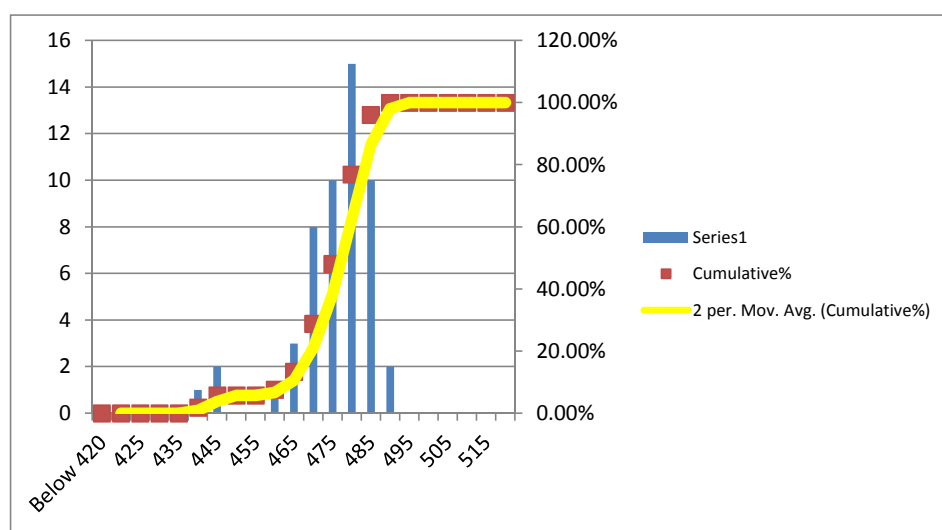


Campaign Length: 21.08.16 to 22.08.16
 Total Production: 1199.48 MT
 Billet Rolled: BIS-202
 Product: G 420 (25 mm)

YIELD STRENGTH

Mean	475.481
Median	480
Mode	480
Std. Dev.	10.444
Min	440
Max	490
Count	52

Bin	Frequency	%	Cumulative%
Below 420	0	0.00%	0.00%
420	0	0.00%	0.00%
425	0	0.00%	0.00%
430	0	0.00%	0.00%
435	0	0.00%	0.00%
440	1	1.92%	1.92%
445	2	3.85%	5.77%
450	0	0.00%	5.77%
455	0	0.00%	5.77%
460	1	1.92%	7.69%
465	3	5.77%	13.46%
470	8	15.38%	28.85%
475	10	19.23%	48.08%
480	15	28.85%	76.92%
485	10	19.23%	96.15%
490	2	3.85%	100.00%
495	0	0.00%	100.00%
500	0	0.00%	100.00%
505	0	0.00%	100.00%
510	0	0.00%	100.00%
515	0	0.00%	100.00%
520 & Above	0	0.00%	100.00%
Total	52		

