



財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

Date : 2024/12/26

Accreditation No. : 113TD1226-128-C01



Certificate of Conformance for Freight Container Mechanical Seal Testing
Seal Classification: Indicative seal

Customer :

MEGA FORTRIS BERHAD

NO.29 JALAN ANGERIK MOKARA 31/47, KOTA KEMUNING, SEKSYEN 31, 40460 SHAH ALAM,
SELANGOR, MALAYSIA.

Name of Article : MINI FORT SINGLE LOCK

Type : MFSL

Serial No. : 000001~000025

Specification No. : ISO 17712:2013(E)

Test Dates : 2024/12/20~2024/12/26







MIRDC, certifies that 25 samples, 5 for each test, of the seal referenced above were subjected to the following tests.

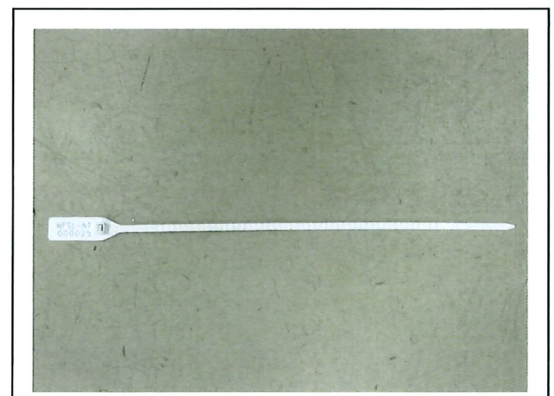
Test Item	Section Number	Classification
Tensile Test	5.2	Indicative seal (I)
Shear Test	5.3	Indicative seal (I)
Bending Test	5.4	Indicative seal (I)
Impact Test room temp	5.5	Indicative seal (I)
Impact Test reduced temp	5.5	Indicative seal (I)

Remarks : As per ISO17712:2013(E) Clause 5.1.2 “Testing is to be done once every two years”.
Therefore, this report expires two years from the test completion date.

Results : The above listed tests were completed with no discrepancies noted. Refer to test report number N1216128-T01 for complete details.

The test results contained herein pertain only to the specimens listed in this report. This report shall not be reproduced, except in full, without the written approval of MIRDC

Approved Signatory : CHIANG, Ching-Liu	 
Engineer : SU, Yuan-Da	 





財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

試驗報告 TEST REPORT



Testing Laboratory

0099

TEST REPORT NO. : N1216128-T01

Page 1 of 9

Customer :

MEGA FORTRIS BERHAD

NO.29 JALAN ANGGERIK MOKARA 31/47, KOTA KEMUNING, SEKSYEN 31, 40460 SHAH ALAM, SELANGOR, MALAYSIA.

SUBJECT : Freight containers Mechanical seals classification Testing

Name of Article : MINI FORT SINGLE LOCK

Type : MFSL

Received Date : 2024/12/16

Test Dates : 2024/12/20~2024/12/26

Date Issued : 2024/12/26



Chiang Ching-Liu



CHIANG, Ching-Liu

報告簽署人 (Report Authorized Person)

Su Yuan-Da



SU, Yuan-Da

檢驗員 (Inspector)

Note :

- (1) The operation and testing of MIRDC laboratory are in conformity to the requirements of ISO/IEC 17025 : 2017
(Taiwan Accreditation Foundation, Accreditation No. : 0099)
- (2) This report is responsible for designated samples only.
- (3) Reproduction of all or parts this report without a written approval is strictly prohibited.
- (4) Decision rules of conformance statement of this test report, do not consider uncertainty of measurement.



財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

試驗報告 TEST REPORT

TEST REPORT NO. : N1216128-T01

Page 2 of 9



1. ABSTRACT

Customer :

MEGA FORTRIS BERHAD

NO.29 JALAN ANGGERIK MOKARA 31/47, KOTA KEMUNING, SEKSYEN 31, 40460 SHAH ALAM, SELANGOR, MALAYSIA.

