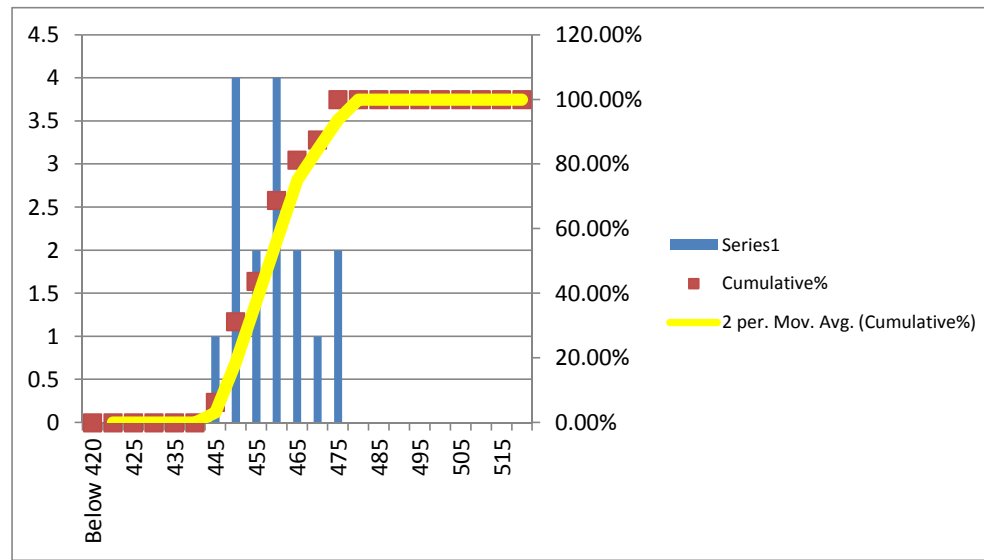


Campaign Length: 28.06.16 to 28.06.16  
 Total Production: 366.117 MT  
 Billet Rolled: BIS-202  
 Product: G 420 (25 mm)

YIELD STRENGTH	
Mean	459.063
Median	460
Mode	450
Std. Dev.	9.169
Min	445
Max	475
Count	16

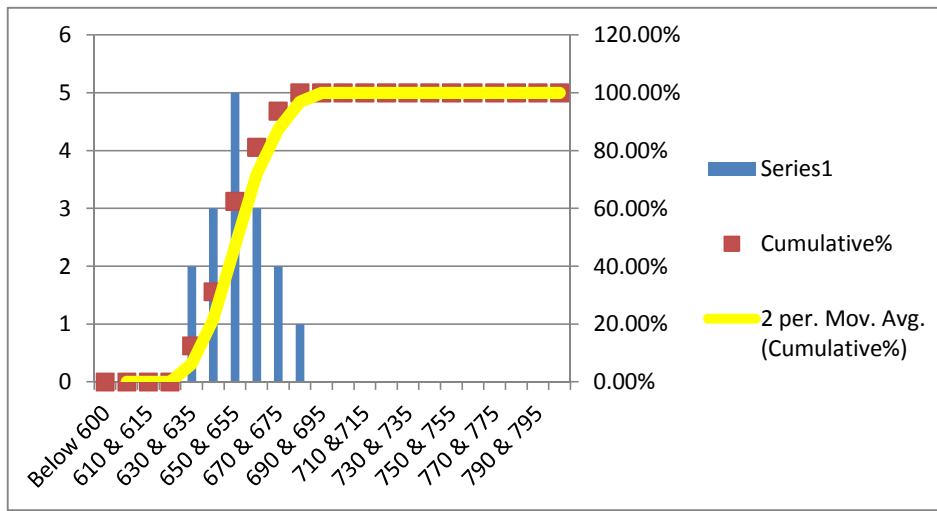
Bin	Frequency	%	Cumulative%
Below 420	0	0.00%	0.00%
420	0	0.00%	0.00%
425	0	0.00%	0.00%
430	0	0.00%	0.00%
435	0	0.00%	0.00%
440	0	0.00%	0.00%
445	1	6.25%	6.25%
450	4	25.00%	31.25%
455	2	12.50%	43.75%
460	4	25.00%	68.75%
465	2	12.50%	81.25%
470	1	6.25%	87.50%
475	2	12.50%	100.00%
480	0	0.00%	100.00%
485	0	0.00%	100.00%
490	0	0.00%	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	16		



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

ULTIMATE STRENGTH	
Mean	654.688
Median	655
Mode	655
Std. Dev.	14.55
Min	630
Max	685
Count	16

