TTGT DOUGHNUT TERMINATION SYSTEM TEST DATA CONVERSION - 15M AND 20M (GRADE 400)

Lab Report & Reference No.		Head Type	ASTM Bar Size Designation	ASTM Bar Area (in^2)	Max Load (lb)	Max Stress (psi)	Developed Stress $\%f_y$ ASTM Gr 60 (metric Gr 420)	Equivalent CSA Designation	CSA Bar Area (mm^2)	Max Load (kN)	Equivalent Max Stress CSA Gr 400 (N/mm^2)	Equivalent Developed Stress $\%f_y$ CSA Gr 400
5T624	5A	TDS 5Ab	**No. 5**	0.31	35,238	113,670	**189%**	**15M**	200	156.7	784	**196%**
	5B		**No. 5**	0.31	35,317	113,926	**190%**	**15M**	200	157.1	785	**196%**
5T806*	5A	TDX 10Ab	**No. 5**	0.31	29,025	93,629	**156%**	**15M**	200	129.1	646	**161%**
5T1047	5A	TDS 5Ab	**No. 5**	0.31	32,900	106,129	**177%**	**15M**	200	146.3	732	**183%**
	5B		**No. 5**	0.31	33,300	107,419	**179%**	**15M**	200	148.1	741	**185%**
5T6659	5A	TDS 5Ab	**No. 5**	0.31	33,630	108,484	**181%**	**15M**	200	149.6	748	**187%**
	5B		**No. 5**	0.31	33,550	108,226	**180%**	**15M**	200	149.2	746	**187%**
5T13267	5A	TDS 5Ab	**No. 5**	0.31	33,893	109,333	**182%**	**15M**	200	150.8	754	**188%**
	5B		**No. 5**	0.31	34,580	111,548	**186%**	**15M**	200	153.8	769	**192%**
6T571A	6A	TDS 5Ab	**No. 6**	0.44	49,058	111,495	**186%**	**20M**	300	218.2	727	**182%**
	6B		**No. 6**	0.44	48,672	110,618	**184%**	**20M**	300	216.5	722	**180%**
6T611A	6A	TDS 5Ab	**No. 6**	0.44	46,922	106,640	**178%**	**20M**	300	208.7	696	**174%**
	6B		**No. 6**	0.44	47,217	107,312	**179%**	**20M**	300	210.0	700	**175%**
6T1023	6A	TDX 10Ab	**No. 6**	0.44	48,930	111,205	**185%**	**20M**	300	217.6	725	**181%**
	6B		**No. 6**	0.44	48,070	109,250	**182%**	**20M**	300	213.8	713	**178%**
6T1024	6A	TDS 5Ab	**No. 6**	0.44	47,900	108,864	**181%**	**20M**	300	213.1	710	**178%**
	6B		**No. 6**	0.44	49,990	113,614	**189%**	**20M**	300	222.4	741	**185%**
6T7846	6A	TDX 10Ab	**No. 6**	0.44	53,381	121,320	**202%**	**20M**	300	237.4	791	**198%**
	6B		**No. 6**	0.44	53,818	122,314	**204%**	**20M**	300	239.4	798	**199%**

NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% f_u) Grade 60 bar.
TTGT DoughNUT TDX meets CSA A23.3 Clause 7.1.4 requirement of gross bearing area to be 10 times the bar area, 10Ab.
Results shown are from routine testing of various heat lots of completed headed devices, per Barsplice Products, Inc. ISO 9001 Quality System.
Conducted on reinforcing bars per ASTM A615 (or *A706) Grade 60, with a specified tensile, f_y = 60,000 psi (420 N/mm^2).
Tests performed in accordance with ASTM A1034, Section 10.3, Monotonic Tension Tests, using load rates per ASTM A370
See Lab reports for stress versus displacement curves (stress versus cross-head position).
ASTM = American Society for Testing and Materials, CSA = Canadian Standards Association

R3: 08-APR-24

TTGT DOUGHNUT TERMINATION SYSTEM TEST DATA CONVERSION - 25M AND 30M (GRADE 400)

