

## BUTTONHEAD BNX (10Ab) SYSTEM TEST DATA CONVERSION - 15M, 20M, 25M, 30M & 35M (GRADE 500)

Lab Report & Reference No.		Bar Grade	ASTM Bar Size Designation	ASTM Bar Area (in <sup>2</sup> )	Max Load (lb)	Max Stress (psi)	Developed Stress % <i>f<sub>y</sub></i> ASTM Gr 75 (metric Gr 520)	Equivalent CSA Designation	CSA Bar Area (mm <sup>2</sup> )	Max Load (kN)	Equivalent Max Stress CSA Gr 500 (N/mm <sup>2</sup> )	Equivalent Developed Stress % <i>f<sub>y</sub></i> CSA Gr 500
5T7679	5A	75	<b>No. 5</b>	0.31	33,300	107,419	<b>143%</b>	<b>15M</b>	200	148.1	741	<b>148%</b>
	5B	75	<b>No. 5</b>	0.31	34,380	110,903	<b>148%</b>	<b>15M</b>	200	152.9	765	<b>153%</b>
5T8052	5A	*80	<b>No. 5</b>	0.31	33,390	107,710	<b>144%</b>	<b>15M</b>	200	148.5	743	<b>149%</b>
5T8238	5A	*80	<b>No. 5</b>	0.31	33,600	108,387	<b>145%</b>	<b>15M</b>	200	149.5	747	<b>149%</b>
6T5550	6A	*80	<b>No. 6</b>	0.44	50,050	113,750	<b>152%</b>	<b>20M</b>	300	222.6	742	<b>148%</b>
6T5666	6A	*80	<b>No. 6</b>	0.44	49,270	111,977	<b>149%</b>	<b>20M</b>	300	219.2	731	<b>146%</b>
8T3466	8A	*80	<b>No. 8</b>	0.79	95,820	121,291	<b>162%</b>	<b>25M</b>	500	426.2	852	<b>170%</b>
8T3532	8A	*80	<b>No. 8</b>	0.79	96,900	122,658	<b>164%</b>	<b>25M</b>	500	431.0	862	<b>172%</b>
9T2244	9A	*80	<b>No. 9</b>	1	117,200	117,200	<b>156%</b>	<b>30M</b>	700	521.3	745	<b>149%</b>
9T2284	9A	*80	<b>No. 9</b>	1	112,800	112,800	<b>150%</b>	<b>30M</b>	700	501.7	717	<b>143%</b>
9T2518	9A	*80	<b>No. 9</b>	1	120,930	120,930	<b>161%</b>	<b>30M</b>	700	537.9	768	<b>154%</b>
11T4018	11A	*80	<b>No. 11</b>	1.56	171,829	110,147	<b>147%</b>	<b>35M</b>	1000	764.3	764	<b>153%</b>
11T4071	11A	*80	<b>No. 11</b>	1.56	180,940	115,987	<b>155%</b>	<b>35M</b>	1000	804.8	805	<b>161%</b>

### NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% *f<sub>u</sub>*) Grade 75 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 Grade 75/80 (or \*A706 Grade 80). Minimum specified yield of Grade 75, *f<sub>y</sub>* = 75,000 psi (520 N/mm<sup>2</sup>)  
 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) SYSTEM TEST DATA CONVERSION - 15M, 20M & 25M (GRADE 500)

Lab Report & Reference No.		Bar Grade	ASTM Bar Size Designation	ASTM Bar Area (in <sup>2</sup> )	Max Load (lb)	Max Stress (psi)	Developed Stress % <i>f<sub>y</sub></i> ASTM Gr 75 (metric Gr 520)	Equivalent CSA Designation	CSA Bar Area (mm <sup>2</sup> )	Max Load (kN)	Equivalent Max Stress CSA Gr 500 (N/mm <sup>2</sup> )	Equivalent Developed Stress % <i>f<sub>y</sub></i> CSA Gr 500
5T8237	5A	*80	<b>No. 5</b>	0.31	33,470	107,968	<b>144%</b>	<b>15M</b>	200	148.9	744	<b>149%</b>
6T4057	6A	75	<b>No. 6</b>	0.44	54,120	123,000	<b>164%</b>	<b>20M</b>	300	240.7	802	<b>160%</b>
	6B		<b>No. 6</b>	0.44	52,280	118,818	<b>158%</b>	<b>20M</b>	300	232.5	775	<b>155%</b>
	6C		<b>No. 6</b>	0.44	51,600	117,273	<b>156%</b>	<b>20M</b>	300	229.5	765	<b>153%</b>
6T4340	6A	80	<b>No. 6</b>	0.44	48,400	110,000	<b>147%</b>	<b>20M</b>	300	215.3	718	<b>144%</b>
6T5665	6A	*80	<b>No. 6</b>	0.44	49,150	111,705	<b>149%</b>	<b>20M</b>	300	218.6	729	<b>146%</b>
8T2423	8A	75	<b>No. 8</b>	0.79	90,650	114,747	<b>153%</b>	<b>25M</b>	500	403.2	806	<b>161%</b>
	8B		<b>No. 8</b>	0.79	89,670	113,506	<b>151%</b>	<b>25M</b>	500	398.9	798	<b>160%</b>
	8C		<b>No. 8</b>	0.79	90,340	114,354	<b>152%</b>	<b>25M</b>	500	401.8	804	<b>161%</b>
	8D		<b>No. 8</b>	0.79	89,680	113,519	<b>151%</b>	<b>25M</b>	500	398.9	798	<b>160%</b>
8T2571	8A	80	<b>No. 8</b>	0.79	93,250	118,038	<b>157%</b>	<b>25M</b>	500	414.8	830	<b>166%</b>
	8B		<b>No. 8</b>	0.79	92,290	116,823	<b>156%</b>	<b>25M</b>	500	410.5	821	<b>164%</b>
	8C		<b>No. 8</b>	0.79	92,220	116,734	<b>156%</b>	<b>25M</b>	500	410.2	820	<b>164%</b>
8T3531	8A	*80	<b>No. 8</b>	0.79	97,120	122,937	<b>164%</b>	<b>25M</b>	500	432.0	864	<b>173%</b>

