DAYTON T. BROWN INC.
Founded 1950

ENGINEERING AND TEST DIVISION
1175 CHURCH STREET, BOHEMIA, LONG ISLAND, NEW YORK 11716 (631) 589-6300

TEST REPORT NO.: 415072-01-04-R16-0410

DAYTON T. BROWN, INC. JOB NO.: 415072-01-000

CUSTOMER: SHANGHAI XINFAN INDUSTRIAL CORPORATION
NO. 1336 JINGE ROAD, ZHUHANG TOWN, JINSHAN DISTRICT
SHANGHAI
201506 CHINA

SUBJECT: FREIGHT CONTAINER MECHANICAL SEAL CLASSIFICATION TESTING PER ISO 17712:2013 (E) CLAUSE 5,
CONDUCTED ON 25 CABLE SEALS, MODEL NO. TSS-CF5.0T,
SERIAL NOS. DTB 1 THROUGH DTB 25

PURCHASE ORDER NO.: 201601005

ATTENTION: MS. FIFI CHEN

SEAL CLASSIFICATION: HIGH SECURITY

PREPARED BY	J. BENINCASA
TEST ENGINEER	T. ZIMOULIS
DATE	3 MAY 2016

THE DATA CONTAINED IN THIS REPORT WAS OBTAINED BY TESTING IN COMPLIANCE WITH THE APPLICABLE TEST SPECIFICATION AS NOTED

James Benincasa

Digitally signed by James Benincasa
DN: c=US, st=NY, l=Bohemia, email=jbenincasa@dtb.com, o=Dayton T. Brown, Inc., cn=James Benincasa
Date: 2016.05.03 14:30:01 -04'00'

ACCREDITED
Testing Lab
Cert # 0767.01, 0767.02, 0767.03

REVISION HISTORY

Revision	Date	Section Affected	Change
--	05/03/2016	--	--

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1.0 ABSTRACT

This test report details the results of freight container mechanical seal classification testing conducted on Cable Seals, under reference (a) to the requirements of reference (c).

Results of the tests are detailed in the following text.

Test data pertinent to this program will remain on file at Dayton T. Brown, Inc. for 90 days.

The testing and results contained in this report are in accordance with the testing requirements called out in ISO 17712:2013 and are only applicable to the specific units identified in the test report and do not address any individual manufacturer's compliance or non-compliance with all the requirements of ISO 17712:2013 which are the sole responsibility of each manufacturer and not part of the testing performed and recorded in this test report.

Dayton T. Brown, Inc. is not involved in any production quality inspections. All tests are based on the samples that are selected by the manufacturer and provided to Dayton T. Brown, Inc. without any Dayton T. Brown, Inc. involvement in said selection.

Dayton T. Brown, Inc. performs testing to ISO 17712:2013 under laboratory conditions. These tests do not measure and are not intended to measure all possible applications or installations of the seal assembly or components. In that event, the report will describe the particular application tested in detail. Dayton T. Brown, Inc. is not responsible for actual performance of any seal assembly as installed in any application.

This report shall not be reproduced, except in full, without the written approval of Dayton T. Brown, Inc.

2.0 REFERENCES

(a)	Customer Purchase Order No.:	201601005
(b)	Dayton T. Brown, Inc. Job No.:	415072-01-000
(c)	Test Specification:	ISO 17712:2013 (E) Clause 5

3.0 SEAL CLASSIFICATION

ISO 17712:2013 (E):	(H)-High Security for Clause 5

4.0 ADMINISTRATIVE INFORMATION

Customer	Shanghai Xinfan Industrial Corporation No. 1336 Jinge Road, Zhuhang Town, Jinshan District Shanghai 201506 China
Sample Type	Cable Seal
Sample Name	High Security Cable Seals (as provided by customer)
Model No.	TSS-CF5.0T (as provided by customer)
Serial Nos.	DTB 1 through DTB 25
Quantity Received	30
Quantity Tested	25
Date Received	18 April 2016
Dates Tested	22 through 28 April 2016

