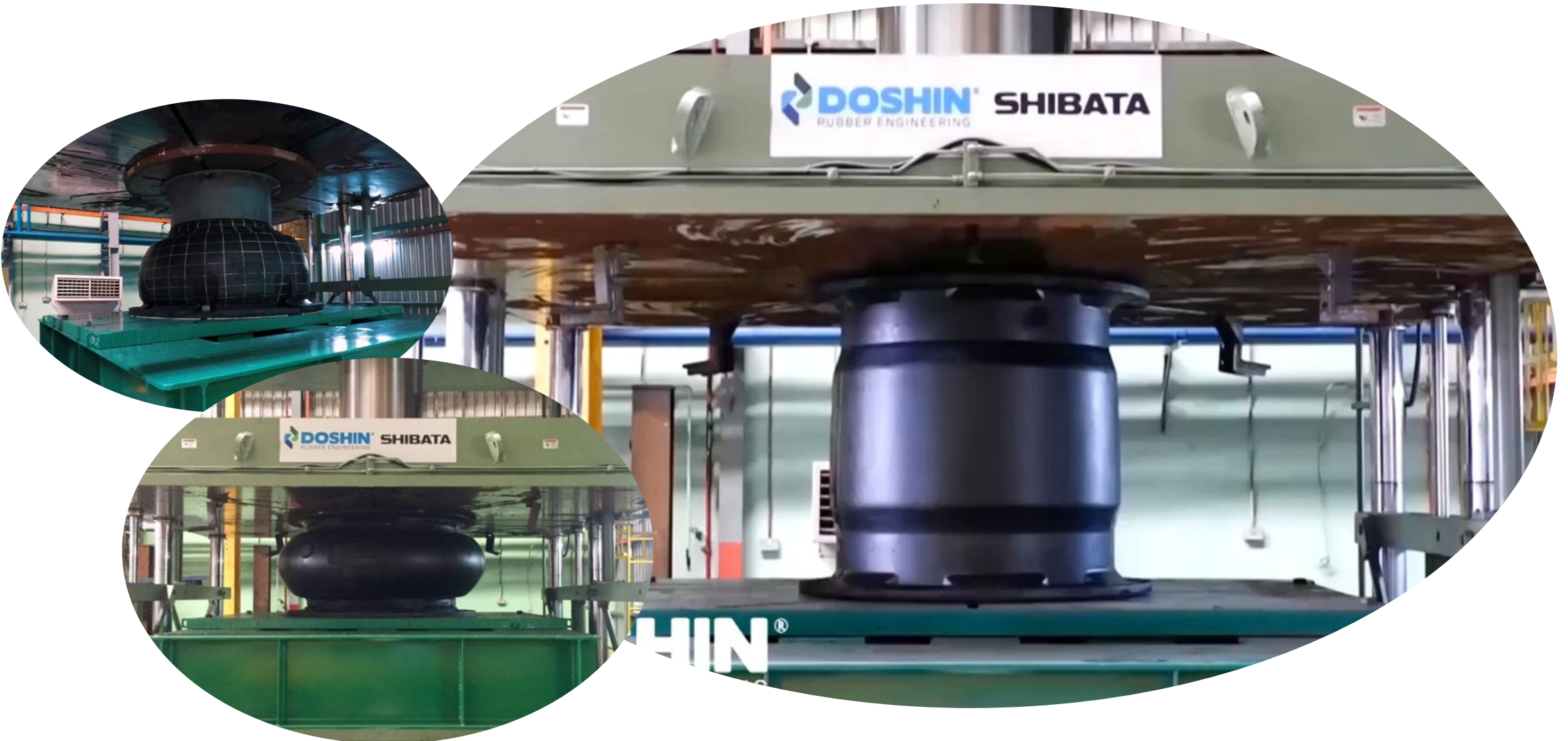
RUBBER SPRING TEST



FENDERS COMPRESSION TEST



FENDER ENERGY ABSORPTION & REACTION FORCE TEST



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A. RUBBER MATERIAL TESTING

- ✓ Tensile Properties Test
- ✓ Hardness Test (ASTM Shore A, JIS Shore A, IRHD)
- ✓ Hot Air Heat Aging Test
- ✓ Compression Set Test
- ✓ Ozone Resistance Test
- ✓ Quadruple Shear Test
- ✓ ISO/DIN Abrasion Resistance Test
- ✓ Low Temperature Brittleness Test
- ✓ Density/SG Test
- ✓ Rheology Test
- ✓ Tear Resistance Test (Trouser and Crescent)
- ✓ Fluid/Oil Immersion Test.
- ✓ Rebound Resilience Test

B. PRODUCT / PART PERFORMANCE TESTING

- ✓ Static Compression/Load Deflection test
- ✓ Dynamic Spring Rate Test
- ✓ Durability/Endurance/Life Test
- ✓ Adhesion Strength Test



