



Strand Tensile Test

Tensile Testing of 0.5-in and 0.6-in 7-wire Strand

5N Donghai International Building
No. 17 Huiquan Road
Qingdao, China

October 23, 2023
WJE No. 2023.5558

PREPARED FOR:

Global Overseas Group Corporation Limited
5N Donghai International Building
No. 17 Huiquan Road
Qingdao, China

PREPARED BY:

Wiss, Janney, Elstner Associates, Inc.
330 Pfingsten Road
Northbrook, Illinois 60062
847.272.7400 tel



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John Pearson
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Project Engineer

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INTRODUCTION

At the request of Global Overseas Group Corporation Limited (GOGC), the firm of Wiss, Janney, Elstner Associates, Inc. (WJE) conducted testing services following the procedures outlined in ASTM A1061, *Standard Test Methods for Testing Multi-Wire Steel Prestressing Strand*. Test results were compared to acceptance criteria specified in ASTM A416, *Standard Specification for Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete*.

Scope of Work

Tensile tests were performed in accordance with ASTM A1061 for one (1) 0.5-in (12.7mm) and one (1) 0.6-in (15.24mm) diameter 270-ksi (1862MPa), 7-wire strand. Testing was performed using samples provided by GOGC.

TEST METHODS AND REQUIREMENTS

All tensile testing of the strand was conducted by WJE personnel at our structural laboratory in Northbrook, Illinois. Tests on all strand samples were performed using a 500-kip Riehle universal test machine. Test machine calibration records are included in Appendix A. All testing protocols were in compliance with WJE's Quality Manual. All strand tested was performed using material shipped to WJE. WJE personnel prepared the strand by cutting to length for tensile testing and for measurement of dimensional properties.

Strand Tests

Mill test certificates for the strand provided are included in Appendix B. The pertinent information provided from GOGC mill test certificate is listed in Table 1 below.

Table 1. Strand mill test certificate information

Topic	0.5-in (12.7mm)	0.6-in (15.24mm)
Supplier	GOGC	GOGC
Grade	270 ksi (1862 MPa)	270 ksi (1862 MPa)
Heat No.	23A-05741B	1063493-1
Coil No.	2307359-2	2307136-2
Cross Section Area	0.153 in ² (98.7 mm ²)	0.217 in ² (140.0 mm ²)
Tensile Strength	283 ksi (1952 MPa)	284 ksi (1957 MPa)
Yield Strength	258 ksi (1777 MPa)	257 ksi (1772 MPa)
Modulus of Elasticity	28,065 ksi (193.5 GPa)	28,775 ksi (198.4 GPa)

Source: Global Overseas Group Corporation Limited mill test certificates

A short length of strand was cut from each sample and the length and weight was measured. This information was used to calculate the cross-sectional area of each strand using the density of steel listed in Table 1 of ASTM A416. The cross-sectional area was used to calculate and modulus of elasticity.

Each strand provided was tested in tension to determine the yield strength, tensile strength, total elongation at maximum tensile stress, and modulus of elasticity of the strand. These tests were conducted in accordance with ASTM A1061, and results were compared to ASTM A416 requirements. Load and

elongation data were recorded and are included in Appendix C. The test results are listed in Table 2 below. The strength and elongation results satisfy the requirements.

Table 2. Strand tensile test results

Measured Properties	0.5-in (12.7mm)		0.6-in (15.24mm)	
	Measured	Specified	Measured	Specified
Cross Section Area	0.152 in ² (98.1 mm ²)	0.153 in ² (98.7 mm ²)	0.219 in ² (141.3 mm ²)	0.217 in ² (140 mm ²)
Yield Strength	39,370 lbf (175 kN)	37,170 lbf (165 kN)	54,680 lbf (243.2 kN)	52,740 lbf (234.6 kN)
Tensile Strength	43,270 lbf (192 kN)	41,300 lbf (184 kN)	61,200 lbf (272 kN)	58,600 lbf (261 kN)
Elongation at Max Load	6.29 percent	3.5 percent	6.54 percent	3.5 percent
Modulus of Elasticity	29,140 ksi	na	28,610 ksi	na

SUMMARY

Wiss, Janney, Elstner Associates, Inc. conducted tensile tests on one (1) 0.5-in (12.7mm) and one (1) 0.6-in (15.24mm) diameter 270-ksi (1862MPa), 7-wire strand provided by Global Overseas Group Corporation Limited. Testing was performed following the procedures outlined in ASTM A1061, *Standard Test Methods for Testing Multi-Wire Steel Prestressing Strand*. Test results were compared to ASTM A416, *Standard Specification for Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete*. The test results showed the strand provided for testing meets the requirements of ASTM A416 Specification.