5.0 TEST PROGRAM OUTLINE

Test	Test Item Description	Results
Tensile	Model No. TSS-CF5.0T Cable Seals, Serial Nos. DTB 1 through DTB 5	See Page 6.
Shear	Model No. TSS-CF5.0T Cable Seals, Serial Nos. DTB 6 through DTB 10	See Page 8.
Bending	Model No. TSS-CF5.0T Cable Seals, Serial Nos. DTB 11 through DTB 15	See Page 10.
Impact	Model No. TSS-CF5.0T Cable Seals, Serial Nos. DTB 16 through DTB 25	See Pages 12 and 13.
Test Equipment List and Test Item Photo	Model No. TSS-CF5.0T Cable Seal	See Pages 15 and 16.

6.0 TEST RESULTS

Tensile Test and Results

TEST REQUIREMENT

The tensile test shall be conducted in accordance with reference (c).

TEST RESULTS

A pretest visual inspection of the test items revealed no anomalies.
All testing was performed in accordance with the referenced specification.
Test room ambient conditions: 19.4°C and 40.9%RH

TEST DATA Date: 27 April 2016

Tensile Test at Room Temperature

Specimen No.	Load (kN)	Class Rating	Remarks
DTB 1	15.01	H	*
DTB 2	14.64	H	*
DTB 3	14.64	H	*
DTB 4	15.16	H	*
DTB 5	13.89	H	*

Tech: Jay B

* A post-test visual inspection of the test item revealed that the cable broke out of the crimp of the seal due to testing.

Classification Key

Rating	Load to Failure
High Security (H):	10.0 kN
Security (S):	2.27 kN
Indicative (I):	<2.27 kN

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TYPICAL PHOTO OF THE TENSILE TEST SETUP

27 APRIL 2016

FILE NO. 16-10355

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Shear Test and Results

TEST REQUIREMENT

The shear test shall be conducted in accordance with reference (c).

TEST RESULTS

A pretest visual inspection of the test items revealed no anomalies.
All testing was performed in accordance with the referenced specification.
Test room ambient conditions: 19.5°C and 40.8%RH

TEST DATA Date: 27 April 2016

Shear Test at Room Temperature

Specimen No.	Load (kN)	Class Rating	Remarks
DTB 6	8.896	H	*
DTB 7	8.896	H	*
DTB 8	8.896	H	*
DTB 9	8.896	H	*
DTB 10	8.896	H	*