### NOTES

All headed devices meet ACI 318 Section 20, and ASTM A970 Class A & HA requirements (100% *f<sub>u</sub>*) Grade 75 bar.

Ask about the ButtonHead BNH system to meet 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 Grade 75/80 (or \*A706 Grade 80). Minimum specified yield of Grade 75, *f<sub>y</sub>* = 75,000 psi (520 N/mm<sup>2</sup>)

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) SYSTEM TEST DATA CONVERSION - 30M, 35M & 45M (GRADE 500)

Lab Report & Reference No.		Bar Grade	ASTM Bar Size Designation	ASTM Bar Area (in <sup>2</sup> )	Max Load (lb)	Max Stress (psi)	Developed Stress % <i>f<sub>y</sub></i> ASTM Gr 75 (metric Gr 520)	Equivalent CSA Designation	CSA Bar Area (mm <sup>2</sup> )	Max Load (kN)	Equivalent Max Stress CSA Gr 500 (N/mm <sup>2</sup> )	Equivalent Developed Stress % <i>f<sub>y</sub></i> CSA Gr 500
9T1616	9A	75	<b>No. 9</b>	1.00	111,210	111,210	<b>148%</b>	<b>30M</b>	700	494.7	707	<b>141%</b>
9T1763	9A	80	<b>No. 9</b>	1.00	114,900	114,900	<b>153%</b>	<b>30M</b>	700	511.1	730	<b>146%</b>
	9B		<b>No. 9</b>	1.00	115,770	115,770	<b>154%</b>	<b>30M</b>	700	514.9	736	<b>147%</b>
	9C		<b>No. 9</b>	1.00	114,990	114,990	<b>153%</b>	<b>30M</b>	700	511.5	731	<b>146%</b>
9T2283	9A	*80	<b>No. 9</b>	1.00	112,640	112,640	<b>150%</b>	<b>30M</b>	700	501.0	716	<b>143%</b>
11T3136	11A	75	<b>No. 11</b>	1.56	186,939	119,833	<b>160%</b>	<b>35M</b>	1000	831.5	832	<b>166%</b>
	11B		<b>No. 11</b>	1.56	186,740	119,705	<b>160%</b>	<b>35M</b>	1000	830.6	831	<b>166%</b>
	11C		<b>No. 11</b>	1.56	186,021	119,244	<b>159%</b>	<b>35M</b>	1000	827.4	827	<b>165%</b>
	11D		<b>No. 11</b>	1.56	188,209	120,647	<b>161%</b>	<b>35M</b>	1000	837.2	837	<b>167%</b>
11T3250	11A	80	<b>No. 11</b>	1.56	195,460	125,295	<b>167%</b>	<b>35M</b>	1000	869.4	869	<b>174%</b>
11T4069	11A	*80	<b>No. 11</b>	1.56	182,570	117,032	<b>156%</b>	<b>35M</b>	1000	812.1	812	<b>162%</b>
14T841	14A	75	<b>No. 14</b>	2.25	261,531	116,236	<b>155%</b>	<b>45M</b>	1500	1163.3	776	<b>155%</b>
	14B		<b>No. 14</b>	2.25	260,939	115,973	<b>155%</b>	<b>45M</b>	1500	1160.7	774	<b>155%</b>
	14C		<b>No. 14</b>	2.25	257,049	114,244	<b>152%</b>	<b>45M</b>	1500	1143.4	762	<b>152%</b>
	14D		<b>No. 14</b>	2.25	259,641	115,396	<b>154%</b>	<b>45M</b>	1500	1154.9	770	<b>154%</b>
14T1338	14A	*80	<b>No. 14</b>	2.25	246,400	109,511	<b>146%</b>	<b>45M</b>	1500	1096.0	731	<b>146%</b>
14T1361	14A	*80	<b>No. 14</b>	2.25	245,819	109,253	<b>146%</b>	<b>45M</b>	1500	1093.4	729	<b>146%</b>

### NOTES

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