APPENDIX A. MILL TEST CERTIFICATES





Global Overseas

Group Corporation Limited

Add: 5N Donghai Int'l Building, No.17 Huiquan Road, Qingdao China

MILL TEST CERTIFICATE

Supplier: GLOBAL OVERSEAS GROUP CORPORATION LIMITED
Commodity: PRESTRESSED CONCRETE STRAND
Nominal Diameter: 12.7MM
Standard: ASTM A416/A416M-18
Structure: 1×7
Grade: 270K
Heat no. 1063493-1
Production License No: XK 05-003-00156
Page No: 1/1
Inspection Date: JUL.17th,2023

Mark on Coil	Coil No.	Dia MM	Section Area (mm ²)	Tensile Strength MPA	Breaking Load (kN)	Yield Strength MPA	1%Extension Yield Load (kN)	Elongation (%)	Modules of Elasticity GPA
D9	2307136-2	12.70	98.70	1952	192.7	1777	1813	5.6	193.5

Filled by : Zhou Huiqing

Approved by: Li Jingying

For and on behalf of
GLOBAL OVERSEAS GROUP CORPORATION LIMITED

Authorized Signature(s)



Global Overseas

Group Corporation Limited

Add: 5N Donghai Int'l Building, No.17 Huiquan Road, Qingdao China

MILL TEST CERTIFICATE

Supplier: GLOBAL OVERSEAS GROUP CORPORATION LIMITED
Commodity: PRESTRESSED CONCRETE STRAND
Nominal Diameter: 15.24MM
Standard: ASTM A416/A416M-18
Structure: 1×7
Grade: 270K
Heat no. 23A-05741B
Production License No: XK 05-003-00156
Page No: 1/1
Inspection Date: JUL.17th,2023

Mark on Coil	Coil No.	Dia MM	Section Area (mm ²)	Tensile Strength MPA	Breaking Load (kN)	Yield Strength MPA	1%Extension Yield Load (kN)	Elongation (%)	Modules of Elasticity GPA
C1	2307359-2	15.24	140.00	1957	274.0	1772	248.1	5.6	198.4

Filled by : Zhou Huiqing

For and on behalf of
Approved by: Li Jingying

Authorized Signature(s)

APPENDIX B. TEST MACHINE CALIBRATION





Cal-Rite Corporation

1665 QUINCY AVENUE, UNIT 103, NAPERVILLE, IL 60540
P 630.355.1522 F 630.355.1544 WWW.CAL-RITE.COM

Certificate Of Calibration

Equipment Calibration was performed at the address below for

WISS, JANNEY, ELSTNER ASSOC.

330 PFINGSTEN ROAD
NORTHBROOK, IL 60062



Certificate # 866.01
Calibration

Date of Calibration

Monday, March 20, 2023

Issue Date:
03/26/2023

Manufacturer: RIEHLE

Capacity: 500000

Next Cal: 20-Mar-2024

Model: 500FH

Serial #: 47247

Customer #: 691

Language LBS

Force Calibration Results

Accuracy: 1.0 %

Range	Verified Range Force	Uncertainty %	Maximum Error %
500000	50000 - 500000	0.29	0.41
250000	25000 - 250000	0.29	0.64
100000	20000 - 100000	0.29	-0.61
20000	2000 - 20000	0.29	-0.46

Cal-Rite Corporation has calibrated the testing equipment described above in accordance with ISO/IEC 17025:2017, ANSI/NCSL Z540-1-1994 and 10-CFR-21. All elastic verification devices have been calibrated in accordance with ASTM E74 practices and are traceable to the International System of Units (SI) through NIST.

Computed forces have been temperature corrected as necessary.

The uncertainty of the calibration process was estimated approximately at the 95% confidence level (k=2).

When a decision rule is stated in the governing specification, the prescribed decision rule was used in the pass/fail determination unless otherwise noted. In all other cases where a statement of conformance is made, the determination of conformance is made solely on the measurements falling in or out of the applied tolerance.

Measurement uncertainty is stated, but not used to determine pass/fail status.

This certificate relates only to the item calibrated.

The equipment listed above has met all applicable clauses of the governing specification unless noted below:

☐ 11.1 Lower Limit below 200X Resolution

☐ 11.5 Does not return to zero in 30 seconds

Specification: ASTM E 4-21

QMS Revision: 01-22

Service Comments: Calibrated machine force in accordance with ASTM standards. All readings found and left within tolerance. No adjustments required.

As Found Condition: In Tolerance
Calibration Method: Follow the Force

Calibration Procedure: CR100 Rev 16
Software Version: N/A

Service Order #: 19502 - 25

NATHAN HATHAWAY

SERVICE ENGINEER

As a mutual protection to the purchaser, the public, and ourselves, all Cal-Rite calibration reports are submitted as the confidential property of the purchaser, and any authorization for publication of statements, conclusions, or extractions from or regarding our reports is reserved pending our prior written approval.



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Certificate # 866.01
Calibration

WISS, JANNEY, ELSTNER ASSOC.