Name of Article : MINI FORT SINGLE LOCK

Type : MFSL

Serial No. : 000001~000025

Quantity Tested : 25

Specification No. : ISO 17712:2013(E)

Test Item	Section Number	Results
Tensile Test	5.2	See Page 3
Shear Test	5.3	See Page 5
Bending Test	5.4	See Page 6
Impact Test room temp	5.5	See Page 7
Impact Test reduced temp	5.5	See Page 7



財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

試驗報告 TEST REPORT

TEST REPORT NO. : N1216128-T01

Page 3 of 9



2. Tensile Test :

Testing Instrument : Universal Testing Machine (No.TG0103)

Ambient Temp. : 20°C ; 67% R.H.

Specification No. : ISO 17712:2013(E)

Result :

Tensile Test Section 5.2

The seal was gripped in a tensile machine and a pull force applied.

Specimen No.	Requirement Load to failure	Result kN	Seal classification
000001	10.0 kN : High security seal	0.35	Indicative seal (I)
000002	2.27 kN : Security seal	0.35	Indicative seal (I)
000003	< 2.27 kN : Indicative seal	0.34	Indicative seal (I)
000004		0.34	Indicative seal (I)
000005		0.33	Indicative seal (I)



財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

試驗報告 TEST REPORT

TEST REPORT NO. : N1216128-T01 Page 4 of 9



Universal Testing Machine



Tensile Set up





財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

試驗報告 TEST REPORT

TEST REPORT NO. : N1216128-T01

Page 5 of 9



3. Shear Test

Testing Instrument : Universal Testing Machine (No.TG0103)

Ambient Temp. : 20°C ; 67% R.H.

Specification No. : ISO 17712:2013(E)

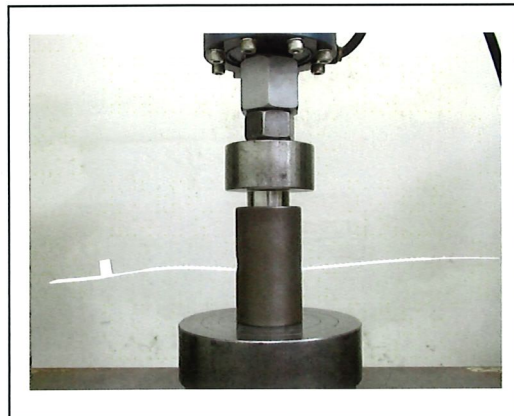
Result :

Shear Test Section 5.3

The seal was fixed in a universal testing machine to withstand cutting with shearing blades and a compressive load applied slowly until the seal is severed.

Specimen No.	Requirement Load to failure	Result kN	Seal classification
000006	3.336 kN : High security seal	0.321	Indicative seal (I)
000007	2.224 kN : Security seal	0.314	Indicative seal (I)
000008	<2.224 kN : Indicative seal	0.337	Indicative seal (I)
000009		0.337	Indicative seal (I)
000010		0.328	Indicative seal (I)

Shear Set up



SAFETY PRECAUTIONS - Do not exceed a shear force greater than 8900N(2001lbf). If the specimen has not failed at that force, halt the test and unload the test equipment. Record a shear force of 8896N (2000 lbf). Sudden and violent rupture of the test specimen can endanger personnel, equipment and property.



財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

試驗報告 TEST REPORT

TEST REPORT NO. : N1216128-T01

Page 6 of 9



4. Bending Test

Testing Instrument : Bending Tester

Ambient Temp. : 18°C ; 63% R.H.

