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Company: Haala Industries Report Number: ESP010867P.3

Address: 2101 Hwy. 4 South Date: August 21, 2012

Sleepy Eye, Minnesota 56085 Page:

Attn: Mr. Steve Haala

Tension Testing of Lifting Insert/Anchor

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Engineer under the laws of the State of Minnesota.

Jason R. Steen, P.E. Registration No. 43491

Prepared By:

Jason R. Steen, P.E.

Staff Engineer, Building Products Evaluation

Phone: 651-659-7259

Reviewed By:

John D. Lee, P.E., LEED AP

1 of 6

Manager, Building Products Evaluation

Phone: 651-659-7408

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Date: August 21, 2012 Report No: ESP010867P.3

Page: 2 of 6

INTRODUCTION:

This report presents the results of testing performed by Element Materials Technology; on Haala Industries precast concrete insert/anchor. The scope of our work was limited to the following:

Conduct pull out testing of the insert/anchor.

2. Prepare a report in regards to the results.

Our work was authorized by Mr. Steve Haala of Haala, Industries on July 24, 2012, and approved verbally.

CONCLUSION:

The precast concrete insert/anchor was tested on August 1, 2012. One sample was loaded to failure in accordance with the Test Procedures found below. The failure mode for sample consisted of steel failure. The ultimate load of the sample was 18,671 pounds.

TEST SAMPLE:

The insert/anchor samples were submitted by the client to Element Materials Technology, St. Paul, Minnesota, where they were received on July 17, 2012. A single concrete block with one embedded lifting insert/anchor was submitted. Haala Industries Insert/Anchors are used with precast concrete. The top of the insert/anchor was installed just below the surface of the concrete in a recessed pocket. Sample drawing as received is shown below.

TEST PROCEDURES:

The tests were conducted as tension tests in accordance with the test provisions listed in ASTM E 488 - 96 "standard Test Method for Strength of Anchors in Concrete and Masonry Element". The International Accreditation Service, Inc. (IAS) issued a Certificate of Accreditation TL-217, January 12, 2012, listing Element Materials Technology as an accredited laboratory for a scope of services that includes testing to ASTM E 488.

CONCRETE:

The concrete structural member was designed and cast by others. No description of the mix design was received for this concrete. No concrete strength was determined at time of testing.

ANCHOR INSTALLATION:

The concrete insert/anchor tested in this project was pre-installed by the client. Element has no information as to the installation of the anchor in general.



Date: August 21, 2012

Report No: ESP010867P.3 Page: 3 of 6

EQUIPMENT:

The test load was measured with load cells, CME-SPC-406 calibration due on 05/11/13.

TEST RESULTS:

Element Materials Technology - St. Paul Project No. ESP010867P				Sample Information Cast In Place Loop Anchor and Strand Anchors					Tests Performed 90-Degree Tension		
Setup and Installation				Test Equipment					Calibration Due Date		
Technicians	S. Palodichuk, N. Holderbaum				,		CME-SPC-910 CME-SPC-406		5/26/2013 5/11/2013		
Concrete Cast By	Contractor				Caliper CN		CME-SPC-300	ME-SPC-300		5/22/2013	
Anchors Installed By	Contractor										
Test #3 Information							1				
Anchor System Anchor Material Anchor Location Anchor Size Before(in.) Anchor Size After(in.) Block Number Cast Date Install Depth (in.) Confined Test	Part # 3836 Ca Steel Strands Top of Block - 0.375" Diamete Steel Failure 24M 6/8/2011 Unknown No	Form Finish			ı				ı	I	
Test Data	3										
Test Date	08/01/12										
Test Time	10:50 AM										
Install Date	06/08/12										
Ultimate Load (lbf)	18671										
Failure Mode	ST										
Test Duration (sec)	65										
Test Fixture Type	Clutch										
Test Fixture Diameter	0.670										
Outside Anchor Span	2 1/2	1									
Anchor Height Before	n/a		1					1		1	
Anchor Height After	n/a						1				
Failure Mode Index		CC - Concrete	Cone	1	SB - Steel, Boo	dy	•	BB - Borehole	Bond	•	
PO - Anchor Pull Out		CE - Concrete			ST - Steel, Thr	•		BE - Bond Eler			
PT - Anchor Pull Through		CP - Concrete	-		SN - Steel, Ne			BA - Bond And			
•		CS - Concrete					TI - Internal Thread				

REMARKS:

The remains of the concrete sample and insert/anchor test specimens are subject to disposal thirty days from the date of this report.



August 21, 2012 4 of 6 Report No: ESP010867P.3

Date: Page:

PHOTOGRAPHS:





Figure 1 – 90-degree Tension Test Set-up

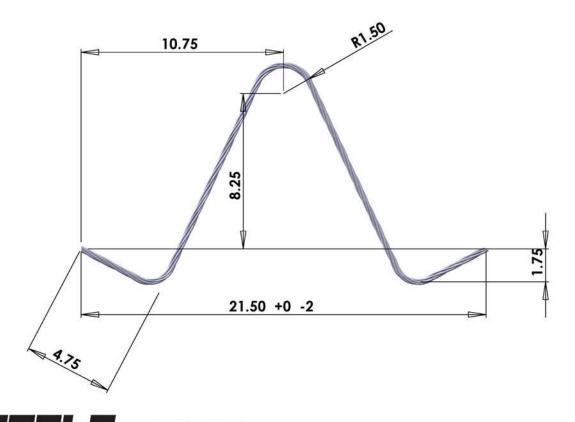


Date: August 21, 2012 Report No: ESP010867P.3

Page: 5 of 6

PRODUCT DRAWING:

3/8" cable,7 wire EHS class A galvanized **Dimensions are Inches** Overall length 36"



1201 Hwy. 4 South P.O. Box 389 Sleepy Eye, MN 56085

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Email: steve@haala.com
DATE: 03/28/08
DRAWN BY: CALEB



Date: August 21, 2012 Page: Report No: ESP010867P.3 6 of 6

STEEL PROPERTIES:



P.O. Box 96149 12611 Cain Circle (77015) Houston, Texas 77213-6149 Phone: (713) 455-2888

Fax: (713) 455-3888

CERTIFICATE OF COMPLIANCE

CUSTOMER: HAALA INDUSTRIES, INC CUSTOMER PO #: 33060			
3/8"	30 X 5000' REELS	ASTM-A475	

HEAT #	SIZE	MINIMUM BREAKING STRENGTH (LBS)	ELONGATION PER 24"	WEIGHT OF COATING (OZ. PER FT ²)	MANDREL ADHERENCE & DUCTILITY	LAY LENGTH
N/A	3/8"	15400	4% min.	0.85	PASS	5.40"

National Strand certifies that the above test results are representative of those contained in company records and were obtained using methods consistent with the requirements of applicable specifications.

The above products were manufactured in the USA.

Juan Garza

Quality Department