330 PFINGSTEN ROAD

NORTHBROOK, IL 60062

Calibration Date: 20-Mar-2023

Next Calibration: 20-Mar-2024

Customer #: 691

Temp/Humidity: 67.4 F/24.7%

Manufacture: RIEHLE

Capacity: 500000

Test Direction: COMPRESSION

Model: 500FH

Serial #: 47247

External Cell: N/A

Indicator: DIGITAL

Shunt #: N/A

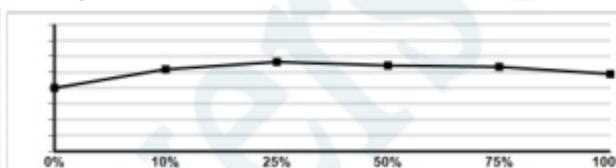
Temp Variance: 0.7

Range: 500000 LBS Resolution: 100.0 Accuracy +/- 1.0%

FS %	Reading	As Found	As Adj.	As Left	Repeat %	Max Error	Error %	Uncert
0.00	0	0.0	0.0	0.0	0.000	0.000	0.000	0.29
10.00	50000	49,853.5	0.0	49,907.2	-0.108	146.500	0.294	0.29
25.00	125000	124,488.4	0.0	124,739.2	-0.201	511.600	0.411	0.29
50.00	250000	249,115.9	0.0	249,164.3	-0.019	884.100	0.355	0.29
75.00	375000	373,756.2	0.0	374,071.5	-0.084	1,243.800	0.333	0.29
100.00	500000	498,898.1	0.0	498,923.2	-0.005	1,101.900	0.221	0.29

Zero Return: 0.00% 0.00% 0.00%

Linearity Profile (Percent Full Scale)

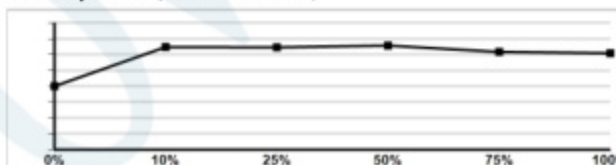


Range: 250000 LBS Resolution: 100.0 Accuracy +/- 1.0%

FS %	Reading	As Found	As Adj.	As Left	Repeat %	Max Error	Error %	Uncert
0.00	0	0.0	0.0	0.0	0.000	0.000	0.000	0.29
10.00	25000	24,846.4	0.0	24,873.9	-0.111	153.600	0.618	0.29
25.00	62500	62,119.0	0.0	62,128.3	-0.015	381.000	0.613	0.29
50.00	125000	124,204.3	0.0	124,373.5	-0.136	795.700	0.641	0.29
75.00	187500	186,491.2	0.0	186,569.9	-0.042	1,008.800	0.541	0.29
100.00	250000	248,704.2	0.0	248,882.8	-0.072	1,295.800	0.521	0.29

Zero Return: 0.00% 0.00% 0.00%

Linearity Profile (Percent Full Scale)

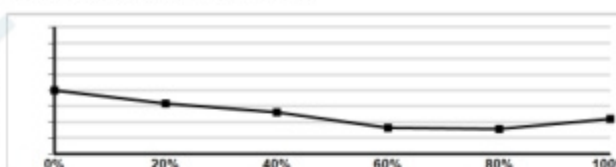


Range: 100000 LBS Resolution: 100.0 Accuracy +/- 1.0%

FS %	Reading	As Found	As Adj.	As Left	Repeat %	Max Error	Error %	Uncert
0.00	0	0.0	0.0	0.0	0.000	0.000	0.000	0.29
20.00	20000	20,041.5	0.0	20,023.2	0.091	-41.500	-0.207	0.29
40.00	40000	40,138.3	0.0	40,073.7	0.161	-138.300	-0.345	0.29
60.00	60000	60,338.2	0.0	60,356.2	-0.030	-356.200	-0.590	0.29
80.00	80000	80,465.4	0.0	80,489.5	-0.030	-489.500	-0.608	0.29
100.00	100000	100,451.0	0.0	100,423.8	0.027	-451.000	-0.449	0.29

Zero Return: 0.00% 0.00% 0.00%

Linearity Profile (Percent Full Scale)

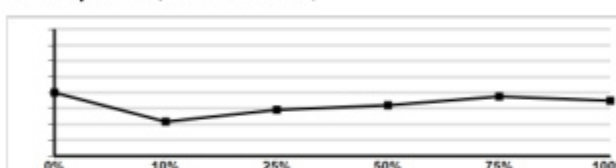


Range: 20000 LBS Resolution: 10.0 Accuracy +/- 1.0%

FS %	Reading	As Found	As Adj.	As Left	Repeat %	Max Error	Error %	Uncert
0.00	0	0.0	0.0	0.0	0.000	0.000	0.000	0.29
10.00	2000	2,009.2	0.0	2,005.9	0.164	-9.200	-0.458	0.29
25.00	5000	5,001.7	0.0	5,013.6	-0.238	-13.600	-0.271	0.29
50.00	10000	10,010.3	0.0	10,019.9	-0.096	-19.900	-0.199	0.29
75.00	15000	15,001.5	0.0	15,009.2	-0.051	-9.200	-0.061	0.29
100.00	20000	19,996.2	0.0	20,025.3	-0.146	-25.300	-0.126	0.29

