



BarSplicer

DoughNUT™

**THREADED END ANCHORAGES
FOR Gr.60 REINFORCING BARS**



PERFORMANCE TEST DATA

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INTRODUCTION

Barsplice Products, Inc. has conducted a series of in-air tests on the Barsplicer DoughNUT™ system of reinforcing bar mechanical end anchorages, sizes No. 4 through No. 11. The purpose of this testing is to ensure that they are manufactured to the quality standards of BPI's ISO 9001 Quality System and are capable of exceeding various Building Code strength requirements.

TENSILE TEST PROCEDURE

Test specimens were loaded monotonically in tension to failure to determine the capability of the Barsplicer DoughNUT™ end anchorage system. The tests were conducted in accordance with ASTM A370, "Standard Test Methods and Definitions for Mechanical Testing of Steel Products" and ASTM A1034, "Standard Test Methods for Testing Mechanical Splices for Steel Reinforcing Bars." Loads were applied through the bearing area of the head. The testing was performed to exceed the mechanical anchorage strength requirements of ACI (American Concrete Institute) 318-2014 Section 25.4.5.1 (ACI 318-2011 Section 12.6) and ASTM A970, Class A & Class HA.

All monotonic tension tests were carried out in a 600 kip Forney universal testing machine, located at the Barsplice manufacturing facility. Current calibration certificates for the test machine are on file.

The reinforcing steel used in these tests conforms to the requirements of ASTM A615, Grade 60 and ASTM A706, Grade 60. Both uncoated and epoxy coated reinforcing steel and matching Barsplicer DoughNUT™ heads were tested.

TEST RESULTS

Results of the Barsplicer DoughNUT™ tension testing described above are summarized in Table 1 and represented in Chart 1.

SUMMARY

Tension test specimens exceeded the strength requirements of ACI 318-2014*, namely 100% x specified yield strength of Grade 60 rebar.

Additionally, the tension test specimens exceeded the strength requirements stated in ASTM A970, Class A and Class HA, namely the specified tensile strength of Grade 60 rebar which equates to 90,000 psi or 150% x specified yield for A615 rebar and 80,000 psi or 133% x specified yield for A706 rebar.

* In meeting the strength requirements of ACI-318, the Barsplicer DoughNUT™ system complies with IBC 2015 Section 1901.2.

TABLE 1: BARSPLICER DoughNUT™ TENSILE TEST RESULTS

BAR SIZE	TEST LAB ID # & REF #		PEAK STRENGTH		BAR SIZE	TEST LAB ID # & REF #		PEAK STRENGTH	
			MAX STRESS (psi)	% GR. 60 SPEC. YIELD				MAX STRESS (psi)	% GR. 60 SPEC. YIELD
No. 4	4T1219	4A	99,800	166%	No. 8	8T1401	8A	108,139	180%
		4B	101,750	170%			8B	108,481	181%
	4T1226	4A	98,050	163%		8T1813	8A	100,658	168%
		4B	95,700	160%			8B	103,696	173%
	4T2108	4A	101,000	168%		8T2502 EPOXY	8A	98,595	164%
		4B	100,650	168%			8B	98,772	165%
	4T2261	4A	100,900	168%		8T3270 EPOXY	8A	102,329	171%
		4B	99,000	165%			8B	101,797	170%
No. 5	5T1121	5A	102,806	171%	No. 9	9T1120	9A	109,910	183%
		5B	102,484	171%			9B	109,930	183%
	5T6848 EPOXY	5A	106,323	177%		9T1328	9A	103,570	173%
		5B	107,516	179%			9B	110,960	185%
	5T7302 EPOXY	5A	99,065	165%		9T1831 EPOXY	9A	98,180	164%
		5B	96,387	161%			9B	98,710	165%
	5T7912	5A	100,581	168%		9T2131 EPOXY	9A	105,050	175%
		5B	101,387	169%			9B	103,930	173%
No. 6	6T2281	6A	99,955	167%	No. 10	10T1062	10A	102,315	171%
		6B	100,227	167%			10B	102,882	171%
	6T2469	6A	97,773	163%		10T1334	10A	104,102	174%
		6B	107,500	179%			10B	104,677	174%
	6T5472	6A	105,273	175%		10T1856	10A	101,772	170%
		6B	101,864	170%			10B	102,205	170%
	6T5571 EPOXY	6A	104,841	175%		10T1894*	10A	97,535	163%
		6B	104,205	174%			10A	99,690	166%
No. 7	7T1333	7A	106,100	177%	10T1942	10B	102,330	171%	
		7B	106,400	177%		No. 11	11T2411	11A	99,263
	7T1504 EPOXY	7A	105,733	176%	11T2527			11B	99,449
		7B	105,850	176%			11A	102,923	172%
	7T1791 EPOXY	7A	102,883	171%	11T3177 EPOXY		11B	102,962	172%
		7B	99,200	165%			11A	98,718	165%
	7T2043	7A	104,533	174%	11T3920 EPOXY		11B	98,071	163%
		7B	105,633	176%			11A	100,045	167%
7T2188*	7A	94,183	157%	11B	100,981		168%		

* Test conducted on ASTM A706 reinforcement bar

CHART 1: BARSPLICER DoughNUT™ TENSILE TEST RESULTS

