

**NATIONAL TECHNICAL SYSTEMS - CHICAGO**

1660 Wall Street, Suite 100

Mount Prospect, IL 60056

USA

847-934-5300


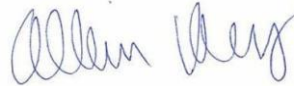
[www.nts.com](http://www.nts.com)**TEST REPORT****BONDBREAKER COATED DOWELS IN QUIKRETE 5000 CEMENT  
AASHTO T253 TENSILE TESTING AND EXAMINATION**

NTS Chicago is accredited per ISO/IEC 17025 to perform tensile/compression testing between  
200-20,000 lbs-force

**Prepared For:**  
Chris Schenk  
O-Dowel  
333 W North Ave  
UPS Store #391  
Chicago, IL 60610

<b>JOB NO.:</b>	PR115631
<b>P.O. NO.:</b>	03-24-2020-PO1
<b>REVISION NO.:</b>	R1
<b>ISSUE DATE:</b>	05/11/2020
<b>SECURITY CLASSIFICATION:</b>	Unclassified
<b>DESCRIPTION OF ITEMS TESTED:</b>	Four (4) tubular dowels coated with Tectyl-506 bondbreaker 1-5/8" outside diameter x 0.120" wall thickness x 18" long Cured in Quikrete 5000 for 48 hours per AASTHO R39

**Approval:**

<b>PREPARED BY:</b>	Reid Kleiner – Test Technician	
<b>APPROVED BY:</b>	Allen Klug – Quality Representative	

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**TEST SUMMARY**

Test Title	Test Dates	Specification	Results
Tensile	05/08/20 to 05/09/20	AASTHO R39 Sections 6.1 - 6.3 AASHTO T253 Section 6.4	Conform
Examination	05/10/20	AASHTO T253 Section 6.7	Conform



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## **TENSILE TEST REPORT**

### **TEST DATES**

05/08/20 to 05/09/20

### **TEST SPECIMENS**

Four (4) tubular dowels coated with Tectyl-506 bondbreaker  
1-3/8" or 1-5/8" outside diameter x .120" wall thickness x 18" long  
Cured in Quikrete 5000 for 48 hours Per AASTHO R39

### **REFERENCES AND REQUIREMENTS**

AASTHO R39 Sections 6.1 - 6.3

AASHTO T253 Section 6.4

NTS Chicago is accredited per ISO/IEC 17025 to perform tensile/compression testing between 200-20,000 lbs-force

### **TEST PROCEDURE**

Sample dowels shall be coated in provided bondbreaker and allowed to dry for 24h before being cast in Quikrete 5000. Per AASTHO R39, section 6.1 to 6.3, samples were cast in 6" diameter concrete molds and filled up to 9". The concrete was allowed to cure for 24 hours, and then the mold was removed and cured for another 24 hours. After 48 hours of curing time, samples were be secured in tensile testing machine and load applied at a feed rate of 0.03in/min to a limit of 0.5in or 2,500lbs .

### **LIST OF ANY DEVIATION/EXCLUSION FROM AGREED TEST METHOD**

There was no deviation from the agreed upon test method

### **TEST RESULTS**

Samples were prepared and tested per the above procedure. Force and extension rates were recorded and shown in the below graphs. All samples came dislodged at 900lbs force or less.