Zero Return: 0.00% 0.00% 0.00%

Linearity Profile (Percent Full Scale)



Calibrating Apparatus Used

Manufacture	Serial Number	Capacity	Class A	Dir	Cal Date	Cal Due	Calibrated By
STRAINSENSE	940215D	600000	15377.6	C	9/14/2022	9/14/2024	Tovey
STRAINSENSE	120314	60000	2025	C	12/16/2022	12/16/2024	CAL-RITE
MOREHOUSE	C-8314(HI)	10000	200	C	1/16/2023	1/16/2025	CAL-RITE

☐ 7.3 Interchangeability Established

☐ REPAIRED:

☐ ADJUSTED:

Specification: ASTM E 4-21

☒ SPECIFICATION COMPLIANT

CONDITION: Good

Calibration Procedure: CR100 Rev 16

Service Order #: 19502 - 25

NATHAN HATHAWAY

SERVICE ENGINEER

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WISS, JANNEY, ELSTNER ASSOC.

330 PFINGSTEN ROAD
NORTHBROOK, IL 60062



Certificate # 866.01
Calibration

Date of Calibration
Monday, March 20, 2023

Issue Date:
03/26/2023

Manufacturer: RIEHLE

Model: 500FH

Serial #: 47247-ISO

Specification: ASTM E 4-21 / ISO 7500-1:2018

Capacity: 100000

Next Calibration: 20-Mar-2024

Customer #: 691

QMS Revision: 01-22

Reading (%FS)	Nominal	Resolution	ISO Relative Resolution Error(%)	ISO Relative Indication Error	ISO Relative Indication Error(%)	ISO Relative Repeatability Error (%)	ISO Class	ASTM Accuracy Tolerance (% of rdg)	ASTM Repeatability Tolerance (% of rdg)	Uncertainty (%)
0.00%	0	100	0.000	0.000	0.00	0.00	0.00	1.0%	1.0 %	0.29
20.00%	20000	100	0.500	-55.333	-0.28	0.33	1.00	1.0%	1.0 %	0.29
40.00%	40000	100	0.250	-202.967	-0.50	0.53	1.00	1.0%	1.0 %	0.29
60.00%	60000	100	0.167	-334.633	-0.55	0.60	1.00	1.0%	1.0 %	0.29
80.00%	80000	100	0.125	-399.300	-0.50	0.52	1.00	1.0%	1.0 %	0.29
100.00%	100000	100	0.100	-474.067	-0.47	0.51	1.00	1.0%	1.0 %	0.29

- Cal-Rite has calibrated the testing equipment described above in accordance with the latest applicable specifications (ISO/IEC 17025, ANSI Z-540-1 and 10-CFR-21). All calibration measurements are traceable to the International System of Units (SI) through NIST.
- When a decision rule is stated in the governing specification, the prescribed decision rule was used in the pass/fail determination unless otherwise noted. In all other cases where a statement of conformance is made, the determination of conformance is made solely on the measurements falling in or out of the applied tolerance. Measurement uncertainty is stated, but not used to determine pass/fail status.
 - The uncertainty of the calibration process was estimated approximately at the 95% confidence level (k=2).
 - These results relate only to the item calibrated
- All force verification devices have been calibrated in accordance with ISO 376 practices and used within the certified Class 1 or better range
 - All force verification devices have been calibrated in accordance with ASTM E74 practices and used within the certified Class A range.
 - Computed forces have been temperature corrected as necessary

Service Comments: Calibrated 100k range in accordance with ASTM and ISO standards. All readings found and left within tolerance. No adjustments required.

As Found Condition: In Tolerance

Calibration Procedure: CR100 Rev 16

Calibration Method: Follow the Force

Service Order #: 19502 - 26

NATHAN HATHAWAY

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Manufacture:	RIEHLE	Indicator:	N/A	Calibration Date:	20-Mar-2023
Model:	500FH	Capacity:	100000	Next Calibration:	20-Mar-2024
Serial #:	47247-ISO	Shunt #:	N/A	Customer Id:	691
Software Version:	N/A	Test Direction:	compression		
Specification's:	ISO 7500-1:2018	External Cell:	N/A		
Temp/Humidity:	68.5 F/25.1 %	Temp Variance:	0.3		

ISO REPORT

Run-1 2"

Piston Position: 1.0

Reading (%FS)	UUT Indication	Resolution	Resolution Error(%)	Reading-1	Reading-1 Error	Reading-1 Error%	Class
0.00%	0.0	100	0.000	0.0	0.000	0.00	0
20.00%	20,000.0	100	0.500	20,046.9	-46.900	-0.23	1
40.00%	40,000.0	100	0.250	40,212.3	-212.300	-0.53	1
60.00%	60,000.0	100	0.167	60,364.8	-364.800	-0.60	1
80.00%	80,000.0	100	0.125	80,392.1	-392.100	-0.49	1
100.00%	100,000.0	100	0.100	100,465.7	-465.700	-0.46	1

