

EMERGENCY MEDIAN OPENING EMO



ROAD SAFETY PRODUCT

MILLENNIUM RELEASE SDN BHD



INTRODUCE



ROAD SAFETY PRODUCT

Millennium Release Sdn Bhd (MRSB)

Our company have 20 years of experience in Road Safety Furniture industry serve various clientele throughout Malaysia. We successfully undertaken more than 500 projects with contract value 50 -100 millions.

PRODUCTS

Emergency Median Opening

Emergency Median Opening are provided at locations on divided highways for crossing by maintenance, traffic service, emergency and low enforcement vehicles.



How it's works

Emergency Median Opening May Provide:

Where main line safety will not be compromised by providing a crossover

Where access through interchanges is not practical

As part of region maintenance operations

As necessary for low enforcement and emergency services functions

BENEFITS

- 1) Slide and swing EMO
- 2) Railing & NJB type
- 3) 40m long, 20m opening
- 4) Used M.S Rail
- 5) Jack system
- 6) Produced in Malaysia
- 7) Easy to get spare parts / Low Maintenance
- 8) TL4 (Single Lock) TL5 (Double Lock)

Our Projects

EMO- installed on Jambatan Kedua Pulau Pinang in 2013



Continue

EMO installed on Lebuhraya Pantai Timur (1 & 2) in 2014



Continue

EMO- installed along North South Expressway and ELITE highway in 2015



Continue

EMO-SS installed East Klang Valley Expressway in 2021



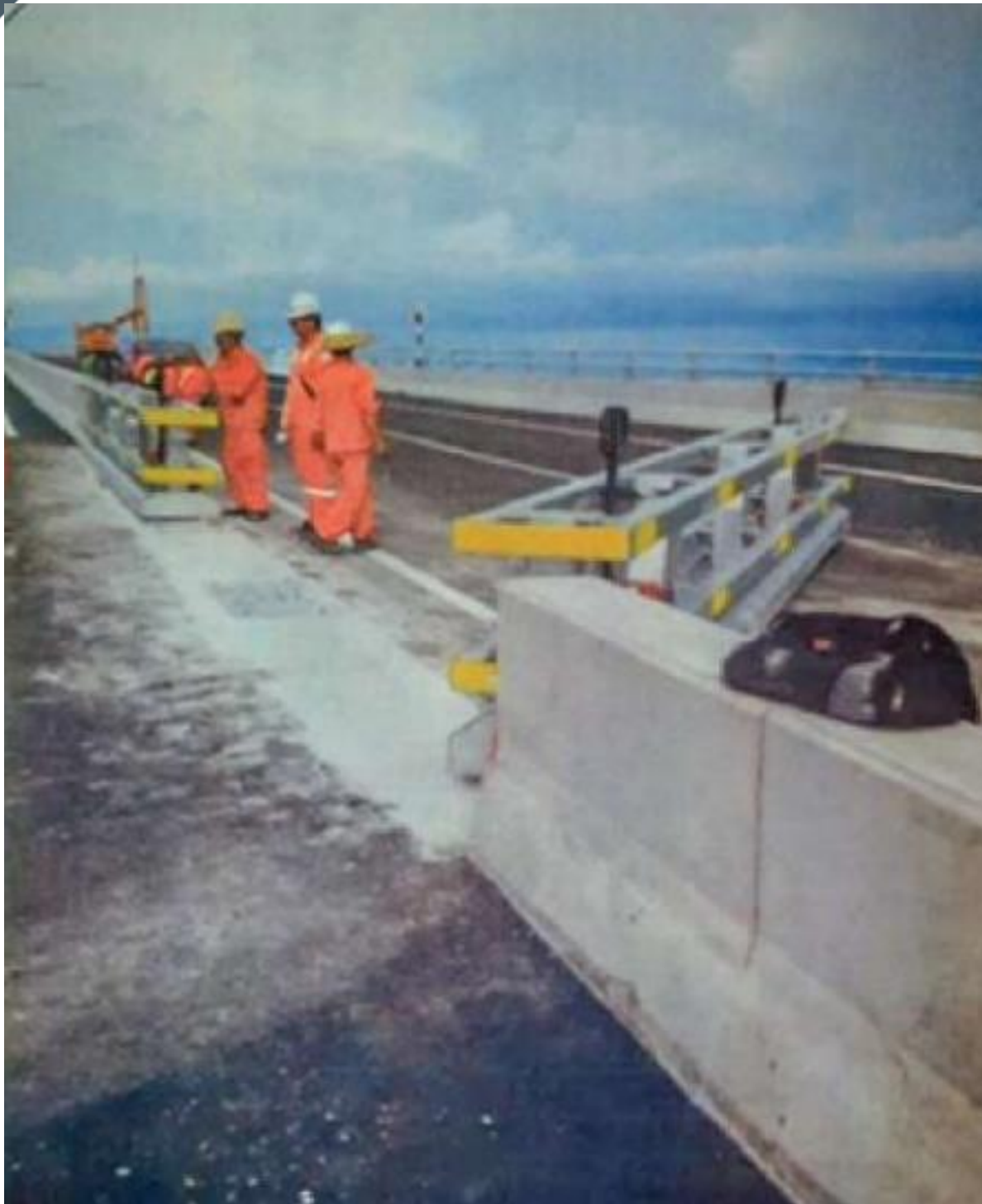
Continue

EMO-NJB installed PENANG SECOND BRIDGE –Batu Kawan Penang



Oversea Project


EMO- installed in Brunei in 2017





Products specification

	Brand XX's Conventional EMO	MRSB's EMO
System Height	813mm	850mm
System Width	546mm	500mm
Weight Per Section	490kg	300kg
Minimum Installed Length	9m	8m
Maximum Installed Length	Unlimited (additional length increased by 4m)	Unlimited (additional length increased by 250mm)
No. of Jack	3 unit	1 unit
Connecting Pins	2 unit	2 unit(End Post)
Railing Type	Three beam	M.S Rail
Maintenance	Bulky and heavy structure, harder to clean debris and leaves under it.	Less heavy structure, easier to clean debris and leaves under it.