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SCOPE OF KOSSAN AND
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TEST & MEASUREMENT
CAPABILITIES



PROJECTS REFERENCE



SEISMIC ISOLATOR

High Damping Rubber Bearing, Lead Rubber Bearing & Natural Rubber Bearing

- Metrobus Alto De Sao Joao, Portugal
- Hospital Las Higueras III Etapa, Chile
- Hospital Arakaki, Peru Hospital Cascas, Peru
- Clinica Materno Infantil, Peru
- Jorge Chavez International Airport, Peru
- Edmundo Escomel Hospital, Peru
- Clinica Aviva, Peru
- Hospital Matucana, Peru
- Ampliacion Edificio Maria Nieves Bustamante UCSP, Peru
- Campus UTEC Fase II, Peru
- Alto Molino, Peru
- Hospital Chulucana, Peru
- Hospital Caraz, Peru
- Puente Ancaylla, Peru
- Maranura Bridge, Peru
- Hospital Pomabamba, Peru
- Hospital Del Salvador, Chile
- Hospital Claudio Vicuna, Chile
- Hospital Marga Marga, Chile
- Servico Medicio Legal, Chile
- Red Hospitalaria Maule, Chile
- Hospital Sótero Del Río, Chile
- Hospital Buin Paine, Chile
- San Lazaro Hospital, Philippines
- San Vicente De Paul Church, Philippines
- Laoag By-Pass Bridge, Philippines
- De La Salle Lipa Mabini Building, Philippines
- Dong Thap Bridge, Vietnam
- Retrofitting, Bayint Naung Bridge, Yangon, Myanmar
- Temburong CC3 Package, Brunei
- Cikampek 2 Elevated (Japek II), Jakarta
- Wika Tower, Indonesia
- University Indonesia Hospital, Indonesia
- Penang Second Bridge Project, Malaysia
- KVMRT Line 2, Malaysia

..... and numerous other remarkable projects.

PROJECTS REFERENCE



**100% tested to AS5100, RMS
B281, RMS B280, RTA 280**



STRUCTURAL BEARING

Elastomer Laminated Bearings, Mechanical Pot Bearing & Spherical Bearing

- Freyssinet, Australia
- Australia Project, Australia
- Waikato Expressway Tamahere - Hamilton section
- Waikato Falls (Kaimanawa Rd)
- Waitara Station
- Walkerston Bypass Bridge
- Warringah Freeway Upgrade
- Watland Street to Sports Drive
- Wauru Ponds Duplication
- WDRC Bundi Road Bridge
- West Gate Tunnel Project
- Western Australia's largest road project – WA Gateway
- Wungong Rail Bridge
- Wye River Bridge
- Wyndham Road Campbell Bridge
- Yeppen Lagoon Bridge
- PJ573 Wamban Creek
- PJ620 Iron Creek
- PJ621 Tamworth Bridge Renewal
- Sunbury Road Upgrade
- Towrang Bridge Over Wollondilly River
- Tamworth Bridge
- Teemangum Street Bridge
- Thalaba & Fosterton Bridge
- Tillegra and Summer Hill Bridges
- Townsville Ring Road Stage 5
- Spring Creek
- T2E project
- South Expressway Duplication
- South Rd Superway
- Trackstar Station
- Waeger Constructions
- VLCC Jetty 2, Port of Fujairah, UAE
- RA166, Jahra Road, Kuwait
- Metro Ho Chi Minh Line 1, Vietnam
- Pescara Point Bridge, New Zealand
- 5th Mekong River Crossing Bridge, Thailand
- Intersection Road in Chiang Rai, Thailand
- Manila LRT 1 Cavite Extension Project, Philippines
- Construction of Bypass & Diversion Roads, Philippines
- Tampines Expressway, Singapore
- Cileunyi Intersection & Tol Gate Section 1, Indonesia