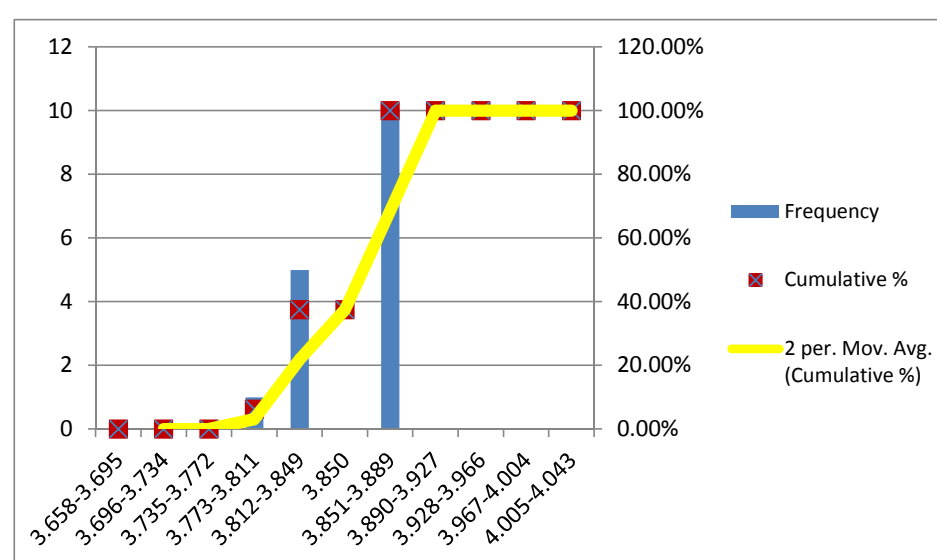
Bin	Frequency	%	Cumulative%
Below 600	0	0.00%	0.00%
600 & 605	0	0.00%	0.00%
610 & 615	0	0.00%	0.00%
620 & 625	0	0.00%	0.00%
630 & 635	2	12.50%	12.50%
640 & 645	3	18.75%	31.25%
650 & 655	5	31.25%	62.50%
660 & 665	3	18.75%	81.25%
670 & 675	2	12.50%	93.75%
680 & 685	1	6.25%	100.00%
690 & 695	0	0.00%	100.00%
700 & 705	0	0.00%	100.00%
710 & 715	0	0.00%	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	16		



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

UNIT WEIGHT	
Mean	3.854
Median	3.855
Mode	3.847
Std. Dev.	0.019
Min	3.806
Max	3.882
Count	16

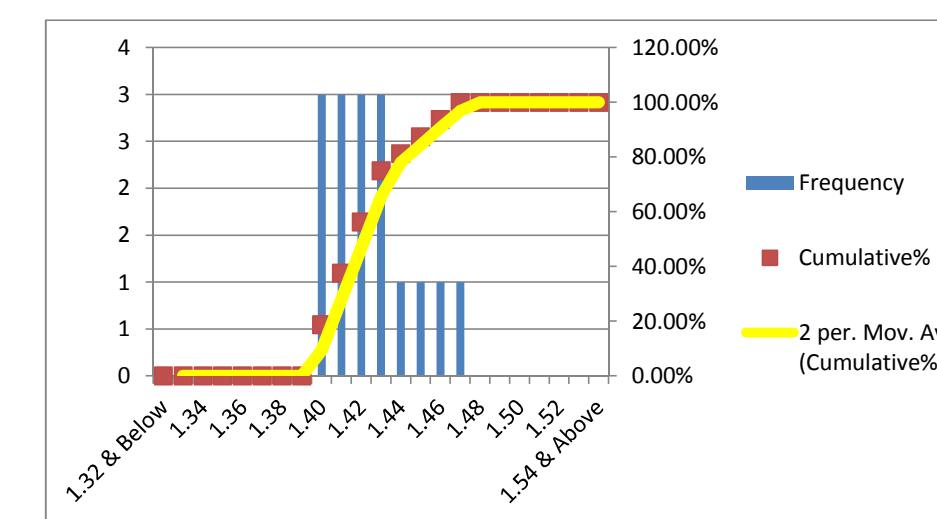
Bin	Frequency	%	Cumulative %
Less Than 3.658	0	0.00%	0.00%
-5%	3.658-3.695	0	0.00%
-4%	3.696-3.734	0	0.00%
-3%	3.735-3.772	0	0.00%
-2%	3.773-3.811	1	6.25%
-1%	3.812-3.849	5	31.25%
0%	3.850	0	37.50%
1%	3.851-3.889	10	62.50%
2%	3.890-3.927	0	100.00%
3%	3.928-3.966	0	100.00%
4%	3.967-4.004	0	100.00%
5%	4.005-4.043	0	100.00%
Total	16		