Price		Reasonable

SIRIM Certification


SIRIM QAS International Sdn. Bhd.
 (Company No.: 19001057901 (410334-X))
 No. 1, Persiaran Dato' Menteri, P.O. BOX 7035, Section 2,
 40700 Shah Alam, Selangor Darul Ehsan, Malaysia
 Tel: 03-5544 0000
 Fax: 03-5544 0057
 www.sirim-qas.com.my

TEST REPORT

REPORT NO : 2023MT0788	PAGE : 1 OF 3
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This Test Report refers only to samples submitted by the applicant to SIRIM QAS International Sdn. Bhd. and tested by SIRIM QAS International Sdn. Bhd. This Test Report shall not be reproduced, except in full and shall not be used for any purpose by any means or forms (including but not limited to advertising purposes) without written approval from the Head of Quality, Occupational Safety and Health & Environment (QOSHE), SIRIM QAS International Sdn. Bhd. Please refer to the last page of this Test Report for Conditions Relating to the Use of Test Report.

THIS TEST REPORT IS ISSUED IN SECURED PDF SOFTCOPY

Applicant : MILLENNIUM RELEASE SDN. BHD.
 Lot 20031, Jalan CH Light Industries 2,
 71700, Pajam,
 Negeri Sembilan, Malaysia.

Manufacturer : MILLENNIUM RELEASE SDN. BHD.

Product : Hot Rolled Plates and Strips of Non-Alloy Structural Steel

Reference Standard / Method of Test : MS EN 10025 Part 2 - 2011 : Hot Rolled Products of Structural Steels
 Part 2 : Technical delivery conditions for Non-Alloy Structural Steels
 Clause 7.3 - Mechanical properties – Tensile Test

Description of sample : Two (2) samples of Hot Rolled Plates and Strips of Non-Alloy Structural Steel were received for testing.
 Size : 1) 3.0 THK 2) 6.0 THK


Date Received of Complete Application : 12 June 2023

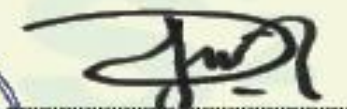
Job No. : J20233080599



Description of Test Results : This test report covers only test clauses as requested by Applicant to SIRIM QAS International Sdn. Bhd. The test results for the submitted test samples as described in this test report complied with the requirements of the above reference standard at the respective clauses tested.

