METAL INDUSTRIES RESEARCH & DEVELOPMENT CENTRE
REGIONAL R&D SERVICE DEPARTMENT (TAICHUNG)
No.25, 37th Road, Industrial Park, 40768 Taichung, Taiwan

2013/11/12

C1112076-T01-C01

Certificate of Conformance for Freight Container Mechanical Seal Testing

Seal Classification: Security seal

Customer：	WENZHOU GCSEAL CO., LTD.
Add. ：	NO. 272 West Wenqu Road, Guoxi Town, Ouhai, Wenzhou, Zhejiang, china.
Name of Article：	CABLE SEAL 1.8 mm
Type：	GC-C1803
Serial No.：	GCSEAL 000001~000025
Specification No.：	ISO 17712:2013(E)
Test Dates：	2013/11/01~2013/11/11

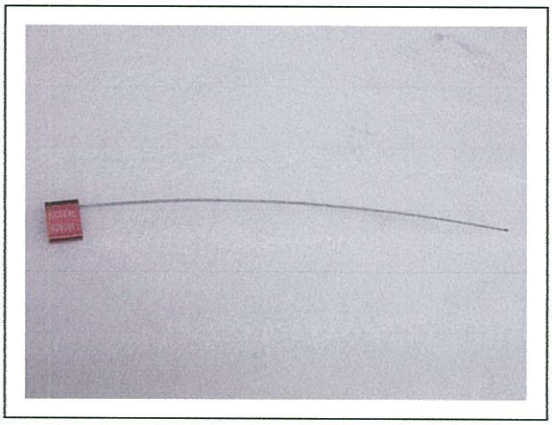
MIRDC , certifies that 25 samples, 5 for each test, of the seal referenced above were subjected to the following tests.

Test Item	Section Number	Classification
Tensile Test	5.2	Security seal
Shear Test	5.3	Security seal
Bending Test	5.4	Security seal
Impact Test room temp	5.5	Security seal
Impact Test reduced temp	5.5	Security seal

Results： The above listed tests were completed with no discrepancies noted. Refer to test report number C1112076-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：	CHI, Lin Yin
Engineer：	Chang, Hsi-Hui



Testing Laboratory
0099

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機械測試實驗室
Mechanical Testing Laboratory

TESTING REPORT

TEST REPORT NO. : C1112076-T01

Customer：	WENZHOU GCSEAL CO. LTD.
Add. ：	NO. 272 West Wenqu Road, Guoxi Town, Ouhai, Wenzhou, Zhejiang, China
SUBJECT：	Freight containers Mechanical seals classification Testing
Name of Article：	CABLE SEAL 1.8 mm
Type：	GC-C1803
Received Date：	2013/10/30
Test Dates：	2013/11/01~2013/11/11
Date Issued：	2013/11/12

CHI, Lin Yin
報告簽署人 (Report Authorized Person)

Chang, Hsi-Hui
檢 驗 員 (Inspector)

Note：(1) The operation and testing of MIRDC laboratory are in conformity to the requirements of ISO/IEC 17025：2005
(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.

1. ABSTRACT

Customer： WENZHOU GCSEAL CO. LTD.

Add. ： NO. 272 West Wenqu Road, Guoxi Town, Ouhai, Wenzhou, Zhejiang, China

Name of Article： CABLE SEAL 1.8 mm

Type： GC-C1803

Serial No. ： GCSEAL 000001~000025

Quantity Tested： 25

Inspection Reference： According to 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