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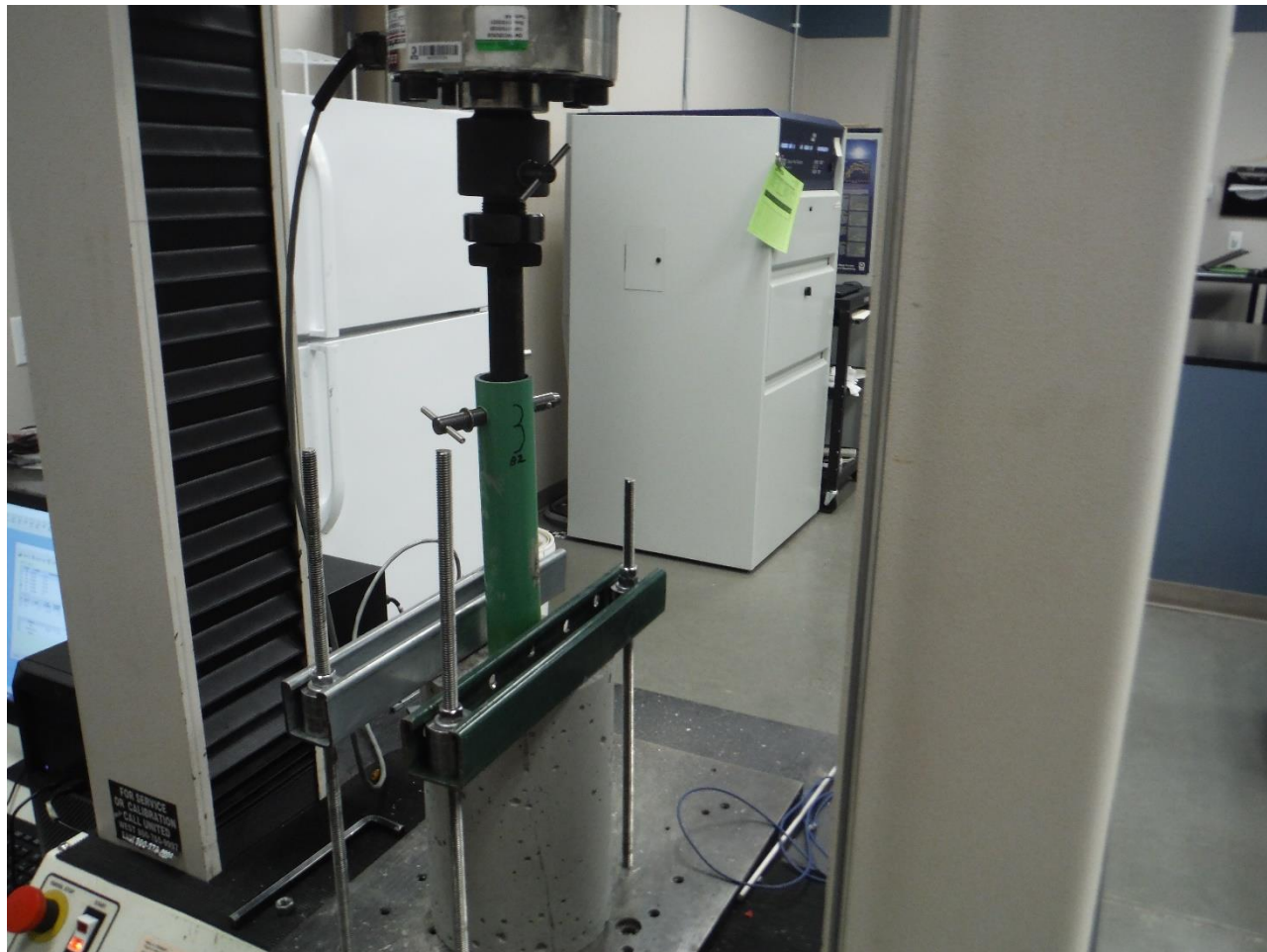
**TEST APPARATUS**

Asset Number	Manufacturer	Description	M/N	S/N	Start Date	End Date	Last Calibration	Cal Interval (Months)	Cal Due
WC052525	United Calibration	United Test Machine Tensile Tester	STM-20-E	0904565	05/06/2020	05/11/2020	01/07/2020	12	01/07/2021
WC052526	United Calibration	20 K Load Cell	2450BXM-20K	FI-144787A	05/06/2020	05/11/2020	01/10/2020	12	01/10/2021
WC053225	Stanley	Tape Measure	33-428	WC053225	05/06/2020	05/11/2020	08/20/2018	24	08/20/2020