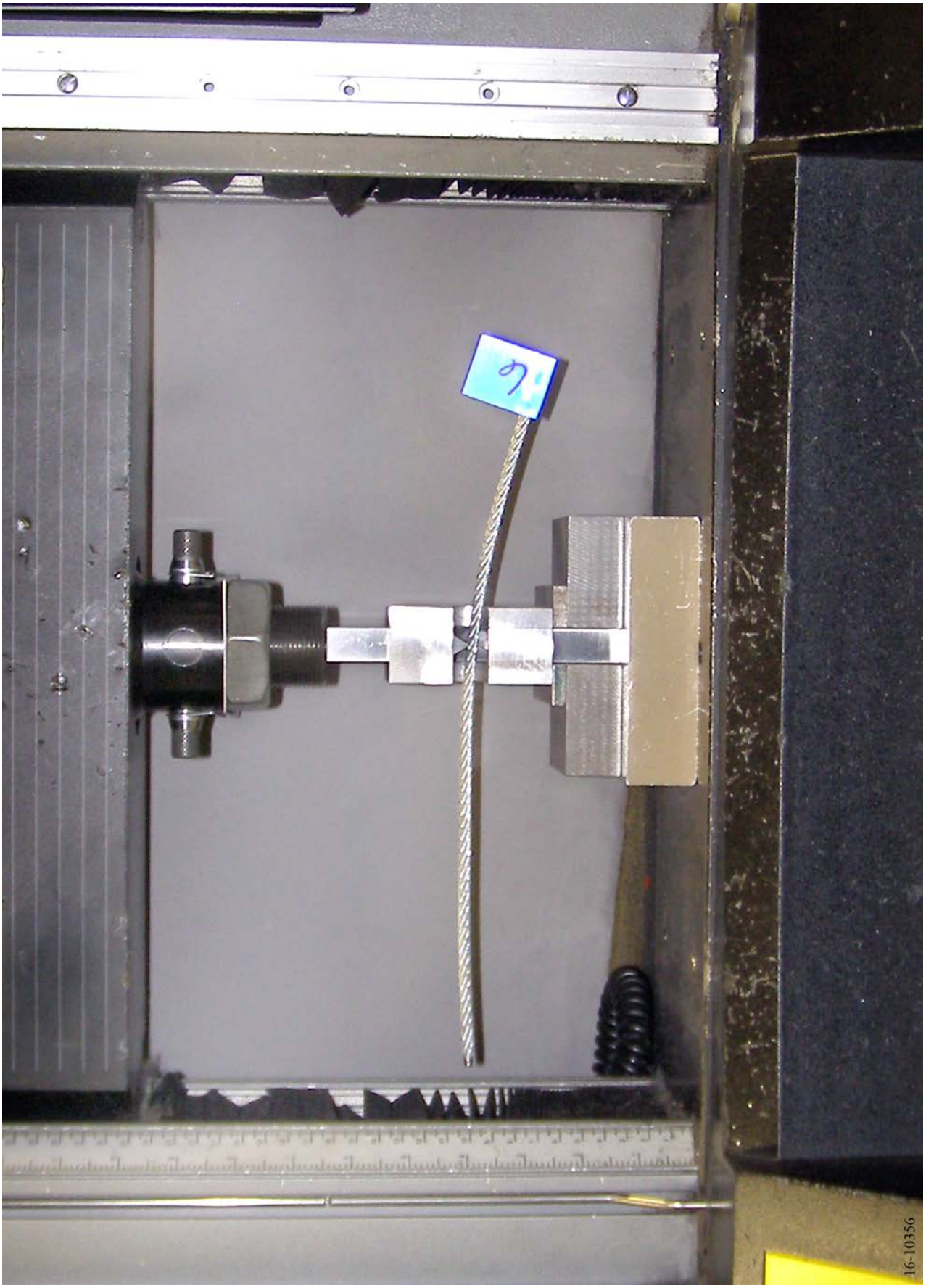
Tech: Jay B

* A post-test visual inspection of the test item revealed a slight indent on the cable and that one or two cable strands were cut due to testing.

Classification Key

Rating	Load to Failure
High Security: (H):	3.336 kN
Security (S):	2.224 kN
Indicative (I):	<2.224 kN

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



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TYPICAL PHOTO OF THE SHEAR TEST SETUP

27 APRIL 2016

FILE NO. 16-10356

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Bending Test and Results

TEST REQUIREMENT

The bending test shall be conducted in accordance with reference (c).

TEST RESULTS

A pretest visual inspection of the test items revealed no anomalies.
All testing was performed in accordance with the referenced specification.
Test room ambient conditions: 19.3°C and 50.6%RH