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

T/Y RATIO	
Mean	1.426
Median	1.42
Mode	1.42
Std. Dev.	0.021
Min	1.40
Max	1.47
Count	16

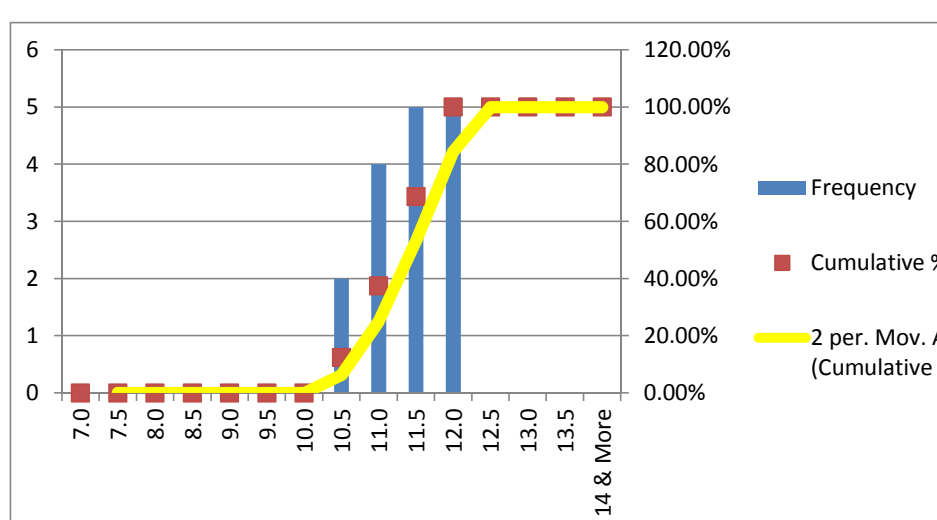
Bin	Frequency	%	Cumulative%
1.32 & Below	0	0.00%	0.00%
1.33	0	0.00%	0.00%
1.34	0	0.00%	0.00%
1.35	0	0.00%	0.00%
1.36	0	0.00%	0.00%
1.37	0	0.00%	0.00%
1.38	0	0.00%	0.00%
1.39	0	0.00%	0.00%
1.40	3	18.75%	18.75%
1.41	3	18.75%	37.50%
1.42	3	18.75%	56.25%
1.43	3	18.75%	75.00%
1.44	1	6.25%	81.25%
1.45	1	6.25%	87.50%
1.46	1	6.25%	93.75%
1.47	1	6.25%	100.00%
1.48	0	0.00%	100.00%
1.49	0	0.00%	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	16		



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

ELN. AT MAX. FORCE (Agt)(GL-200 mm)	
Mean	11.406
Median	11.5
Mode	11.5
Std. Dev.	0.523
Min	10.5
Max	12.0
Count	16

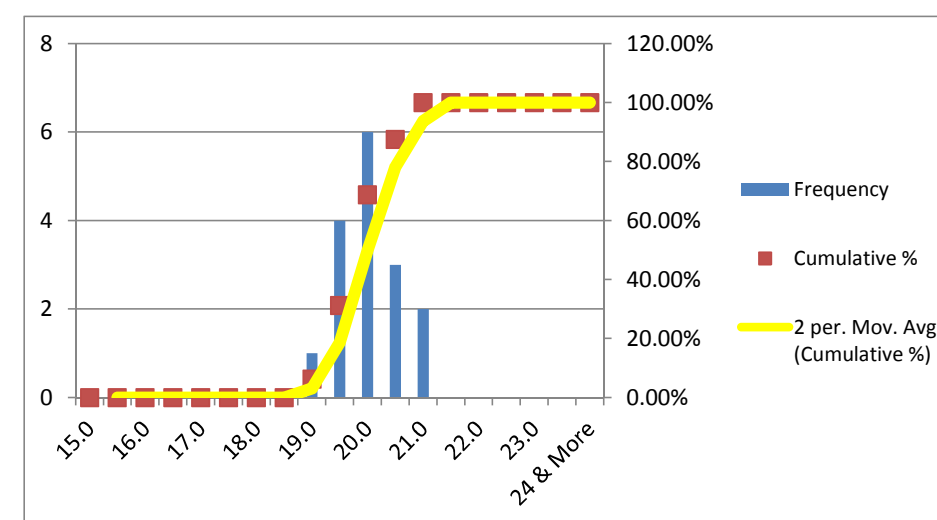
Bin	Frequency	%	Cumulative %
7.0	0	0.00%	0.00%
7.5	0	0.00%	0.00%
8.0	0	0.00%	0.00%
8.5	0	0.00%	0.00%
9.0	0	0.00%	0.00%
9.5	0	0.00%	0.00%
10.0	0	0.00%	0.00%
10.5	2	12.50%	12.50%
11.0	4	25.00%	37.50%
11.5	5	31.25%	68.75%
12.0	5	31.25%	100.00%
12.5	0	0.00%	100.00%
13.0	0	0.00%	100.00%
13.5	0	0.00%	100.00%
14 & More	0	0.00%	100.00%
Total	16		



