



Zap Screwlok®

Double Barrel

**SHEAR SCREW & WEDGE
MECHANICAL LAP SPLICE
FOR REINFORCING BARS**



PERFORMANCE TEST DATA

JULY 2020

Barsplice Products, Inc. • 4900 Webster Street • Dayton OH 45414, USA
Tel: (937) 275-8700 • Fax: (937) 275-9566 • e-mail: bar@barsplice.com
Copyright © 2020, Barsplice Products, Inc., "BPI" • All rights reserved • www.barsplice.com

INTRODUCTION

Barsplice Products, Inc. have conducted a series of tests on reinforcing bar mechanical lap splices, sizes No. 4 through No. 8. The tests have been conducted on black and epoxy coated Double Barrel Zap Screwlok® Splices. The purpose of the testing is to ensure that products are manufactured to the quality standards of BPI's ISO 9001 Quality System and are capable of exceeding strength requirements of various Building Codes.

TENSILE TEST PROCEDURE

Test specimens were loaded monotonically in tension to failure to determine the capability of the splice 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." The testing was performed to exceed the strength requirements of ACI (American Concrete Institute) 318-19, Chapter 25 using Grade 60 reinforcing bar.

All monotonic tension tests were carried out on a 600 kip Forney universal testing machine, or a 900 kip MTS universal test machine, located at the Barsplice manufacturing facility. Current calibration certificates for the test machine(s) are on file.

The reinforcing steel used in these tests conforms to the requirements of ASTM A615, Grade 60 and ASTM A706, Grade 60.

TEST RESULTS

Results of the Double Barrel Zap Screwlok® tension testing described above are summarized in Table 1 and represented in Chart 1.

SUMMARY

- (1) Tension test specimens exceeded the Type 1 strength requirements of ACI 318-19, Chapter 25, namely 125% x specified yield strength of Grade 60 rebar, specifically 75,000 psi.

TABLE 1: DOUBLE BARREL ZAP SCREWLOK® TENSILE TEST RESULTS

BAR SIZE	BAR TYPE	TEST LAB ID # & REF #		PEAK STRENGTH			
				MAX STRESS (psi)	% GR. 60 SPEC. YIELD		
No. 4	BLACK	4T1144	4A	105,350	176%		
			4B	101,500	169%		
		4T2030	4A	104,800	175%		
			4B	107,300	179%		
		4T3378	4A	103,600	173%		
			4B	102,050	170%		
	EPOXY	4T1197	4A	100,800	168%		
			4B	98,950	165%		
		4T3098	4A	102,700	171%		
			4B	101,350	169%		
		4T3150	4A	98,900	165%		
			4B	99,950	167%		
No. 5	BLACK	5T7960	5A	100,903	168%		
			5B	107,161	179%		
		5T8127	5A	104,290	174%		
			5B	103,968	173%		
		5T8642	5A	103,581	173%		
			5B	100,548	168%		
	EPOXY	5T1697	5A	106,677	178%		
			5B	104,323	174%		
		5T7871	5A	96,581	161%		
			5B	97,000	162%		
		5T7905	5A	96,419	161%		
			5B	100,677	168%		
No. 6	BLACK	6T5531	6A	106,795	178%		
			6B	104,318	174%		
		6T5833	6A	104,977	175%		
			6B	101,045	168%		
		6T5876	6A	103,636	173%		
			6B	100,659	168%		
	EPOXY	6T2480	6A	102,364	171%		
			6B	105,886	176%		
		6T5473	6A	95,273	159%		
			6B	98,864	165%		
		6T5471	6A	99,068	165%		
			6B	96,909	162%		
No. 7	BLACK	7T1409	7A	107,450	179%		
			7B	108,350	181%		
		7T2776	7A	105,780	176%		
			7B	105,265	175%		
		7T2845	7A	105,184	175%		
			7B	104,540	174%		
		7T2798	7A	100,406	167%		
			7B	101,923	170%		
		EPOXY	7T956	7A	96,000	160%	
				7T985	7A	95,483	159%
			7T1391*	7A	96,550	161%	
			7T1434*	7A	91,783	153%	
	7T1454		7A	103,950	173%		
	7T1455		7A	98,783	165%		
	7T1527		7A	104,483	174%		
			7B	101,733	170%		
	7T2218		7A	96,957	162%		
			7B	96,894	161%		
	No. 8		BLACK	8T1930*	8A	93,519	156%
				8T1999*	8A	94,810	158%
		8T2570		8A	105,987	177%	
				8B	107,468	179%	
		8T3101		8A	103,909	173%	
				8B	112,724	188%	
8T3178		8A	104,181	174%			
		8B	105,118	175%			
EPOXY		8T3724	8A	109,821	183%		
			8B	110,328	184%		
		8T1771	8A	97,101	162%		
			8B	94,886	158%		
	8T3081	8A	87,355	146%			
		8B	98,782	165%			
8T3426	8A	100,542	168%				
	8T3468	8A	100,401	167%			
8B		100,880	168%				

* Test conducted on ASTM A706 reinforcement bar

CHART 1: DOUBLE BARREL ZAP SCREWLOK® TENSILE TEST RESULTS