Run-1 Return to Zero: 0
Max Force Applied: 100000
Relative Zero Error: 0.00 %
Calibration Load Cell Agreement
Test Force: 0
Load Cell A Reading: 0
Load Cell B Reading: 0
Relative Error (A): 0.000
Relative Error (B): 0.000
Difference: 0.000
Class: 0.5

Run-2 342"

Piston Position: 2.0

Reading (%FS)	UUT Indication	Resolution	Resolution Error(%)	Reading-2	Reading-2 Error	Reading-2 Error%	Class
0.00%	0.0	100	0.000	0.0	0.000	0.00	0
20.00%	20,000.0	100	0.500	20,066.9	-66.900	-0.33	1
40.00%	40,000.0	100	0.250	40,199.6	-199.600	-0.50	1
60.00%	60,000.0	100	0.167	60,309.4	-309.400	-0.51	1
80.00%	80,000.0	100	0.125	80,414.7	-414.700	-0.52	1
100.00%	100,000.0	100	0.100	100,508.6	-508.600	-0.51	1

Run-2 Return to Zero: 0
Max Force Applied: 100000
Run to Zero Error: 0.00 %
Calibration Load Cell Agreement
Test Force: 0
Load Cell A Reading: 0
Load Cell B Reading: 0
Relative Error (A): 0.000
Relative Error (B): 0.000
Difference: 0.000
Class: 0.5

Run-3 462"

Piston Position: 3.0

Reading (%FS)	UUT Indication	Resolution	Resolution Error(%)	Reading-3	Reading-3 Error	Reading-3 Error%	Class
0.00%	0.0	100	0.000	0.0	0.000	0.00	0
20.00%	20,000.0	100	0.500	20,052.2	-52.200	-0.26	1
40.00%	40,000.0	100	0.250	40,197.0	-197.000	-0.49	1
60.00%	60,000.0	100	0.167	60,329.7	-329.700	-0.55	1
80.00%	80,000.0	100	0.125	80,391.1	-391.100	-0.49	1
100.00%	100,000.0	100	0.100	100,447.9	-447.900	-0.45	1

Run-3 Return to Zero: 0
Max Force Applied: 100000
Run to Zero Error: 0.00 %
Calibration Load Cell Agreement
Test Force: 0
Load Cell A Reading: 0
Load Cell B Reading: 0
Relative Error (A): 0.000
Relative Error (B): 0.000
Difference: 0.000
Class: 0.5

Service Order #: 19502 - 26

NATHAN HATHAWAY

SERVICE ENGINEER

- As a mutual protection to the purchaser, the public, and ourselves, all Cal-Rite calibration reports are submitted as the confidential property of the purchaser, and any authorization for publication of statements, conclusions, or extractions from or regarding reports is reserved pending our prior written approval.



Manufacture:	RIEHLE	Indicator:	N/A	Calibration Date:	20-Mar-2023
Model:	500FH	Capacity:	100000	Next Calibration:	20-Mar-2024
Serial #:	47247-ISO	Shunt #:	N/A	Customer Id:	691
Software Version:	N/A	Test Direction:	compression		
Specification's:	ISO 7500-1:2018	External Cell:	N/A		
Temp/Humidity:	68.5 F/25.1 %	Temp Variance:	0.3		

ISO REPORT

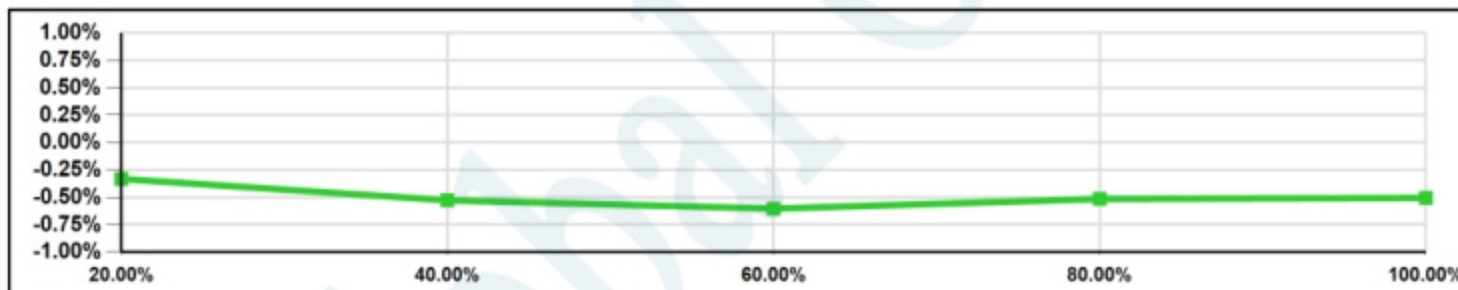
Run-4 (If Required)