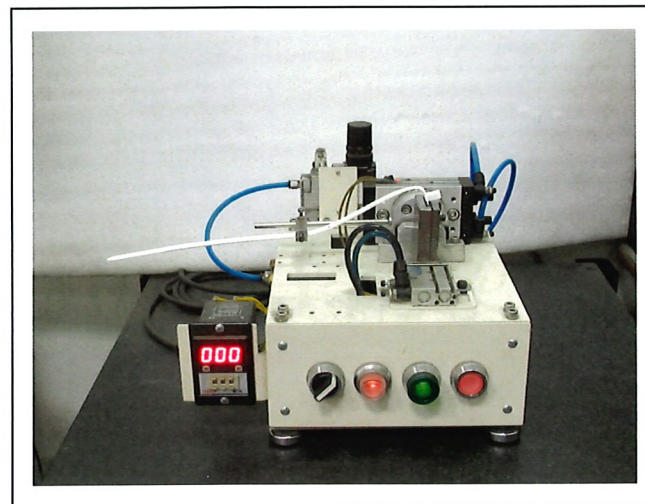
Specification No. : ISO 17712:2013(E)

Result :

Bending Test Section 5.4

Fix the locking end and flex the material adjacent to this fixed end repeatedly through an arc of 180° until failure

Specimen No.	Requirement Cycles to failure	Result Cycles	Seal classification
000011	501 : High security seal	< 251	Indicative seal (I)
000012	251 : Security seal	< 251	Indicative seal (I)
000013	<251 : Indicative seal	< 251	Indicative seal (I)
000014		< 251	Indicative seal (I)
000015		< 251	Indicative seal (I)



Bend Set up



財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

試驗報告 TEST REPORT

TEST REPORT NO. : N1216128-T01 Page 7 of 9



5. Impact Test

Testing Instrument :

5.1. Impact Tester

5.2. Programmable Low Temp. Tester (No.SG5501)

Specification No. : ISO 17712:2013(E)

Impact Test Section 5.5

The impact test is performed at 18 degrees C and minus 27 degrees C of temperature.

The impact load is applied at the locking mechanism of the seal in the direction opposite the direction used in locking the seal.

Result :

Impact Test at 18±3°C					
Specimen No.	Requirement	Result Joule			Seal classification
		13.56	27.12	40.68	
000016	40.68J : High security seal	0	N/A	N/A	Indicative seal (I)
000017	27.12J : Security seal	0	N/A	N/A	Indicative seal (I)
000018	<27.12J : Indicative seal	0	N/A	N/A	Indicative seal (I)
000019	5 impacts at each load	0	N/A	N/A	Indicative seal (I)
000020		0	N/A	N/A	Indicative seal (I)

Impact Test at -27±3°C					
Specimen No.	Requirement	Result Joule			Seal classification
		13.56	27.12	40.68	
000021	40.68J : High security seal	0	N/A	N/A	Indicative seal (I)
000022	27.12J : Security seal	0	N/A	N/A	Indicative seal (I)
000023	<27.12J : Indicative seal	0	N/A	N/A	Indicative seal (I)
000024	5 impacts at each load	0	N/A	N/A	Indicative seal (I)
000025		0	N/A	N/A	Indicative seal (I)