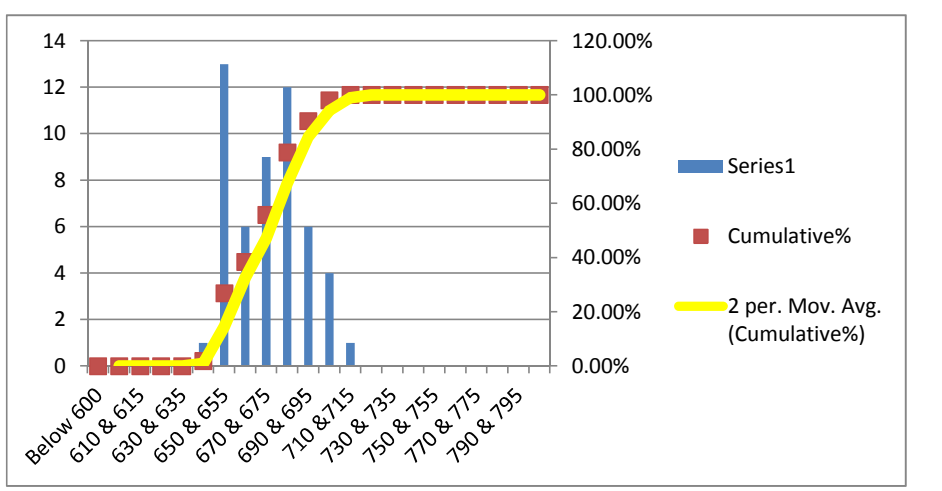


MINIMUM REQUIREMENTS
 As per ISO 6935-2: 420 Mpa
 As per ASTM A-615: 420 Mpa

ULTIMATE STRENGTH

Mean	673.365
Median	675
Mode	655
Std. Dev.	16.77
Min	640
Max	710
Count	52

Bin	Frequency	%	Cumulative%
Below 600	0	0.00%	0.00%
600 & 605	0	0.00%	0.00%
610 & 615	0	0.00%	0.00%
620 & 625	0	0.00%	0.00%
630 & 635	0	0.00%	0.00%
640 & 645	1	1.92%	1.92%
650 & 655	13	25.00%	26.92%
660 & 665	6	11.54%	38.46%
670 & 675	9	17.31%	55.77%
680 & 685	12	23.08%	78.85%
690 & 695	6	11.54%	90.38%
700 & 705	4	7.69%	98.08%
710 & 715	1	1.92%	100.00%
720 & 725	0	0.00%	100.00%
730 & 735	0	0.00%	100.00%
740 & 745	0	0.00%	100.00%
750 & 755	0	0.00%	100.00%
760 & 765	0	0.00%	100.00%
770 & 775	0	0.00%	100.00%
780 & 785	0	0.00%	100.00%
790 & 795	0	0.00%	100.00%
Above 795	0	0.00%	100.00%
Total	52		

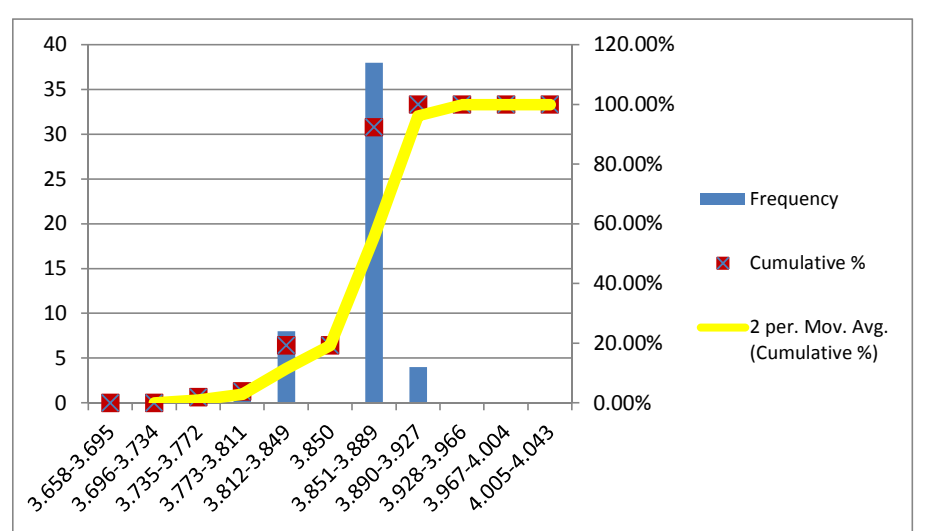


MINIMUM REQUIREMENTS
 As per ISO 6935-2: 525 Mpa
 As per ASTM A-615: 620 Mpa

UNIT WEIGHT

Mean	3.863
Median	3.8685
Mode	3.879
Std. Dev.	0.028
Min	3.748
Max	3.900
Count	52

Bin	Frequency	%	Cumulative %
Less Than 3.658	0	0.00%	0.00%
-5%	3.658-3.695	0	0.00%
-4%	3.696-3.734	0	0.00%
-3%	3.735-3.772	1	1.92%
-2%	3.773-3.811	1	3.85%
-1%	3.812-3.849	8	19.23%
0%	3.850	0	19.23%
1%	3.851-3.889	38	92.31%
2%	3.890-3.927	4	100.00%
3%	3.928-3.966	0	100.00%
4%	3.967-4.004	0	100.00%
5%	4.005-4.043	0	100.00%
Total	52		