Issued Date : 23 June 2023

Approved Signatory:


 (NORAZLAN BIN ROSLAN)
 Senior Testing Executive


 (DALHA BIN KATNI @ RAHMAT)
 Head
 Materials Integrity Section
 Testing Services Department

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SAMPLE REFERENCE : SAMPLE 1 - 3.0 THK, EMERGENCY MEDIAN OPENING (EMO)
STANDARD REFERENCE : MS EN10025 - 2 : 2011


CLAUSE	REQUIREMENT	RESULTS	REMARKS
7.3 MECHANICAL PROPERTIES (TENSILE TEST)			
Yield Strength (MPa)	275 min.	372	Pass
Tensile Strength (MPa)	410 to 560	493	Pass
Elongation after fracture (%)	23.0 min.	33.0	Pass

SAMPLE REFERENCE : SAMPLE 2 - 6.0 THK, EMERGENCY MEDIAN OPENING (EMO)
STANDARD REFERENCE : MS EN10025 - 2 : 2011

CLAUSE	REQUIREMENT	RESULTS	REMARKS
7.3 MECHANICAL PROPERTIES (TENSILE TEST)			
Yield Strength (MPa)	275 min.	335	Pass
Tensile Strength (MPa)	410 to 560	462	Pass
Elongation after fracture (%)	23.0 min.	36.0	Pass

Note:
 1) Simple Acceptance Rule is used for the conformity statement. The level of risk regarding the Probability of False Accept is up to 50%.
 2) Where the reported uncertainty is calculated using a coverage factor k=2, which gives a level of confidence of approximately 95%

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Calculation Report

STRUCTURAL ANALYSIS
CALCULATION REPORT

EMERGENCY MEDIAN

OPENING

STRUCTURAL STABILITY CHECK

Akuan:
I hereby certify that these works have been designed by me in accordance with sound engineering practice and that I take full responsibility for the design and proper performance of the same.



Vehicle Impact Test Descriptions (EN 1317-2)

Test	Impact Speed	Impact Angle	Total Mass	Type of Vehicle
TB 32	110 km/h	20°	1.500 kg	Car

TOPIC #03

This report shows the EMO-SS under assumption the crash cushion containment level is normal (N2), the analysis used TB32 which is for 1.5ton car travelling at 110km/h at 20degree.

From the result it shows that the capacity of the vertical post and steel base H-beam are able to withstand the force from the impact from collision.

The rail are expected to fail upon impact, therefore the rails are to be replaced with a new one after crash. The impact from the crash are transferred to the vertical post.

In conclusion, the analysis shows that the stability of the EMO-SS is sufficient.

Product Warranty

We, **MILLENNIUM RELEASE SDN BHD**, hereby warrant that the products Manufactured are merchantable and free from defects in material and workmanship and in conformity with our standard specifications in effect at the time such products were manufactured for a period of **TEN (10) year**, from the date of delivery and installation. Our exclusive remedy for a defective product that fails under normal commercial use will be repair or replacement with a comparable product or component, free of charge.

Our warranty shall not apply in the event products are damaged as a result of misuse, abuse, neglect, accident, improper application, modification or repair or attachments to the product not approved by us and any damage caused from shipment by any persons not authorized by us.

The following materials and components below are covered by warranty from the date of installation:

Emergency Median Opening (EMOSS)



ROAD SAFETY PRODUCT

MILLENNIUM RELEASE SDN BHD

WARRANTY CERTIFICATE

Works Title : XXXXXXXX

Work Order No.: XXXXXXXX

Client : XXXXXXXX

We, **MILLENNIUM RELEASE SDN BHD**, hereby warrant that the products Manufactured are merchantable and free from defects in material and workmanship and in conformity with our standard specifications in effect at the time such products were manufactured for a period of **TEN (10) year**, from the date of delivery and installation. Our exclusive remedy for a defective product that fails under normal commercial use will be repair or replacement with a comparable product or component, free of charge.

Our warranty shall not apply in the event products are damaged as a result of misuse, abuse, neglect, accident, improper application, modification or repair or attachments to the product not approved by us and any damage caused from shipment by any persons not authorized by us.

The following materials and components below are covered by warranty from the date of installation:

Emergency Median Opening (EMOSS)

No products will be accepted for return without prior approval. We shall have the right to inspect any products claimed as a defective product at the installation place, or require the buyer to return the product to us for inspection at our premises.

Transportation charges covering returned products will be borne by us only if such products are proven to be defective, are covered by this warranty, and are returned within the warranty period stated above.

Thank you

For **MILLENNIUM RELEASE SDN BHD**

NOORHIDAYAH BINTI ABDULLAH

Deputy General Manager

THANK YOU

CONTACTS
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