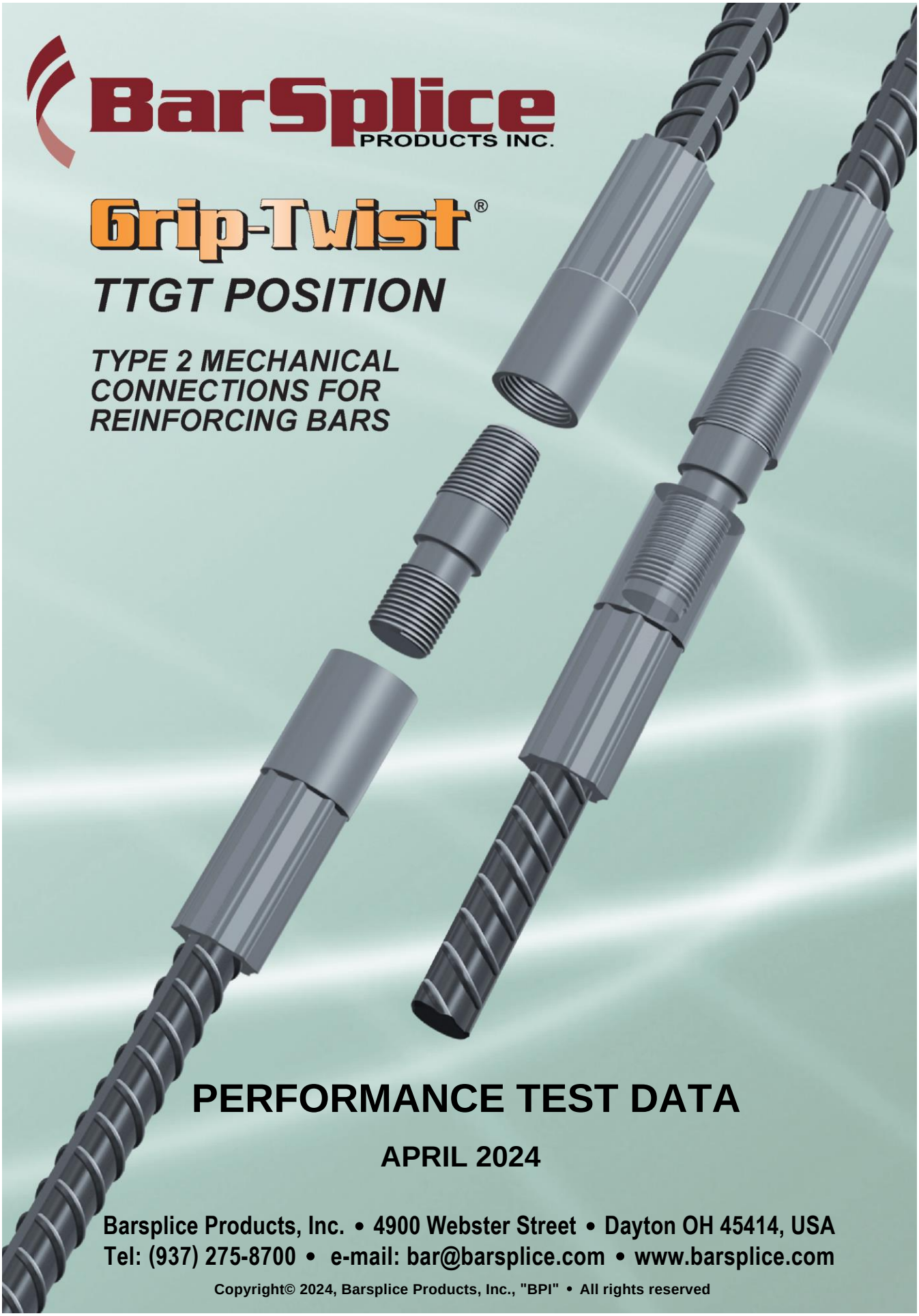
BarSplice PRODUCTS INC.

Grip-Twist®

TTGT POSITION

TYPE 2 MECHANICAL CONNECTIONS FOR REINFORCING BARS



PERFORMANCE TEST DATA

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INTRODUCTION

Barsplice Products, Inc. (BPI) have conducted a series of tests on reinforcing bar mechanical splices, sizes No. 3 through No. 18. The tests have been conducted on Taper Threaded Grip-Twist® Position (TPA) Mechanical 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 and Chapter 18 using ASTM A615 and A706 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 Taper Threaded Grip-Twist® Position (TPA) tension testing described above are summarized in Table 1 and represented in Chart 1.