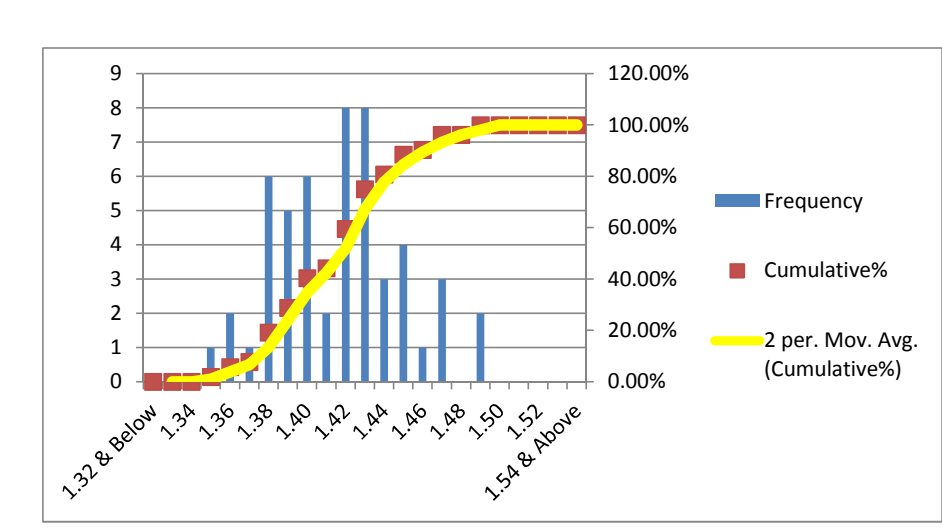


MINIMUM REQUIREMENTS
 As per ISO 6935-2: ± 4%
 As per ASTM A-615: -6%

TY RATIO

Mean	1.416
Median	1.42
Mode	1.42
Std. Dev.	0.033
Min	1.35
Max	1.49
Count	52

Bin	Frequency	%	Cumulative%
1.32 & Below	0	0.00%	0.00%
1.33	0	0.00%	0.00%
1.34	0	0.00%	0.00%
1.35	1	1.92%	1.92%
1.36	2	3.85%	5.77%
1.37	1	1.92%	7.69%
1.38	6	11.54%	19.23%
1.39	5	9.62%	28.85%
1.40	6	11.54%	40.38%
1.41	2	3.85%	44.23%
1.42	8	15.38%	59.62%
1.43	8	15.38%	75.00%
1.44	3	5.77%	80.77%
1.45	4	7.69%	88.46%
1.46	1	1.92%	90.38%
1.47	3	5.77%	96.15%
1.48	0	0.00%	96.15%
1.49	2	3.85%	100.00%
1.50	0	0.00%	100.00%
1.51	0	0.00%	100.00%
1.52	0	0.00%	100.00%
1.53	0	0.00%	100.00%
1.54 & Above	0	0.00%	100.00%
Total	52		