2. Tensile Test ：

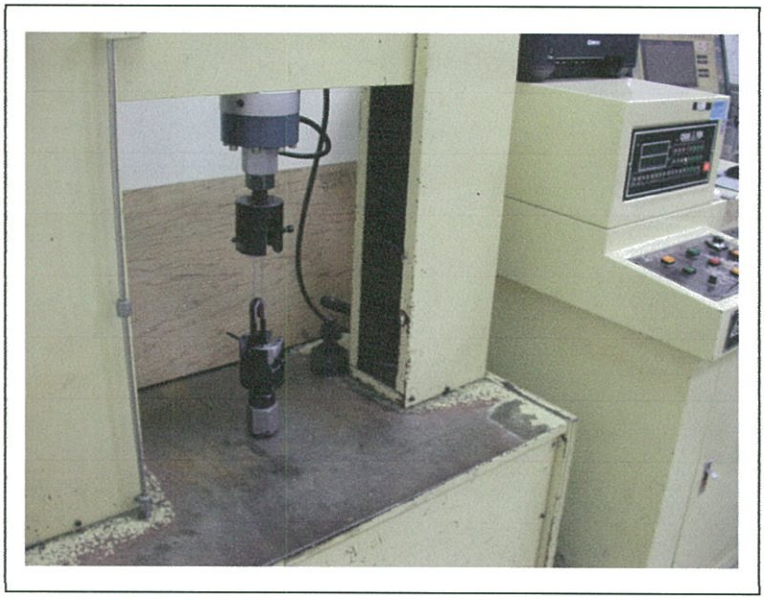
Testing Instrument： Universal Testing Machine (No.TG0103)
Ambient Temp.：21℃ ；52% R.H.
Inspection Reference： According to ISO 17712：2013(E)
Result：

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
GCSEAL 000001	10.0 kN：High security seal	2.9	Security seal
GCSEAL 000002	2.27 kN：Security seal	2.8	Security seal
GCSEAL 000003	< 2.27 kN：Indicative seal	2.9	Security seal
GCSEAL 000004		2.7	Security seal
GCSEAL 000005		2.8	Security seal

Universal Testing Machine



Tensile Set up

3. Shear Test
Testing Instrument：Universal Testing Machine (No.TG0103)
Ambient Temp.：21℃ ；52 % R.H.
Inspection Reference：According to 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
GCSEAL 000006	3.336 KN：High security seal	2.29	Security seal
GCSEAL 000007	2.224 KN：Security seal	2.33	Security seal
GCSEAL 000008	< 2.224 KN：Indicative seal	2.32	Security seal
GCSEAL 000009		2.29	Security seal
GCSEAL 000010		2.34	Security seal

Shear Set up

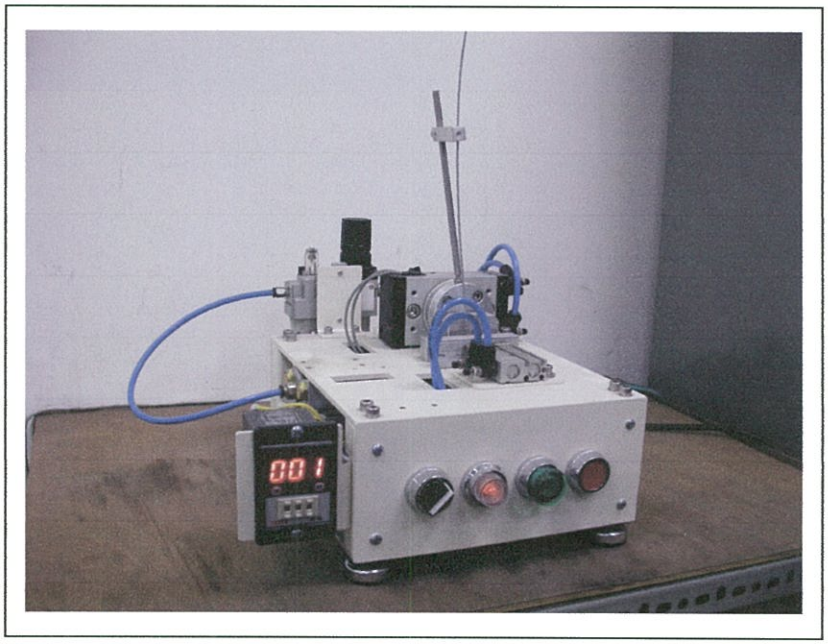
4. Bending Test

Testing Instrument：Bending Tester
Ambient Temp.：21℃；52% R.H.
Inspection Reference： According to ISO 17712：2013(E)
Result：

Bending Test Section 5.4 **ISO17712：2010(E)**

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
GCSEAL 000011	501：High security seal	>251	Security seal
GCSEAL 000012	251：Security seal	>251	Security seal
GCSEAL 000013	<251：Indicative seal	>251	Security seal
GCSEAL 000014		>251	Security seal
GCSEAL 000015		>251	Security seal