財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

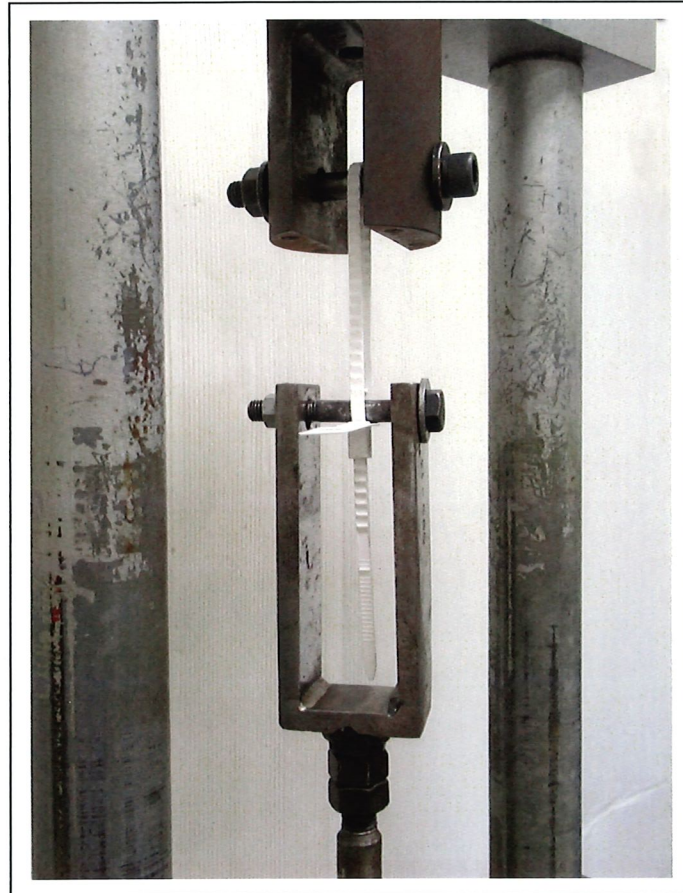
Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

試驗報告 TEST REPORT

TEST REPORT NO. : N1216128-T01 Page 8 of 9



Impact Set up



財團法人金屬工業研究發展中心
機械測試實驗室

40768 台中市工業區 37 路 25 號 TEL : (04)23502169

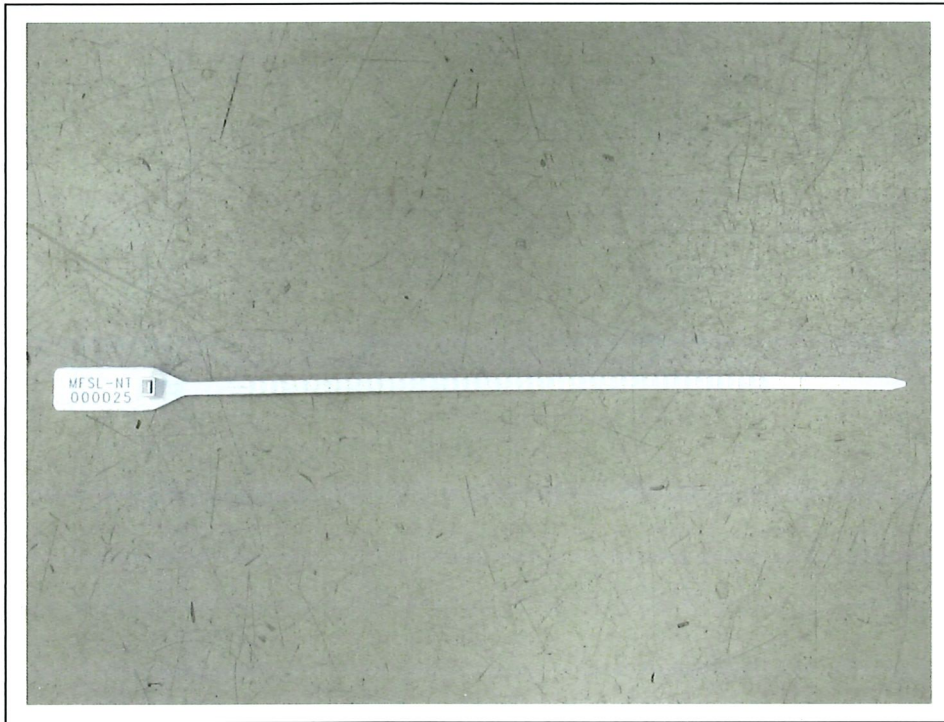
Metal Industries Research & Development Centre

Mechanical Testing Laboratory

No.25, 37th Road, Industrial Park, Taichung City 40768, Taiwan (R.O.C.)

試驗報告 TEST REPORT

TEST REPORT NO. : N1216128-T01 Page 9 of 9



Name of Article : MINI FORT SINGLE LOCK

Type : MFSL

--- End ---