TEST DATA Date: 28 April 2016

Bending Test at Room Temperature

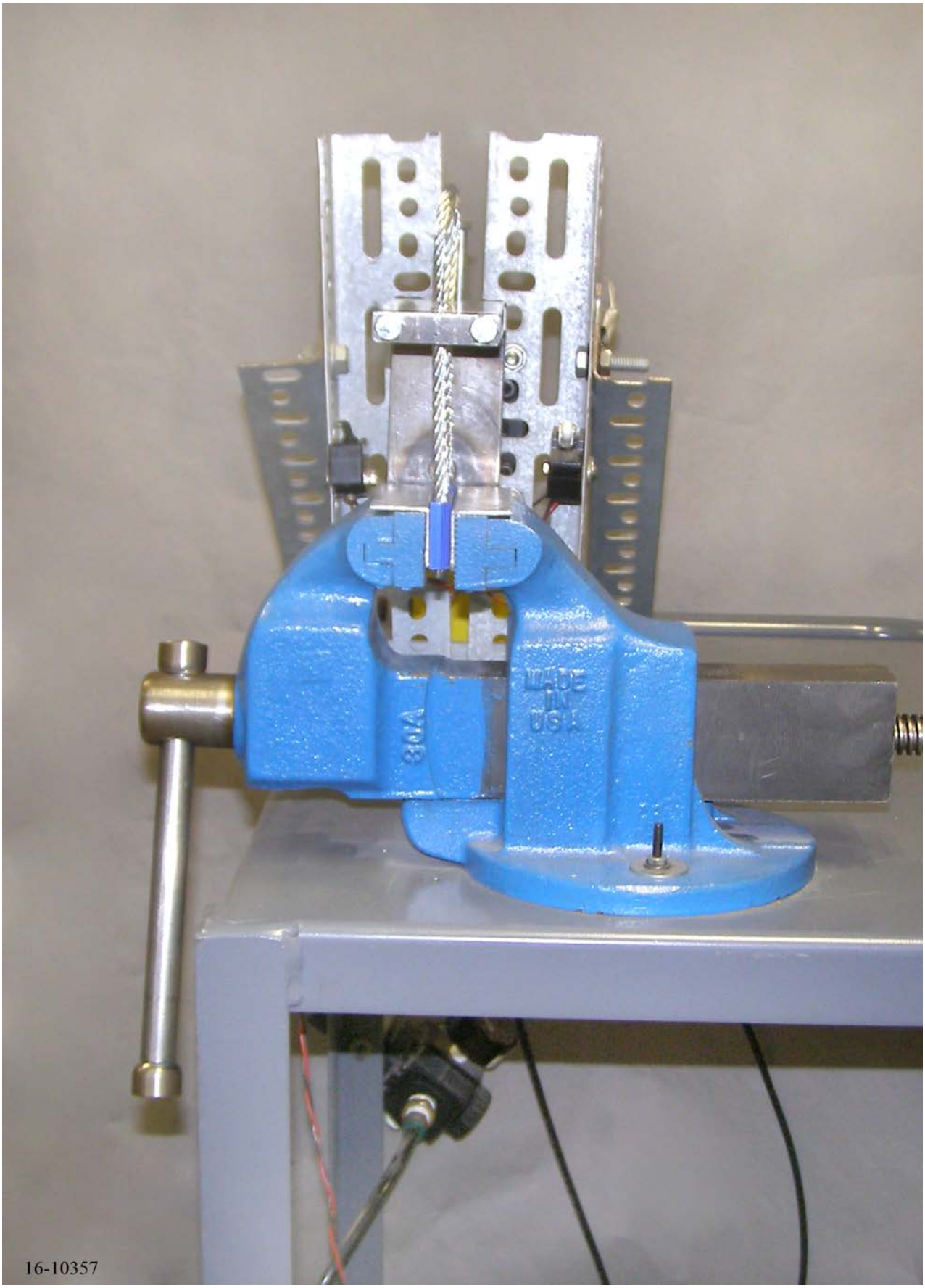
Specimen No.	Flex Cycles	Class Rating	Remarks
DTB 11	>501	H	*
DTB 12	>501	H	*
DTB 13	>501	H	*
DTB 14	>501	H	*
DTB 15	>501	H	*

Tech: JB

* A post-test visual inspection of the test item revealed no anomalies due to testing.

Classification Key

Rating	Flexible Seals Cycles to Failure
High Security (H):	501
Security (S):	251
Indicative (I):	<251



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TYPICAL PHOTO OF THE BENDING TEST SETUP

28 APRIL 2016

FILE NO. 16-10357

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Impact Test and Results

TEST REQUIREMENT

The impact test shall be conducted in accordance with reference (c).

TEST RESULTS

A pretest visual inspection of the test items revealed no anomalies.
All testing was performed in accordance with the referenced specification.
Test chamber conditions: 18.2°C and 48.0%RH

TEST DATA Date: 22 April 2016

Impact Test at Room Temperature (required 18 ± 3°C)					
Specimen No.	Number of Successful Impacts Per Load (J)			Class Rating	Remarks
	13.56	27.12	40.68		
DTB 16	5	5	5	H	*
DTB 17	5	5	5	H	*
DTB 18	5	5	5	H	*
DTB 19	5	5	5	H	*
DTB 20	5	5	5	H	*

Tech: JB

* A post-test visual inspection of the test item revealed that portions of the seal broke or deformed due to testing. The cable and lock of the seal remained intact.