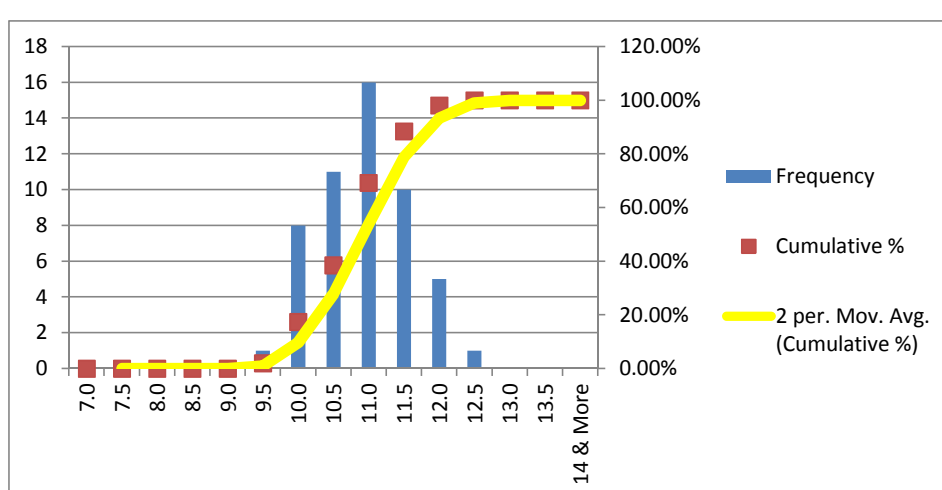


MINIMUM REQUIREMENTS
 As per ISO 6935-2: T/Y: 1.25
 As per ASTM A-615: Not Required

ELN. AT MAX. FORCE (Ag)(GL-200 mm)

Mean	10.933
Median	11.0
Mode	11.0
Std. Dev.	0.664
Min	9.5
Max	12.5
Count	52

Bin	Frequency	%	Cumulative %
7.0	0	0.00%	0.00%
7.5	0	0.00%	0.00%
8.0	0	0.00%	0.00%
8.5	0	0.00%	0.00%
9.0	0	0.00%	0.00%
9.5	1	1.92%	1.92%
10.0	8	15.38%	17.31%
10.5	11	21.15%	38.46%
11.0	16	30.77%	69.23%
11.5	10	19.23%	88.46%
12.0	5	9.62%	98.08%
12.5	1	1.92%	100.00%
13.0	0	0.00%	100.00%
13.5	0	0.00%	100.00%
14 & More	0	0.00%	100.00%
Total	52		

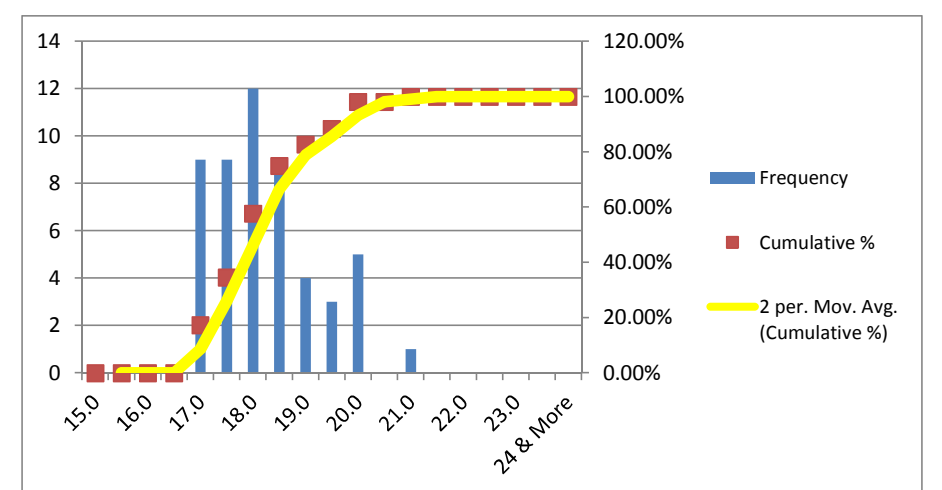


MINIMUM REQUIREMENTS
 As per ISO 6935-2: 8%
 As per ASTM A-615: Not Required

ELN. AFTER FRACTURE (A5)(GL-50)

