

Element Materials Technology 662 Cromwell Avenue St Paul, MN 55114-1720 USA P 651 645 3601 F 651 659 7348 T 888 786 7555 info.stpaul@element.com element.com

Company: Haala Industries Report Number: ESP010867P.3

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

Sleepy Eye, Minnesota 56085

Attn: Mr. Steve Haala

Tension Testing of Lifting Insert/Anchor

Page:

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

It is our policy to retain components and sample remnants for 30 days from the report date, after which time they may be discarded. The data herein represents only the item(s) tested. This report shall not be reproduced, except in full, without prior permission of Element Materials Technology.

This document contains technical data whose export and re-export/retransfer is subject to control by the U.S. Department of Commerce under the Export Administration Act and the Export Administration Regulations. The Department of Commerce's prior written approval is required for the export or re-export/retransfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

These commodities, Technology, or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

This project shall be governed exclusively by the General Terms and Conditions of Sale and Performance of Testing Services by Element Materials Technology. In no event shall Element Materials Technology be liable for any consequential, special or indirect loss or any damages above the cost of the work.



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		
element* 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	Contractor			Caliper		CME-SPC-300		5/22/2013	
Anchors Installed By	Contractor									
Test #3 Information			<u> </u>							
Anchor System	Part # 3836 Ca	able								
Anchor Material	Steel Strands									
Anchor Location	Top of Block -									
Anchor Size Before(in.)	0.375" Diamete	er								
Anchor Size After(in.)	Steel Failure									
Block Number	24M									
Cast Date	6/8/2011									
Install Depth (in.)	Unknown									
Confined Test	No									
Test Number	3									
Test Data	,									
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	ļ								1
Test Fixture Diameter	0.670	ļ								1
Outside Anchor Span	2 1/2									1
Anchor Height Before	n/a									1
Anchor Height After	n/a									
Failure Mode Index		CC - Concrete			SB - Steel, Boo	•		BB - Borehole		
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 Split			TN - Mating Element			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 Date: Page: Report No: ESP010867P.3

PHOTOGRAPHS:





Figure 1 – 90-degree Tension Test Set-up

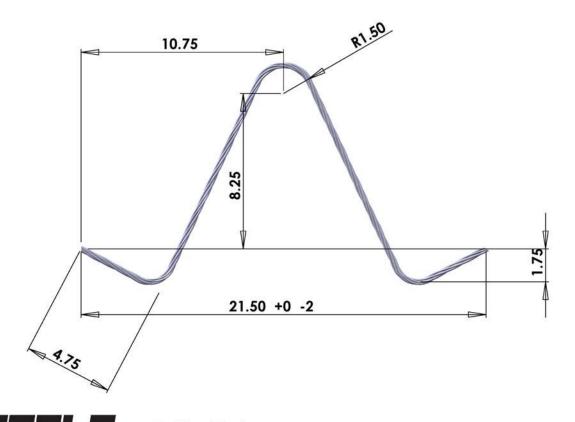


Date: August 21, 2012 Report No: ESP010867P.3

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

STEVE HAALA OFFICE: 507-794-5821

Fax: 507-794-5823

Cell: 507-920-9180 Home: 507-794-4848

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



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