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**PHOTOGRAPHS**



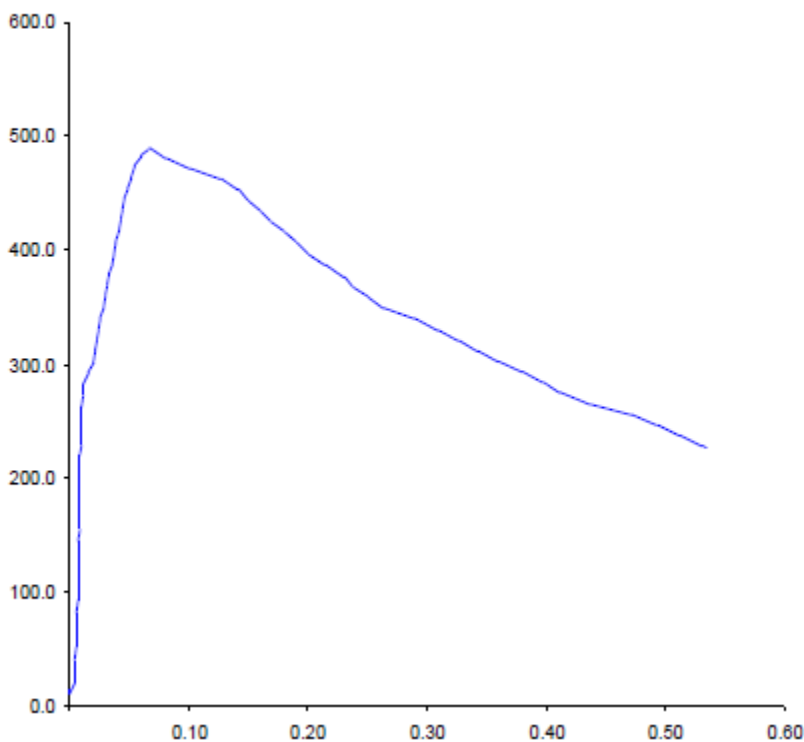
**Test Setup**



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## GRAPHS

Force (Lbs) vs Extension (Inches)

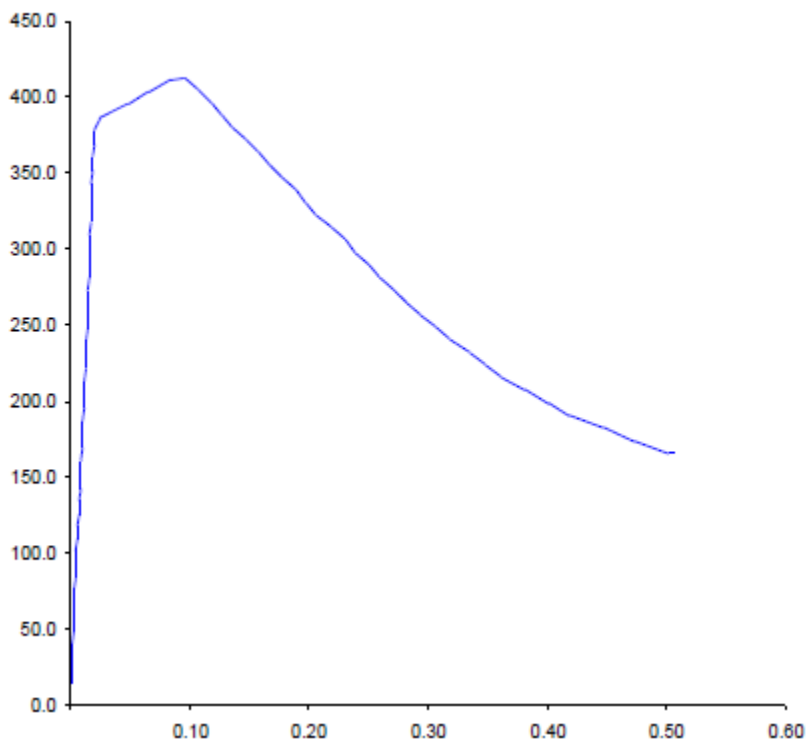


Sample 1 force (max 489.983lbs)



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Force (Lbs) vs Extension (Inches)



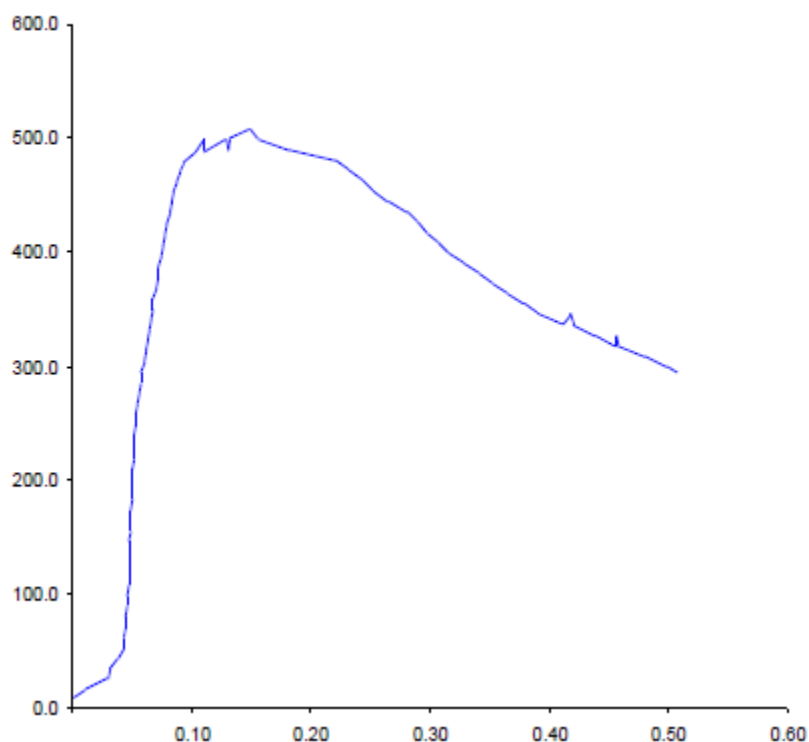
Sample 2 force (max 412.938lbs)