Mean	18.240
Median	18.0
Mode	18.0
Std. Dev.	0.993
Min	17.0
Max	21.0
Count	52

Bin	Frequency	%	Cumulative %
15.0	0	0.00%	0.00%
15.5	0	0.00%	0.00%
16.0	0	0.00%	0.00%
16.5	0	0.00%	0.00%
17.0	9	17.31%	17.31%
17.5	9	17.31%	34.62%
18.0	12	23.08%	57.69%
18.5	9	17.31%	75.00%
19.0	4	7.69%	82.69%
19.5	3	5.77%	88.46%
20.0	5	9.62%	98.08%
20.5	0	0.00%	98.08%
21.0	1	1.92%	100.00%
21.5	0	0.00%	100.00%
22.0	0	0.00%	100.00%
22.5	0	0.00%	100.00%
23.0	0	0.00%	100.00%
23.5	0	0.00%	100.00%
24 & More	0	0.00%	100.00%
Total	52		

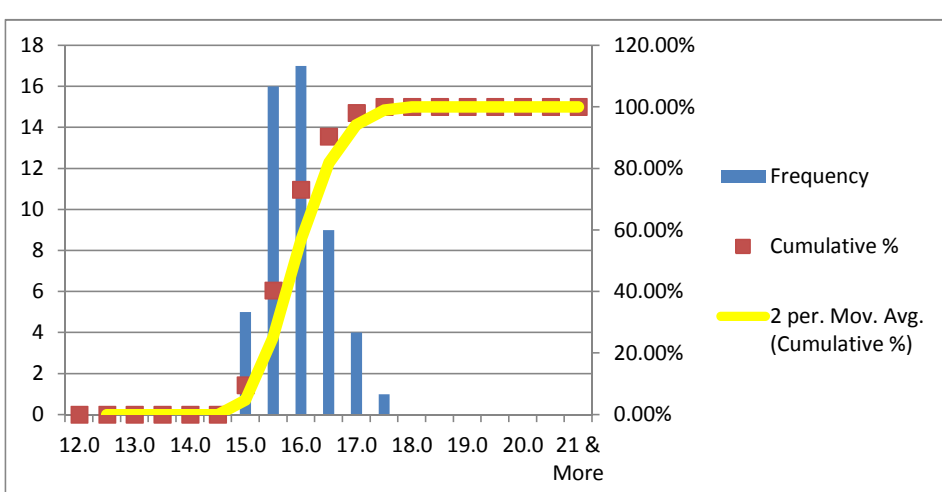


MINIMUM REQUIREMENTS
 As per ISO 6935-2: 16%

ELN. AFTER FRACTURE (A)(GL-203.2 mm)

Mean	15.942
Median	16.0
Mode	16.0
Std. Dev.	0.583
Min	15.0
Max	17.5
Count	52

Bin	Frequency	%	Cumulative %
12.0	0	0.00%	0.00%
12.5	0	0.00%	0.00%
13.0	0	0.00%	0.00%
13.5	0	0.00%	0.00%
14.0	0	0.00%	0.00%
14.5	0	0.00%	0.00%
15.0	5	9.62%	9.62%
15.5	16	30.77%	40.38%
16.0	17	32.69%	73.08%
16.5	9	17.31%	90.38%
17.0	4	7.69%	98.08%
17.5	1	1.92%	100.00%
18.0	0	0.00%	100.00%
18.5	0	0.00%	100.00%
19.0	0	0.00%	100.00%
19.5	0	0.00%	100.00%
20.0	0	0.00%	100.00%
20.5	0	0.00%	100.00%
21 & More	0	0.00%	100.00%
Total	52		