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STRUCTURAL BEARING

Elastomer Laminated Bearings, Mechanical Pot Bearing & Spherical Bearing

- Overpass Kemang B Project, Indonesia
- Box Girder Overpass Kemang, Indonesia
- Cisumdawu Toll Road Project Phase III, Indonesia
- Marina Cove, Johor Bahru, Malaysia
- Rapid Transit System Link (RTS Link), Malaysia & Singapore
- Razak City Apartment, Kuala Lumpur, Malaysia
- KVMRT2-Conlay Station, Kuala Lumpur, Malaysia
- BBCC Parcel 2, Kuala Lumpur, Malaysia
- LRT3, Klang Valley, Malaysia
- Klang Valley Mass Rapid Transit, Malaysia
- KVMRT, SBK Line 1, Malaysia
- SUKE Highway, Ampang, Malaysia
- DUKE Phase 2 – Tun Razak Link, Malaysia
- LRT, Malaysia
- Sungai Gombak – Jalan Kuching, Malaysia
- KLJ Line LRT Aesthetic Guideway Envelope, Malaysia
- KI Eco City, Malaysia
- Sunway Velocity Link Bridge, Kuala Lumpur, Malaysia
- Eko Cheras, Kuala Lumpur, Malaysia
- Rawang Bypass-Elevated Structure, Malaysia
- New Clover Leaf, Cyberjaya, Sepang, Malaysia
- U-Turn Setia Eco Glades, Cyberjaya, Malaysia
- Proposed Design & Build for The Remedial Works, Ampang, Malaysia
- First Penang Bridge, Malaysia
- Bayan Lepas Expressway, Penang, Malaysia
- Drawbridge, Kuala Terengganu, Malaysia
- Tanjung Lumpur Kuantan, Pahang, Malaysia
- Laluan B49 Persiaran Mokhtar Dahari, Selangor, Malaysia
- Jambatan Batang Sadong, Samarahan Bridge, Sarawak, Malaysia
- Marudi Bridge Over Batang Baram, Miri, Malaysia
- Sarawak Coastal Road, Sarawak, Malaysia
- Sungai Lingga Bridge & Approach Road, Sarawak, Malaysia
- Second Kuching-Samarahan Trunk Road, Sarawak, Malaysia
- Long Lama Bridge, Miri, Malaysia
- Sg Bintangor Bridge at Jalan Ajibah Abol, Kuching, Sarawak, Malaysia

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- Metconnx- structures South
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- MRL BR5413 Over Yandi Rail
- Mt. Crosby Bridge
- Murray
- Newcastle Inner City Bypass
- North Western Packerham
- Oakey Ck Bridge
- OH2K
- O'Keefe Street Velobridge
- Olive Downs Rail Package
- ONSLOW IRON ORE
- Ozwide 3 Bridges
- Pacific Highway Upgrade
- Parkes Bypass- Newell Highway Upgrade
- Parkes Way Widening Six Mile Creek
- Parramatta Light Rail Stage 1
- Patrick Access Ramp D
- PDR Archer River Crossing Bridge
- PJ622 Sapphire to Woolgoolga
- PJ676 Cooroy to Curragh
- PJ677 Toowoomba OCR
- Plenty River Bridge
- PMU-Burleigh to Palm Beach
- Prospect Highway
- QR Beranjondo Timber Bridges
- Ranford Pier
- RAOUL
- Reed Creek Bridge
- Rockhampton Ring Road
- RRL-E Boundary Rd
- RRL-E Project - Armstrong Rd
- SH8 Beaumont Bridge
- Sherrington's Bridge
- Shipper Drive to Helensvale Road
- Singleton Rail Bridge

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EXPANSION JOINT

Elastomeric Expansion Joints, Modular Joints & Finger Joints

- Makkah Haram, Jeddah, Saudi Arabia – Elastomeric Expansion Joints
- Central Expressway Project (CEP), Colombo, Sri Lanka – Elastomeric Expansion Joints & With Upturn
- Lebuhraya Pan Borneo, Sabah, Malaysia – Elastomeric Expansion Joints & Modular Joints
- Marudi Bridge Over Batang Baram, Sarawak, Malaysia – Elastomeric Expansion Joints & Finger Joints
- Bridge Rural Access Sector Project (BRIRAP), Papua New Guinea – Finger Joints
- Pan Borneo Highway, Sarawak, Malaysia – Elastomeric Expansion Joint & Finger Joint
- Long Lama Bridge, Miri, Malaysia – Finger Joints & Mechanical Pot Bearings
- Drawbridge, Kuala Terengganu, Malaysia – Finger Joints & Mechanical Pot Bearings
- SUKE Highway, Ampang, Malaysia – Elastomeric Expansion Joints, Elastomeric Laminated Bearings & Mechanical Pot Bearing
- Bayan Lepas Expressway, Penang, Malaysia – Elastomeric Expansion Joints, Elastomeric Laminated Bearing & Mechanical Pot Bearings
- Retrofitting, Bayint Naung Bridge, Yangon, Myanmar – Modular Joints & Finger Joints, HDRB & Mechanical Pot Bearings

MARINE DOCK FENDERS

- Semen Indonesia, Makassar, Indonesia – Marine Dock Fenders
- Palembang Indocement, Indonesia – Marine Dock Fenders
- Pangkalan Susu, Power Plant, Medan, Indonesia – Marine Dock Fenders
- VLCC Jetty 2, Port of Fujairah, UAE – Marine Dock Fenders & Mechanical Pot Bearings
- Tanjung Lumpur, Kuantan, Pahang – Marine Dock Fenders, Elastomeric Laminated Bearings & Mechanical Pot Bearings

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Lot PT 34252, Jalan Sekolah, Rantau Panjang, 42100 Klang, Selangor Darul Ehsan, Malaysia.

T +603-3290 5619; 3290 5621; 3290 5631

F +603-3290 5642

E Email: doshin@kossan.com.my