SUMMARY

Tension test specimens exceeded the Type 1 strength requirements of ACI 318-19, Chapter 25, namely 125% x specified yield strength of Grade 60 reinforcement, or 75,000 psi (515 MPa).

Tension test specimens exceeded the Type 2 strength requirements of ACI 318-19, Chapter 18, namely the specified tensile strength of ASTM A615 and A706 Grade 60 bar, or 80,000 psi (550 MPa), which is equivalent to 133% x specified yield.

TABLE 1: TTGT POSITION TENSILE TEST RESULTS

BAR SIZE	TEST LAB ID # & REF #		PEAK STRENGTH	
			MAX STRESS (psi)	% GR. 60 SPEC. YIELD
No. 3	3T125	3A	105,091	175%
	3T126	3A	103,727	173%
	3T127	3A	100,273	167%
	3T128	3A	104,364	174%
No. 4	4T2468	4A	106,150	177%
		4B	102,800	171%
	4T2983	4A	111,350	186%
		4B	110,150	184%
	4T3039	4A	112,050	187%
		4B	105,400	176%
No. 5	5T3512*	5A	96,645	161%
	5T6612	5A	109,806	183%
		5B	111,290	185%
	5T10990	5A	112,777	188%
		5B	113,088	188%
	5T11454	5A	116,507	194%
		5B	114,107	190%
	5T12973	5A	107,387	179%
		5B	110,854	185%
No. 6	6T635	6A	115,683	193%
		6B	116,001	193%
	6T1718	6A	107,432	179%
		6B	113,659	189%
	6T2282	6A	121,795	203%
		6B	115,409	192%
	6T7317	6A	106,829	178%
		6B	109,423	182%
No. 7	7T319	7A	105,746	176%
		7B	105,596	176%
	7T451	7A	116,095	193%
		7B	114,211	190%
	7T452	7A	117,572	196%
		7B	113,039	188%
	7T2060	7A	111,347	186%
		7B	110,973	185%

BAR SIZE	TEST LAB ID # & REF #		PEAK STRENGTH	
			MAX STRESS (psi)	% GR. 60 SPEC. YIELD
No. 8	8T649	8A	108,304	181%
		8B	107,089	178%
	8T1505	8A	109,633	183%
		8B	108,671	181%
	8T2530	8A	110,949	185%
		8B	111,316	186%
	8T3731	8A	112,402	187%
		8B	114,961	192%
No. 9	9T342	9A	109,162	182%
		9B	110,132	184%
	9T1091	9A	107,070	178%
		9B	108,450	181%
	9T1780	9A	114,410	191%
		9B	115,040	192%
	9T2100	9A	110,445	184%
		9B	111,308	186%
No. 10	10T1631	10A	108,094	180%
		10B	111,543	186%
	10T2022	10A	108,642	181%
		10B	110,583	184%
	10T2098	10A	106,648	178%
		10B	108,195	180%
	10T2542	10A	113,169	189%
	10T2896	10A	115,792	193%
		10B	117,642	196%
No. 11	11T3832*	11A	95,480	159%
	11T4062	11A	110,003	183%
		11B	109,341	182%
	11T4193	11A	112,710	188%
		11B	111,722	186%
	11T4202*	11A	100,515	168%
	11T5618	11A	113,759	190%
		11B	114,841	191%
	11T5645	11A	116,013	193%
		11B	115,552	193%

* Test conducted on ASTM A706 reinforcement bar

TABLE 1: TTGT POSITION TENSILE TEST RESULTS (CONTINUED)

BAR SIZE	TEST LAB ID # & REF #		PEAK STRENGTH MAX STRESS (psi)	PEAK STRENGTH % GR. 60 SPEC. YIELD
No. 14	14T366	14A	108,289	180%
		14B	107,156	179%
	14T574	14A	103,027	172%
		14B	102,458	171%
	14T1119	14A	105,544	176%
		14B	105,346	176%
	14T1285*	14A	107,579	179%
	14T1622	14A	111,232	185%
		14B	110,860	185%

* Test conducted on ASTM A706 reinforcement bar

BAR SIZE	TEST LAB ID # & REF #		PEAK STRENGTH MAX STRESS (psi)	PEAK STRENGTH % GR. 60 SPEC. YIELD
No. 18	18T376	18A	106,880	178%
		18B	106,112	177%
	18T449*	18A	91,022	152%
	18T724*	18A	91,398	152%
	18T753	18A	108,640	181%
		18B	109,268	182%
	18T1056	18A	112,784	188%
		18B	113,638	189%
	18T1068	18A	107,654	179%
		18B	105,615	176%

CHART 1: TTGT POSITION TENSILE TEST RESULTS