Bend Set up

5. Impact Test

Testing Instrument：
1. Impact Tester
2. Programmable Low Temp. Tester (No.SG5501)

Inspection Reference：According to 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：

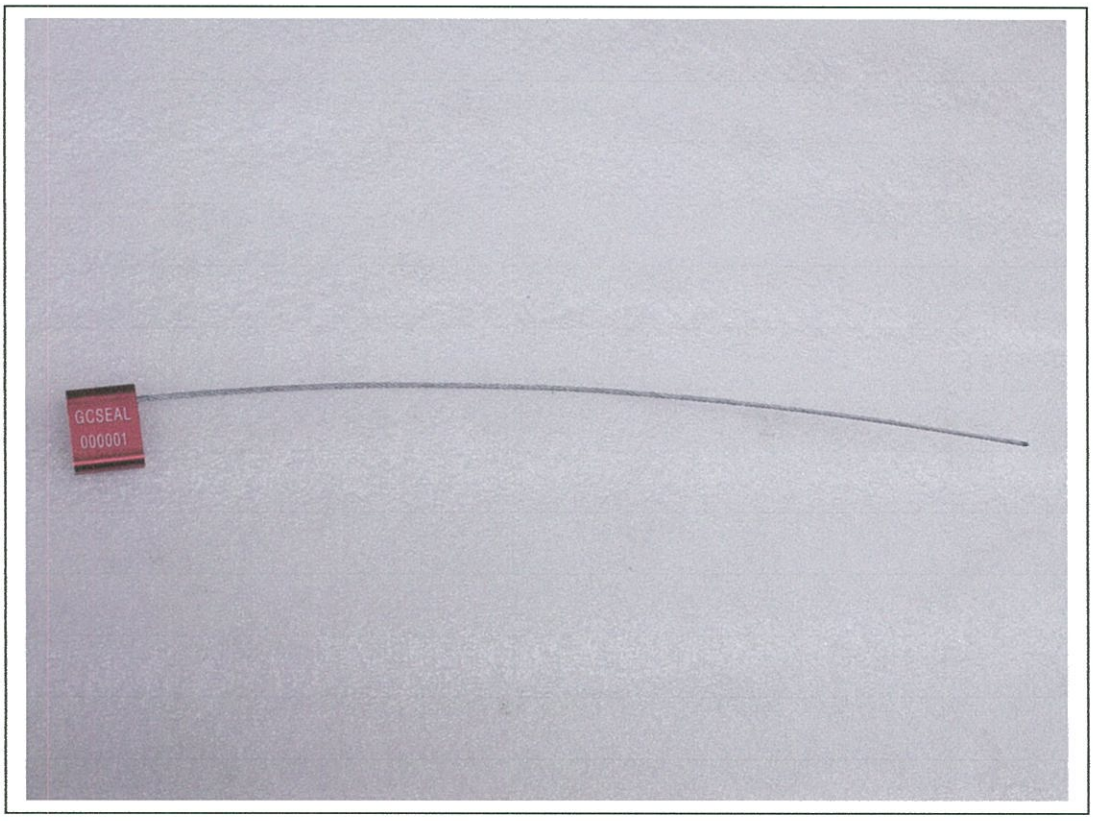
Impact Test at 18 ℃

Specimen No.	Requirement	Result Joule		Seal classification
		13.56	27.12	
GCSEAL 000016	40.68J：High security seal	Pass	Pass	Security seal
GCSEAL 000017	27.12J：Security seal	Pass	Pass	Security seal
GCSEAL 000018	<27.12J：Indicative seal	Pass	Pass	Security seal
GCSEAL 000019	**5 impacts at each load**	Pass	Pass	Security seal
GCSEAL 000020		Pass	Pass	Security seal

Impact Test at -27 ℃

Specimen No.	Requirement	Result Joule		Seal classification
		13.56	27.12	
GCSEAL 000021	40.68J：High security seal	Pass	Pass	Security seal
GCSEAL 000022	27.12J：Security seal	Pass	Pass	Security seal
GCSEAL 000023	<27.12J：Indicative seal	Pass	Pass	Security seal
GCSEAL 000024	**5 impacts at each load**	Pass	Pass	Security seal
GCSEAL 000025		Pass	Pass	Security seal

Impact Set up



GC-C1803
CABLE SEAL 1.8 mm

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