Piston Position:

Reading (%FS)	UUT Indication	Resolution	Resolution Error(%)	Reading-4	Reading-4 Error	Reading-4 Error%	Class
0.00%	0.0	100	0.000	0.0	0.000	0.00	0
20.00%	20,000.0	100	0.500	0.0	0.000	0.00	1
40.00%	40,000.0	100	0.250	0.0	0.000	0.00	1
60.00%	60,000.0	100	0.167	0.0	0.000	0.00	1
80.00%	80,000.0	100	0.125	0.0	0.000	0.00	1
100.00%	100,000.0	100	0.100	0.0	0.000	0.00	1

Run-4 Return to Zero: 0
Max Force Applied: 100000
Run to Zero Error: 0.00%
Calibration Load Cell Agreement
Test Force: 0
Load Cell A Reading: 0
Load Cell B Reading: 0
Relative Error (A): 0.000
Relative Error (B): 0.000
Difference: 0.000
Class: 0.5

Linearity Profile (Percent Full Scale)



Calibrating Apparatus Used

Manufacture	Type	Serial Number	Cls	Capacity	Class A	Cert. #	Cal. Date	Cal. Due	Cal By
STRAINSENSE	SST1203C	060914B	1	100,000	2942.4	18271-1	11/12/2021	11/12/2023	MOREHOUSE

Service Order #: 19502 - 26

NATHAN HATHAWAY

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Cal-Rite Corporation

1665 QUINCY AVENUE, UNIT 103, NAPERVILLE, IL 60540
P 630.355.1522 F 630.355.1544 WWW.CAL-RITE.COM



Certificate # 866.01
Calibration

Manufacture:	RIEHLE	Indicator:	N/A	Calibration Date:	20-Mar-2023
Model:	500FH	Capacity:	100000	Next Calibration:	20-Mar-2024
Serial #:	47247-ISO	Shunt #:	N/A	Customer Id:	691
Software Version:	N/A	Test Direction:	compression		
Specification's:	ASTM E 4-21	External Cell:	N/A		
Temp/Humidity:	68.5 F/25.1 %	Temp Variance:	0.3		

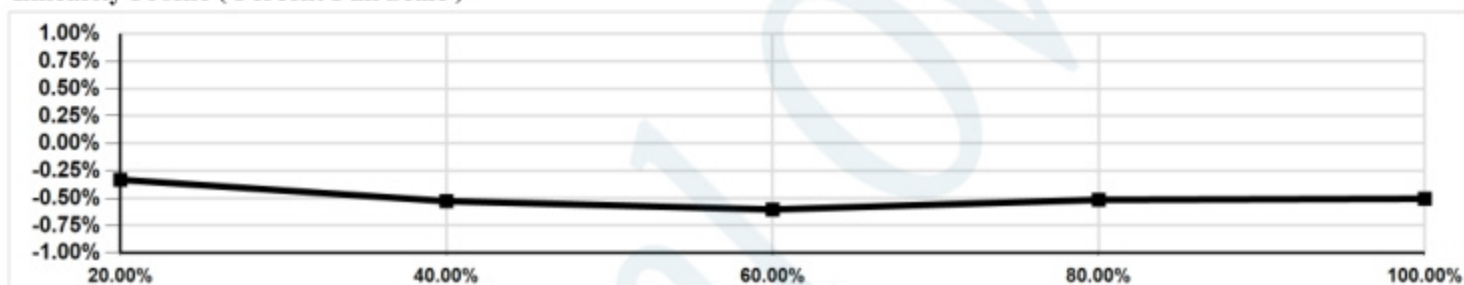
ASTM

Range: 100,000 LBF Resolution 100 LBF Accuracy: +/-: 1.0% Uncertainty: 0.29%

Readout UUT	As Found	As Adjusted	As Left	Repeat %	Max Error	Error %
0	0	0	0	0.0000	0.0000	0.0000
20,000.0	20,046.9	0.0	20,052.2	-0.026	-52.200	-0.260
40,000.0	40,212.3	0.0	40,197.0	0.038	-212.300	-0.528
60,000.0	60,364.8	0.0	60,329.7	0.058	-364.800	-0.604
80,000.0	80,392.1	0.0	80,391.1	0.001	-392.100	-0.488
100,000.0	100,465.7	0.0	100,447.9	0.018	-465.700	-0.464

Zero Return: 0.000% 0.000% 0.000%

Linearity Profile (Percent Full Scale)



Calibrating Apparatus Used

Manufacture	Serial Number	Capacity	Class A	Cal Date	Cal Due	Calibrated By
STRAINSSENSE	060914B	100,000	2942.4	11/12/2021	11/12/2023	MOREHOUSE

Service Order #: 19502 - 26

NATHAN HATHAWAY

SERVICE ENGINEER

- As a mutual protection to the purchaser, the public, and ourselves, all Cal-Rite calibration reports are submitted as the confidential property of the purchaser, and any authorization for publication of statements, conclusions, or extractions from or regarding reports is reserved pending our prior written approval.