Lab Report & Reference No.		Head Type	ASTM Bar Size Designation	ASTM Bar Area (in^2)	Max Load (lb)	Max Stress (psi)	Developed Stress $\%f_y$ ASTM Gr 60 (metric Gr 420)	Equivalent CSA Designation	CSA Bar Area (mm^2)	Max Load (kN)	Equivalent Max Stress CSA Gr 400 (N/mm^2)	Equivalent Developed Stress $\%f_y$ CSA Gr 400
8T3187	8A	TDX 10Ab	**No. 8**	0.79	92,430	117,000	**195%**	**25M**	500	411.1	822	**206%**
	8B		**No. 8**	0.79	89,890	113,785	**190%**	**25M**	500	399.8	800	**200%**
8T3161	8A	TDS 5Ab	**No. 8**	0.79	84,850	107,405	**179%**	**25M**	500	377.4	755	**189%**
	8B		**No. 8**	0.79	84,030	106,367	**177%**	**25M**	500	373.8	748	**187%**
8T3604	8A	TDS 5Ab	**No. 8**	0.79	86,250	109,177	**182%**	**25M**	500	383.6	767	**192%**
	8B		**No. 8**	0.79	87,150	110,316	**184%**	**25M**	500	387.6	775	**194%**
8T3816	8A	TDS 5Ab	**No. 8**	0.79	90,220	114,203	**190%**	**25M**	500	401.3	803	**201%**
	8B		**No. 8**	0.79	90,010	113,937	**190%**	**25M**	500	400.4	801	**200%**
8T5125	8A	TDX 10Ab	**No. 8**	0.79	90,885	115,044	**192%**	**25M**	500	404.3	809	**202%**
	8B		**No. 8**	0.79	90,398	114,428	**191%**	**25M**	500	402.1	804	**201%**
9T1314*	9A	TDS 5Ab	**No. 9**	1.00	98,530	98,530	**164%**	**30M**	700	438.3	626	**157%**
9T1792	9A	TDX 10Ab	**No. 9**	1.00	117,030	117,030	**195%**	**30M**	700	520.5	744	**186%**
	9B		**No. 9**	1.00	116,560	116,560	**194%**	**30M**	700	518.5	741	**185%**
9T1844	9A	TDS 5Ab	**No. 9**	1.00	108,690	108,690	**181%**	**30M**	700	483.5	691	**173%**
	9B		**No. 9**	1.00	106,480	106,480	**177%**	**30M**	700	473.6	677	**169%**
9T2286	9A	TDX 10Ab	**No. 9**	1.00	106,900	106,900	**178%**	**30M**	700	475.5	679	**170%**
	9B		**No. 9**	1.00	112,090	112,090	**187%**	**30M**	700	498.6	712	**178%**
9T2314	9A	TDS 5Ab	**No. 9**	1.00	111,760	111,760	**186%**	**30M**	700	497.1	710	**178%**
	9B		**No. 9**	1.00	112,180	112,180	**187%**	**30M**	700	499.0	713	**178%**
9T3119	9A	TDS 5Ab	**No. 9**	1.00	114,163	114,163	**190%**	**30M**	700	507.8	725	**181%**
	9B		**No. 9**	1.00	113,953	113,953	**190%**	**30M**	700	506.9	724	**181%**

NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% f_u) Grade 60 bar.
TTGT DoughNUT TDX meets CSA A23.3 Clause 7.1.4 requirement of gross bearing area to be 10 times the bar area, 10Ab.
Conducted on reinforcing bars per ASTM A615 (or *A706) Grade 60, with a specified tensile, f_y = 60,000 psi (420 N/mm^2).
Tests performed in accordance with ASTM A1034, Section 10.3, Monotonic Tension Tests, using load rates per ASTM A370
See Lab reports for stress versus displacement curves (stress versus cross-head position).
ASTM = American Society for Testing and Materials, CSA = Canadian Standards Association

R3: 08-APR-24

TTGT DOUGHNUT TERMINATION SYSTEM TEST DATA CONVERSION - 35M AND 45M (GRADE 400)