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Force (Lbs) vs Extension (Inches)

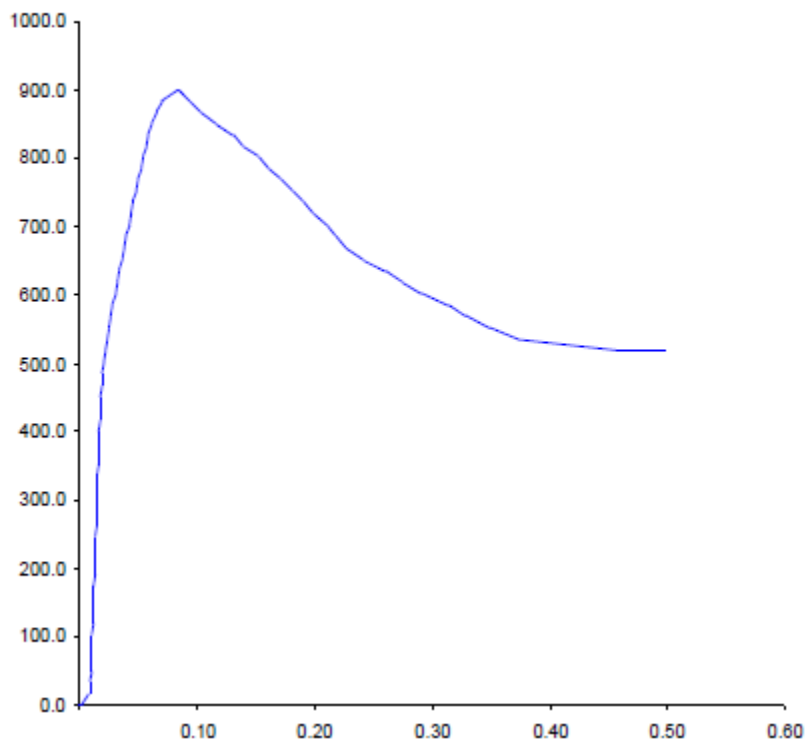


Sample 3 force (max 507.933lbs)



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Force (Lbs) vs Extension (Inches)



**Sample 4 force (max 898.443lbs)**



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## **EXAMINATION TEST REPORT**

### **TEST DATE**

05/10/20

### **TEST SPECIMENS**

Four (4) tubular dowels coated with Tectyl-506 bondbreaker

### **REFERENCES AND REQUIREMENTS**

AASHTO T253 Section 6.7

NTS Chicago is accredited per ISO/IEC 17025 to perform tensile/compression testing between 200-20,000 lbs-force

### **TEST PROCEDURE**

After testing per previous sections, concrete shall be removed from the sample dowels by breaking. The dowel and concrete-dowel interface shall be examined for corrosion, tearing, and perforation.

### **LIST OF ANY DEVIATION/EXCLUSION FROM AGREED TEST METHOD**

There was no deviation from the agreed upon test method.

### **TEST RESULTS**

Sample castings were opened and inspected per the above procedure. The dowels and concrete-dowel interfaces exposed did not exhibit visible corrosion, tearing, or perforation.

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### PHOTOGRAPHS



**Sample 1 Dowel**

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**Sample 1 Separated Concrete**



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**Sample 2 Dowel**

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**Sample 2 Separated Concrete**

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**Sample 3 Dowel**





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**Sample 3 Separated Concrete**



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**Sample 4 Dowel**

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**Sample 4 Separated Concrete**