APPENDIX C. STRAND TENSILE TEST RESULTS



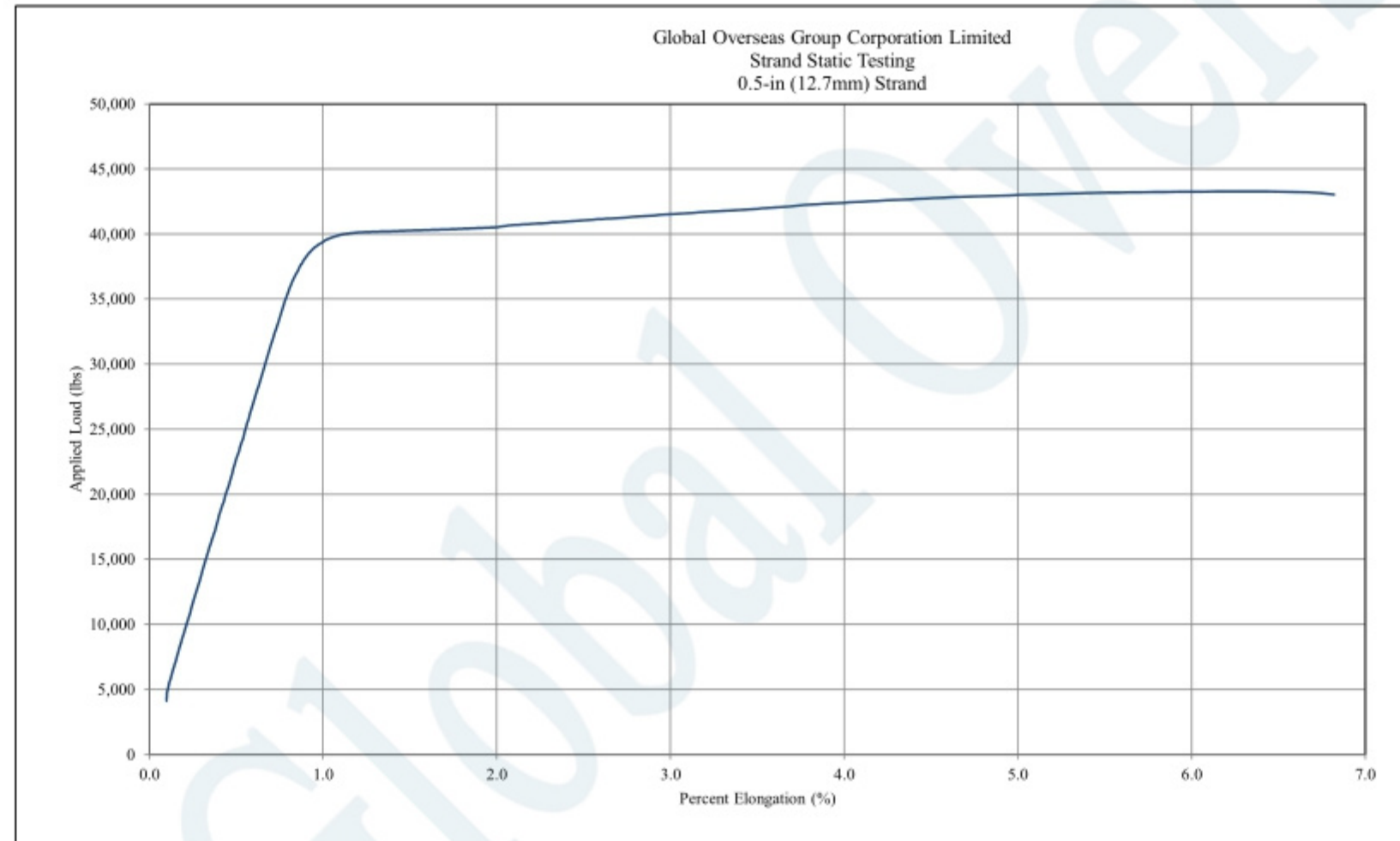


ENGINEERS
ARCHITECTS
MATERIALS SCIENTISTS

Wiss, Janney, Elstner Associates, Inc.
330 Pfingsten Road
Northbrook, Illinois 60062

Verified Dimensions	
Strand Diameter	0.500 in
Weight	233 grams
Length	11.863 in
Area	0.152 in ²

Measured Values	
Load at 1% Elongation	39,370 lbs
Breaking Load	43,270 lbs
Elongation @ Max. Load	6.29 percent
Modulus of Elasticity	29,137 ksi



WJE Project Number	2023.5558
Client	Global Overseas Group Corp.
Sample Tested	0.5-in, 270 ksi, 7-wire strand
Notes	Global Overseas Group Corp. provided strand