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

ELN. AFTER FRACTURE (A)(GL-5D)	
Mean	20.031
Median	20.0
Mode	20.0
Std. Dev.	0.562
Min	19.0
Max	21.0
Count	16

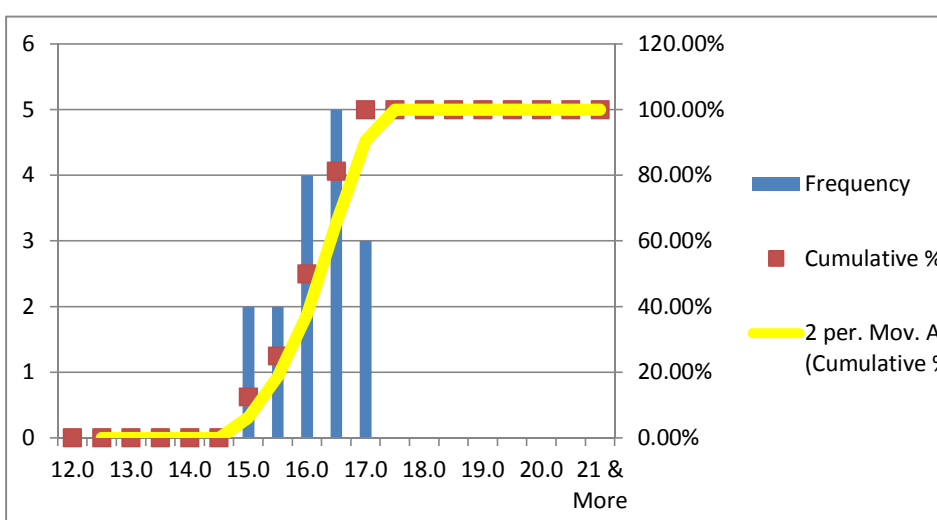
Bin	Frequency	%	Cumulative %
15.0	0	0.00%	0.00%
15.5	0	0.00%	0.00%
16.0	0	0.00%	0.00%
16.5	0	0.00%	0.00%
17.0	0	0.00%	0.00%
17.5	0	0.00%	0.00%
18.0	0	0.00%	0.00%
18.5	0	0.00%	0.00%
19.0	1	6.25%	6.25%
19.5	4	25.00%	31.25%
20.0	6	37.50%	68.75%
20.5	3	18.75%	87.50%
21.0	2	12.50%	100.00%
21.5	0	0.00%	100.00%
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	16		



**MINIMUM REQUIREMENTS**  
 As per ISO 6935-2: 16%

ELN. AFTER FRACTURE (A)(GL-203.2 mm)	
Mean	16.156
Median	16.3
Mode	16.5
Std. Dev.	0.651
Min	15.0
Max	17.0
Count	16

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	2	12.50%	12.50%
15.5	2	12.50%	25.00%
16.0	4	25.00%	50.00%
16.5	5	31.25%	81.25%
17.0	3	18.75%	100.00%
17.5	0	0.00%	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	16		



**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	3.806	465	650	1.40	10.5	16.0	20.0	2.10	1.0
25	3.853	470	665	1.41	11.0	16.0	20.0		
25	3.867	450	655	1.46	11.0	15.5	19.5		
25	3.847	460	655	1.42	11.5	16.5	20.5		
25	3.861	460	660	1.43	12.0	16.0	20.0		
25	3.870	475	685	1.44	12.0	17.0	21.0		
25	3.882	450	645	1.43	11.5	16.5	20.0		
25	3.830	455	645	1.42	11.0	15.5	19.5		
25	3.843	460	650	1.41	11.5	16.5	20.5		
25	3.857	455	670	1.47	12.0	17.0	20.0		
25	3.851	445	645	1.45	11.5	16.0	19.0		
25	3.879	475	670	1.41	11.5	16.5	20.5		
25	3.869	450	630	1.40	11.0	15.0	19.5		
25	3.847	450	630	1.40	10.5	15.0	19.5		
25	3.858	460	655	1.42	12.0	17.0	21.0		
25	3.840	465	665	1.43	12.0	16.5	20.0		