

BUTTONHEAD BNH (5Ab) AND BNX (10Ab) SYSTEM TEST DATA CONVERSION - 15M & 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 % <i>f_y</i> 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 % <i>f_y</i> CSA Gr 400
5T3060	5A	BNH (5Ab)	No. 5	0.31	34,010	109,710	183%	15M	200	151.3	756	189%
	5B		No. 5	0.31	34,500	111,290	185%	15M	200	153.5	767	192%
5T5994	5A	BNH (5Ab)	No. 5	0.31	34,010	109,710	183%	15M	200	151.3	756	189%
	5B		No. 5	0.31	34,500	111,290	185%	15M	200	153.5	767	192%
5T6150	5A	BNH (5Ab)	No. 5	0.31	32,730	105,581	176%	15M	200	145.6	728	182%
	5B		No. 5	0.31	33,140	106,903	178%	15M	200	147.4	737	184%
5T6151 <i>*A706</i>	5A	BNX (10Ab)	No. 5	0.31	33,830	109,129	182%	15M	200	150.5	752	188%
	5B		No. 5	0.31	34,380	110,903	185%	15M	200	152.9	765	191%
6T2694	6A	BNH (5Ab)	No. 6	0.44	45,322	103,005	172%	20M	300	201.6	672	168%
	6B		No. 6	0.44	45,217	102,766	171%	20M	300	201.1	670	168%
6T4744	6A	BNH (5Ab)	No. 6	0.44	48,260	109,682	183%	20M	300	214.7	716	179%
	6B		No. 6	0.44	48,210	109,568	183%	20M	300	214.4	715	179%
6T8819	6A	BNH	No. 6	0.44	47,234	107,349	179%	20M	300	210.1	700	175%
6T8864	6A	BNH	No. 6	0.44	48,600	110,454	184%	20M	300	216.2	721	180%
6T8980	6A	BNH	No. 6	0.44	48,506	110,241	184%	20M	300	215.8	719	180%
6T8990	6A	BNH	No. 6	0.44	50,968	115,836	193%	20M	300	226.7	756	189%
6T4873 <i>*A706</i>	6A	BNX (10Ab)	No. 6	0.44	42,090	95,659	159%	20M	300	187.2	624	156%
	6B		No. 6	0.44	43,250	98,295	164%	20M	300	192.4	641	160%

NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% *f_u*) Grade 60 bar.
 ButtonHead BNX 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/mm²).
 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

BUTTONHEAD BNH (5Ab) AND BNX (10Ab) SYSTEM TEST DATA CONVERSION - 25M & 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 % <i>f_y</i> 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 % <i>f_y</i> CSA Gr 400
8T1709	8A	BNH (5Ab)	No. 8	0.79	82,740	104,734	175%	25M	500	368.0	736	184%
	8B		No. 8	0.79	81,450	103,101	172%	25M	500	362.3	725	181%
8T2107	8A	BNH (5Ab)	No. 8	0.79	84,350	106,772	178%	25M	500	375.2	750	188%
	8B		No. 8	0.79	84,770	107,304	179%	25M	500	377.1	754	189%
8T2762	8A	BNX (10Ab)	No. 8	0.79	85,560	108,304	181%	25M	500	380.6	761	190%
	8B		No. 8	0.79	84,550	107,025	178%	25M	500	376.1	752	188%
8T3518 <i>*A706</i>	8A	BNH (5Ab)	No. 8	0.79	77,530	98,139	164%	25M	500	344.9	690	172%
	8B		No. 8	0.79	78,920	99,899	166%	25M	500	351.0	702	176%
8T5533	8A	BNH	No. 8	0.79	87,268	110,466	184%	25M	500	388.2	776	194%
9T1298	9A	BNH (5Ab)	No. 9	1.00	101,780	101,780	170%	30M	700	452.7	647	162%
	9B		No. 9	1.00	101,500	101,500	169%	30M	700	451.5	645	161%
9T1710	9A	BNH (5Ab)	No. 9	1.00	108,460	108,460	181%	30M	700	482.4	689	172%
	9B		No. 9	1.00	115,490	115,490	192%	30M	700	513.7	734	183%
9T1812	9A	BNX (10Ab)	No. 9	1.00	106,780	106,780	178%	30M	700	475.0	679	170%
	9B		No. 9	1.00	108,720	108,720	181%	30M	700	483.6	691	173%
9T1932 <i>*A706</i>	9A	BNH (5Ab)	No. 9	1.00	95,430	95,430	159%	30M	700	424.5	606	152%
	9B		No. 9	1.00	96,650	96,650	161%	30M	700	429.9	614	154%
9T3570	9A	BNH	No. 9	1.00	112,868	112,868	188%	30M	700	502.0	717	179%

NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% *f_u*) Grade 60 bar.
 ButtonHead BNX 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/mm²).
 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).
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BUTTONHEAD BNH (5Ab) AND BNX (10Ab) SYSTEM TEST DATA CONVERSION - 35M & 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 % <i>f_y</i> 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 % <i>f_y</i> CSA Gr 400
11T2213	11A	BNH (5Ab)	No. 11	1.56	165,131	105,853	176%	35M	1,000	734.5	735	184%
	11B		No. 11	1.56	165,560	106,128	177%	35M	1,000	736.4	736	184%
11T2639	11A	BNH (5Ab)	No. 11	1.56	167,620	107,449	179%	35M	1,000	745.6	746	186%
	11B		No. 11	1.56	169,371	108,571	181%	35M	1,000	753.4	753	188%
11T3323	11A	BNX (10Ab)	No. 11	1.56	173,840	111,436	186%	35M	1,000	773.2	773	193%
	11B		No. 11	1.56	172,659	110,679	184%	35M	1,000	768.0	768	192%
11T3455	11A	BNH (5Ab)	No. 11	1.56	178,101	114,167	190%	35M	1,000	792.2	792	198%
	11B		No. 11	1.56	163,929	105,083	175%	35M	1,000	729.2	729	182%
11T3939 *A706	11A	BNH (5Ab)	No. 11	1.56	153,410	98,340	164%	35M	1,000	682.4	682	171%
	11B		No. 11	1.56	149,070	95,558	159%	35M	1,000	663.1	663	166%
11T5683	11A	BNH	No. 11	1.56	168,594	108,073	180%	35M	1,000	749.9	750	187%
14T658	14A	BNH	No. 14	2.25	226,670	100,742	168%	45M	1,500	1008.2	672	168%
14T757	14A	BNH (5Ab)	No. 14	2.25	250,839	111,484	186%	45M	1,500	1115.7	744	186%
	14B		No. 14	2.25	253,370	112,609	188%	45M	1,500	1127.0	751	188%
14T770	14A	BNH (5Ab)	No. 14	2.25	249,921	111,076	185%	45M	1,500	1111.6	741	185%
	14B		No. 14	2.25	245,810	109,249	182%	45M	1,500	1093.4	729	182%
14T1412 *A706	14A	BNH (5Ab)	No. 14	2.25	239,049	106,244	177%	45M	1,500	1063.3	709	177%
	14B		No. 14	2.25	235,629	104,724	175%	45M	1,500	1048.1	699	175%
14T1203	14A	BNH	No. 14	2.25	243,961	108,427	181%	45M	1,500	1085.1	723	181%

NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% *f_u*) Grade 60 bar.
 ButtonHead BNX 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/mm²).
 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).
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BUTTONHEAD BNH (5Ab) AND BNX (10Ab) 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 % <i>f_y</i> 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 % <i>f_y</i> CSA Gr 400
18T507 <i>*A706</i>	18A	BNH (5Ab)	No. 18	4.0	397,376	99,344	166%	55M	2,500	1767.5	707	177%
	18B		No. 18	4.0	388,960	97,240	162%	55M	2,500	1730.1	692	173%
18T648	18A	BNH (5Ab)	No. 18	4.0	419,912	104,978	175%	55M	2,500	1867.8	747	187%
	18B		No. 18	4.0	412,712	103,178	172%	55M	2,500	1835.7	734	184%
18T651	18A	BNH (5Ab)	No. 18	4.0	411,328	102,832	171%	55M	2,500	1829.6	732	183%
	18B		No. 18	4.0	412,472	103,118	172%	55M	2,500	1834.7	734	183%
18T816	18A	BNH (5Ab)	No. 18	4.0	422,392	105,598	176%	55M	2,500	1878.8	752	188%
	18B		No. 18	4.0	423,820	105,955	177%	55M	2,500	1885.2	754	189%
18T1029	18A	BNH (5Ab)	No. 18	4.0	444,580	111,145	185%	55M	2,500	1977.5	791	198%
	18B		No. 18	4.0	454,992	113,748	190%	55M	2,500	2023.8	810	202%

NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% *f_u*) Grade 60 bar.
 ButtonHead BNX 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/mm²).
 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).
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