Classification Key

Rating	Load to Failure (5 impacts at each load)
High Security (H):	40.68 J
Security (S):	27.12 J
Indicative (I):	<27.12 J

Impact Test and Results

Test chamber conditions: -26.8°C and 76.3%RH

TEST DATA – (Continued) Date: 25 April 2016

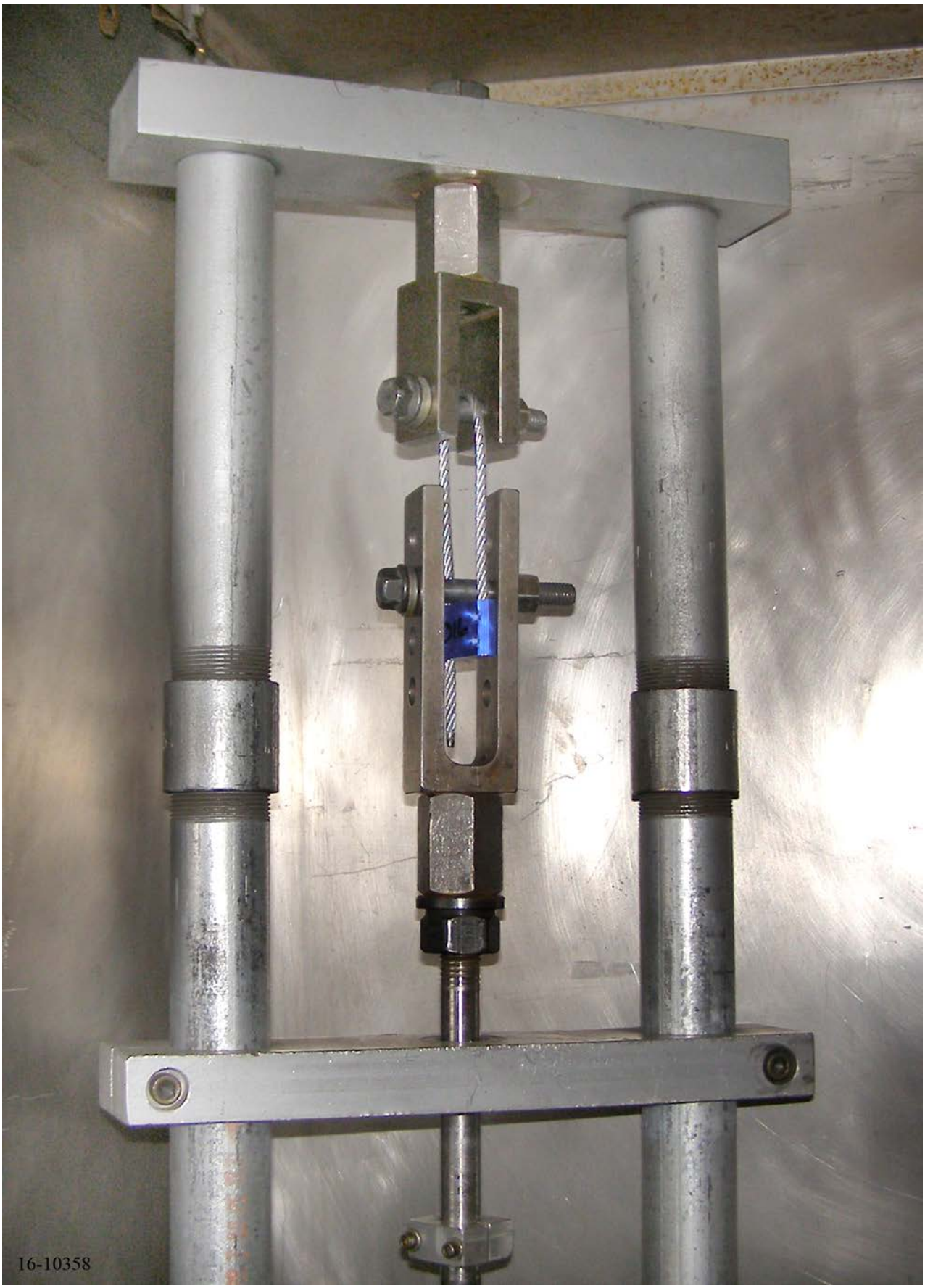
Impact Test at Reduced Temperature (required -27 ± 3°C)					
Specimen No.	Number of Successful Impacts Per Load (J)			Class Rating	Remarks
	13.56	27.12	40.68		
DTB 21	5	5	5	H	*
DTB 22	5	5	5	H	*
DTB 23	5	5	5	H	*
DTB 24	5	5	5	H	*
DTB 25	5	5	5	H	*