Lab Report & Reference No.		Head Type	ASTM Bar Size Designation	ASTM Bar Area (in^2)	Max Load (lb)	Max Stress (psi)	Developed Stress $\%f_y$ ASTM Gr 60 (metric Gr 420)	Equivalent CSA Designation	CSA Bar Area (mm^2)	Max Load (kN)	Equivalent Max Stress CSA Gr 400 (N/mm^2)	Equivalent Developed Stress $\%f_y$ CSA Gr 400
11T3991	11A	TDS 5Ab	**No. 11**	1.56	171,690	110,058	**183%**	**35M**	1000	763.7	764	**191%**
	11B		**No. 11**	1.56	171,040	109,641	**183%**	**35M**	1000	760.8	761	**190%**
11T4083	11A	TDS 5Ab	**No. 11**	1.56	163,000	104,487	**174%**	**35M**	1000	725.0	725	**181%**
	11B		**No. 11**	1.56	161,480	103,513	**173%**	**35M**	1000	718.3	718	**180%**
11T4196	11A	TDX 10Ab	**No. 11**	1.56	169,659	108,756	**181%**	**35M**	1000	754.6	755	**189%**
	11B		**No. 11**	1.56	168,780	108,192	**180%**	**35M**	1000	750.7	751	**188%**
11T5671	11A	TDS 5Ab	**No. 11**	1.56	169,881	108,898	**181%**	**35M**	1000	755.6	756	**189%**
	11B		**No. 11**	1.56	171,973	110,239	**184%**	**35M**	1000	764.9	765	**191%**
11T5682	11A	TDX 10Ab	**No. 11**	1.56	170,886	109,542	**183%**	**35M**	1000	760.1	760	**190%**
	11B		**No. 11**	1.56	173,514	111,227	**185%**	**35M**	1000	771.8	772	**193%**
14T685	14A	TDS 5Ab	**No. 14**	2.25	242,480	107,769	**180%**	**45M**	1500	1078.6	719	**180%**
	14B		**No. 14**	2.25	236,810	105,249	**175%**	**45M**	1500	1053.3	702	**176%**
14T888	14A	TDS 5Ab	**No. 14**	2.25	254,511	113,116	**189%**	**45M**	1500	1132.1	755	**189%**
	14B		**No. 14**	2.25	256,741	114,107	**190%**	**45M**	1500	1142.0	761	**190%**
14T925*	14A	TDX 10Ab	**No. 14**	2.25	225,020	100,009	**167%**	**45M**	1500	1000.9	667	**167%**

NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% f_u) Grade 60 bar.
TTGT DoughNUT TDX meets CSA A23.3 Clause 7.1.4 requirement of gross bearing area to be 10 times the bar area, 10Ab.
Results shown are from routine testing of various heat lots of completed headed devices, per Barsplice Products, Inc. ISO 9001 Quality System.
Conducted on reinforcing bars per ASTM A615 (or *A706) Grade 60, with a specified tensile, f_y = 60,000 psi (420 N/mm^2).
Tests performed in accordance with ASTM A1034, Section 10.3, Monotonic Tension Tests, using load rates per ASTM A370
See Lab reports for stress versus displacement curves (stress versus cross-head position).
ASTM = American Society for Testing and Materials, CSA = Canadian Standards Association

R3: 08-APR-24

TTGT DOUGHNUT TERMINATION SYSTEM TEST DATA CONVERSION - 55M (GRADE 400)

Lab Report & Reference No.		Head Type	ASTM Bar Size Designation	ASTM Bar Area (in^2)	Max Load (lb)	Max Stress (psi)	Developed Stress $\%f_y$ ASTM Gr 60 (metric Gr 420)	Equivalent CSA Designation	CSA Bar Area (mm^2)	Max Load (kN)	Equivalent Max Stress CSA Gr 400 (N/mm^2)	Equivalent Developed Stress $\%f_y$ CSA Gr 400
18T190*	18A	TDX 10Ab	**No. 18**	4.00	393,172	98,293	**164%**	**55M**	2500	1748.8	700	**175%**
	18B		**No. 18**	4.00	394,760	98,690	**164%**	**55M**	2500	1755.9	702	**176%**
18T403	18A	TDS 5Ab	**No. 18**	4.00	418,520	104,630	**174%**	**55M**	2500	1861.6	745	**186%**
	18B		**No. 18**	4.00	421,432	105,358	**176%**	**55M**	2500	1874.5	750	**187%**
18T509	18A	TDS 5Ab	**No. 18**	4.00	454,728	113,682	**189%**	**55M**	2500	2022.6	809	**202%**
	18B		**No. 18**	4.00	448,160	112,040	**187%**	**55M**	2500	1993.4	797	**199%**
18T704	18A	TDX 10Ab	**No. 18**	4.00	391,120	97,780	**163%**	**55M**	2500	1739.7	696	**174%**
	18B		**No. 18**	4.00	392,928	98,232	**164%**	**55M**	2500	1747.7	699	**175%**
18T1083	18A	TDX	**No. 18**	4.00	428,908	107,227	**179%**	**55M**	2500	1907.8	763	**191%**

NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% f_u) Grade 60 bar.
TTGT DoughNUT TDX meets CSA A23.3 Clause 7.1.4 requirement of gross bearing area to be 10 times the bar area, 10Ab.
Results shown are from routine testing of various heat lots of completed headed devices, per Barsplice Products, Inc. ISO 9001 Quality System.
Conducted on reinforcing bars per ASTM A615 (or *A706) Grade 60, with a specified tensile, f_y = 60,000 psi (420 N/mm^2).
Tests performed in accordance with ASTM A1034, Section 10.3, Monotonic Tension Tests, using load rates per ASTM A370
See Lab reports for stress versus displacement curves (stress versus cross-head position).
ASTM = American Society for Testing and Materials, CSA = Canadian Standards Association

R3: 08-APR-24