Test Location	Northbrook, IL
Test Operator	B Easton
Test Date	8/31/2023
Test Methods	ASTM A1061

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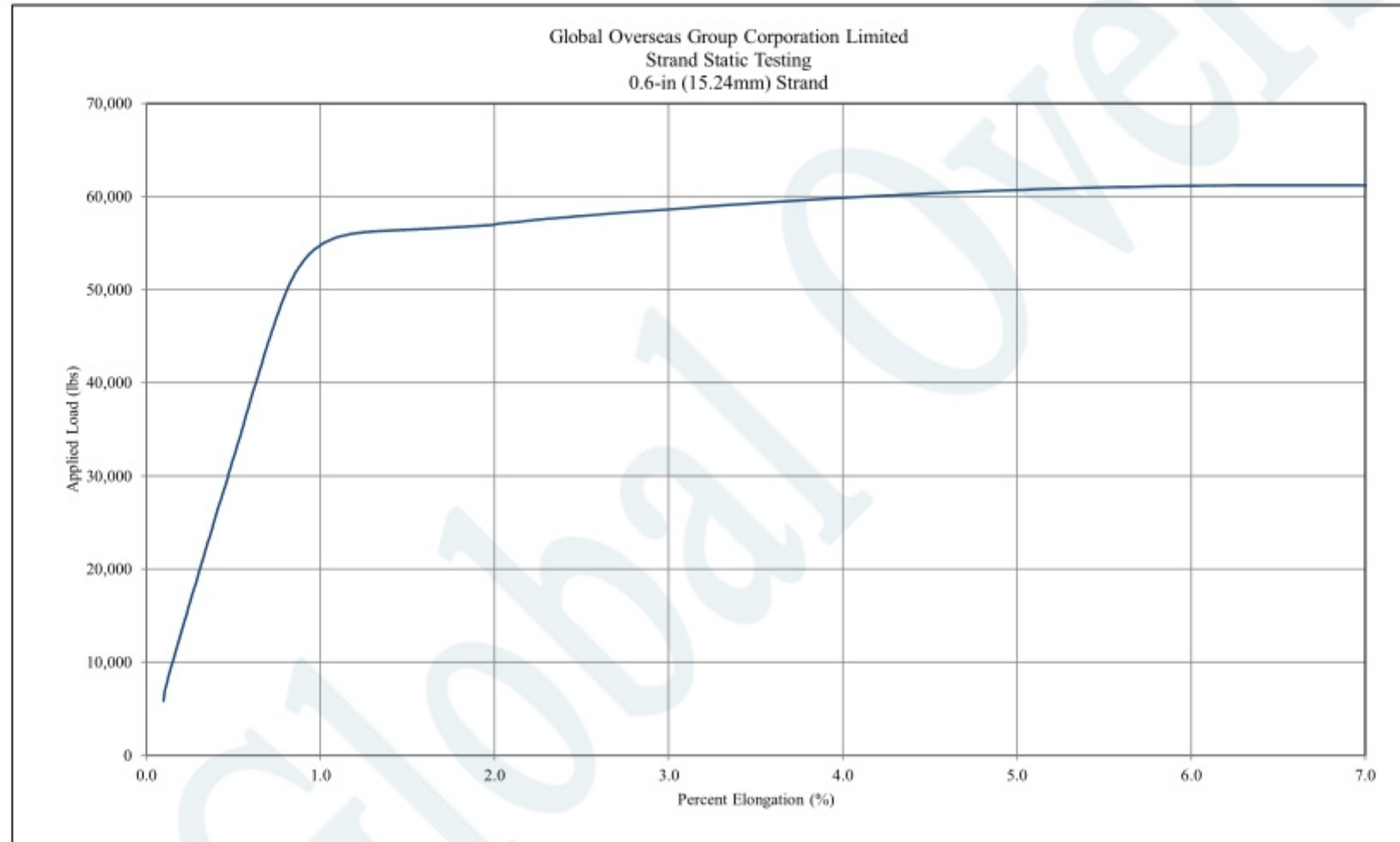


ENGINEERS
ARCHITECTS
MATERIALS SCIENTISTS

Wiss, Janney, Elstner Associates, Inc.
330 Pfingsten Road
Northbrook, Illinois 60062

Verified Dimensions	
Strand Diameter	0.600 in
Weight	335.8 grams
Length	11.867 in
Area	0.219 in ²

Measured Values	
Load at 1% Elongation	54,680 lbs
Breaking Load	61,200 lbs
Elongation @ Max. Load	6.54 percent
Modulus of Elasticity	28,608 ksi



WJE Project Number	2023.5558
Client	Global Overseas Group Corp.
Sample Tested	0.6-in, 270 ksi, 7-wire strand
Notes	Global Overseas Group Corp. provided strand

Test Location	Northbrook, IL
Test Operator	B Easton
Test Date	8/31/2023
Test Methods	ASTM A1061

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