MINIMUM REQUIREMENTS
 As per ASTM A-615: 9%

BEND TEST:
 ALL THE SAMPLES IN THIS CAMPAIGN PASSED THE BEND TEST MAINTAINING MANDREL DIA 5D

MINIMUM REQUIREMENTS
 As per ISO 6935-2: 6D
 As per ASTM A-615: 5D

REBEND TEST:
 ALL THE SAMPLES IN THIS CAMPAIGN PASSED THE REBEND TEST MAINTAINING MANDREL DIA 7D

MINIMUM REQUIREMENTS
 As per ISO 6935-2: 8D
 As per ASTM A-615: Not Required

Nominal Diameter D	Unit Weight	Yield or Proof Strength R_{eH}	Ultimate Tensile Strength R_m	T/Y Ratio	% Total Elongation at Maximum Force A_{gt}	% Elongation after Fracture A	% Elongation after Fracture A	Height of Transverse Rib	Height of Longitudinal Rib
(mm)	(Kg/m)	(MPa)	(MPa)		GL:200mm	GL: 203.2 mm	GL: 5D	mm	mm
25	3.748	445	665	1.49	11.5	15.5	18.5	2.3	1.2
25	3.851	440	655	1.49	9.5	15.0	17.0		
25	3.862	470	680	1.45	10.0	15.5	17.5		
25	3.887	485	690	1.42	10.5	15.5	17.5		
25	3.879	465	670	1.44	10.0	15.0	17.0		
25	3.900	480	690	1.44	11.0	16.0	18.0		
25	3.896	480	685	1.43	11.0	16.0	18.0		
25	3.891	480	685	1.43	11.5	16.5	18.5		
25	3.889	485	675	1.39	11.0	16.0	17.5		
25	3.899	485	675	1.39	11.0	16.0	17.5		
25	3.888	470	655	1.39	10.0	15.0	17.0		
25	3.806	475	655	1.38	10.5	15.0	17.0		
25	3.817	480	655	1.36	11.0	15.5	17.0		
25	3.829	485	655	1.35	10.5	15.5	17.0		
25	3.826	470	650	1.38	10.0	15.5	17.5		
25	3.814	480	680	1.42	11.5	16.5	18.0		
25	3.831	465	640	1.38	10.0	15.5	17.0		
25	3.847	485	680	1.40	11.0	16.0	18.0		
25	3.856	475	655	1.38	10.0	15.0	17.0		
25	3.869	485	680	1.40	11.5	16.0	18.0		
25	3.874	475	655	1.38	10.0	15.5	17.5		
25	3.854	470	660	1.40	10.0	15.5	17.5		
25	3.867	470	660	1.40	11.5	16.0	18.0		
25	3.872	460	655	1.42	10.5	15.5	17.5		
25	3.859	475	680	1.43	11.0	16.0	18.0		
25	3.870	485	690	1.42	11.0	16.0	18.0		
25	3.884	465	670	1.44	10.5	15.5	17.0		
25	3.863	485	690	1.42	11.5	16.5	18.5		
25	3.879	480	685	1.43	11.0	16.0	18.0		
25	3.886	480	685	1.43	11.0	16.0	18.0		
25	3.868	480	675	1.41	10.5	15.5	18.5		
25	3.875	475	675	1.42	11.0	16.0	18.0		
25	3.857	475	680	1.43	12.0	16.5	18.5		
25	3.889	480	680	1.42	11.5	16.0	18.0		
25	3.882	480	665	1.39	11.0	15.5	17.5		
25	3.879	470	680	1.45	12.0	16.5	18.5		
25	3.878	480	700	1.46	10.5	16.5	19.0		
25	3.815	480	705	1.47	11.0	16.0	19.5		
25	3.837	485	705	1.45	10.5	15.5	19.0		
25	3.851	485	690	1.42	12.0	17.0	20.0		
25	3.866	445	655	1.47	11.5	16.0	18.5		
25	3.855	470	670	1.43	12.0	16.5	20.0		
25	3.861	475	655	1.38	11.5	15.5	19.5		
25	3.864	480	670	1.40	11.0	17.0	20.0		
25	3.867	475	650	1.37	12.5	17.5	21.0		
25	3.869	480	655	1.36	10.5	16.0	19.0		
25	3.875	480	705	1.47	11.0	16.5	19.0		
25	3.879	490	710	1.45	10.5	15.5	18.5		
25	3.889	475	665	1.40	12.0	17.0	20.0		
25	3.865	470	670	1.43	11.5	17.0	20.0		
25	3.871	475	660	1.39	11.0	16.5	19.5		
25	3.878	490	690	1.41	10.5	16.0	18.5		