Tech: Jay B

* A post-test visual inspection of the test item revealed that portions of the seal broke or deformed due to testing. The cable and lock of the seal remained intact.

Classification Key

Rating	Load to Failure (5 impacts at each load)
High Security (H):	40.68 J
Security (S):	27.12 J
Indicative (I):	<27.12 J



JOB NO. 415072-01-000

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TYPICAL PHOTO OF THE IMPACT TEST SETUP

22 APRIL 2016

FILE NO. 16-10358

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Test equipment utilized for the program reported herein was within its assigned interval of calibration.
Details are on file at Dayton T. Brown, Inc. and will be made available upon request.

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TEST: FREIGHT CONTAINER MECHANICAL SEAL TESTING - TSS-=CF5.0T

Item	Manufacturer	Model	DTB No.	Accuracy	Last Cal Date	Cal Due Date
THERMOTRON, 275	THERMOTRON	FX-82-CHV-25-25	04E-006	N/A	-	N.C.R.
CONDITIONING ROOM	DAYTON T. BROWN	N/A	04S-001	N/A	-	N.C.R.
RECORDER, CHART TRULINE	HONEYWELL	DR4500	12-12	TYPE T ± 0.7°F	10/01/2015	09/25/2016
LOGGER, RH AND TEMPERATURE	HART SCIENTIFIC	1620A	12-39	59 TO 95°F ± 0.75°F; 10 TO 70% RH ± 2% RH	12/02/2015	11/27/2016
CONTROLLER, ENVIRONMENTAL SYSTEM	JC SYSTEMS	620	25-55	RTD ± 1.08°F, RH ± 1% RH	03/07/2016	03/05/2017
TESTER, UNIVERSAL TENSILE W/STATIC LOAD CELLS (2)	INSTRON	5569	29-2	± 1% OF READING	07/13/2015	07/10/2016
TRANSMITTER, TEMPERATURE & HUMIDITY	VAISALA	HMT337	31-64	MFR	01/15/2016	07/10/2016
WEIGHT, DEAD BLOW	DAYTON T. BROWN	JB-1	38-55	± 0.01 KGRAMS	05/30/2014	05/29/2016
TIMER, DIGITAL	FISHER SCIENTIFIC	14-649-17	47-55	± 8.64 Sec/24 hr	05/06/2015	05/01/2016
IMPACT TESTER, FREIGHT CONTAINER MECHANICAL SEAL	DAYTON T. BROWN	ISO 17712:2013	61-10	N/A	-	N.C.R.
FIXTURE, SHACKLE CUTTING AND 2 BLADES	DAYTON T. BROWN	ISO 17712:2013	68-390	MFR	06/15/2015	06/12/2016
CALIPER, DIGITAL 4"	MITUTOYO	500-195-20	68-466	± 0.001"	02/25/2016	02/19/2017
TAPE MEASURE, 16'/5m X 3/4"	LUFKIN	HV1035CME	68-486	± 1 mm	12/03/2015	12/03/2017

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MODEL NO. TSS-CF5.0T CABLE SEAL

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FILE NO. 16-10359

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