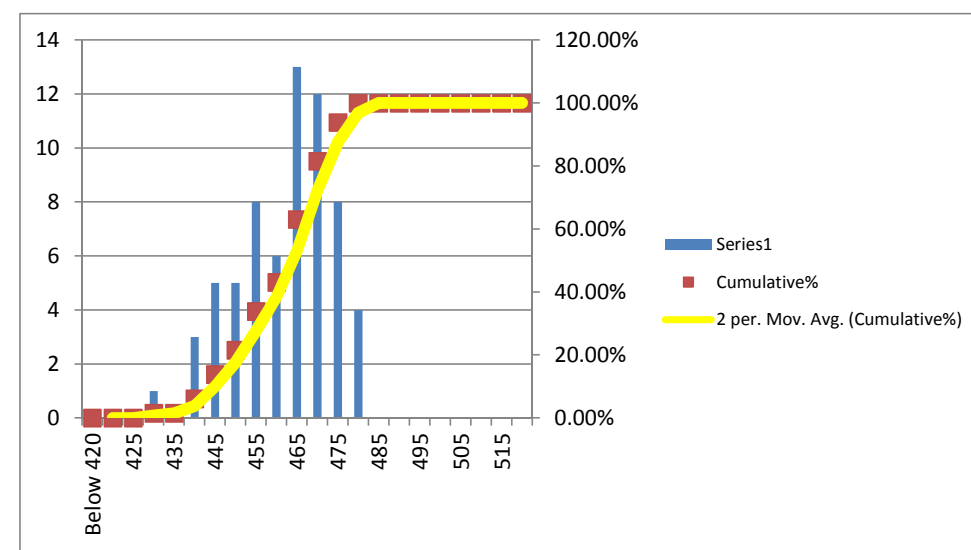


Campaign Length: 02.06.16 to 02.06.16
 Total Production: 300.749 MT
 Billet Rolled: BIS-202
 Product: G 420-DWR (5x8 mm)

YIELD STRENGTH	
Mean	462.000
Median	465
Mode	465
Std. Dev.	11.585
Min	430
Max	480
Count	65

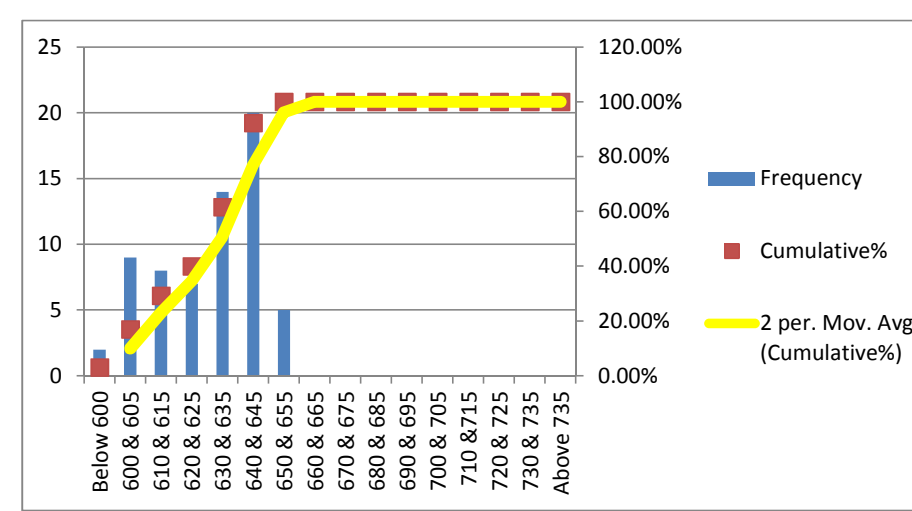
Bin	Frequency	%	Cumulative%
Below 420	0	0.00%	0.00%
420	0	0.00%	0.00%
425	0	0.00%	0.00%
430	1	1.54%	1.54%
435	0	0.00%	1.54%
440	3	4.62%	6.15%
445	5	7.69%	13.85%
450	5	7.69%	21.54%
455	8	12.31%	33.85%
460	6	9.23%	43.08%
465	13	20.00%	63.08%
470	12	18.46%	81.54%
475	8	12.31%	93.85%
480	4	6.15%	100.00%
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	65		



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

ULTIMATE STRENGTH	
Mean	628.077
Median	630
Mode	640
Std. Dev.	17.40
Min	580
Max	655
Count	65

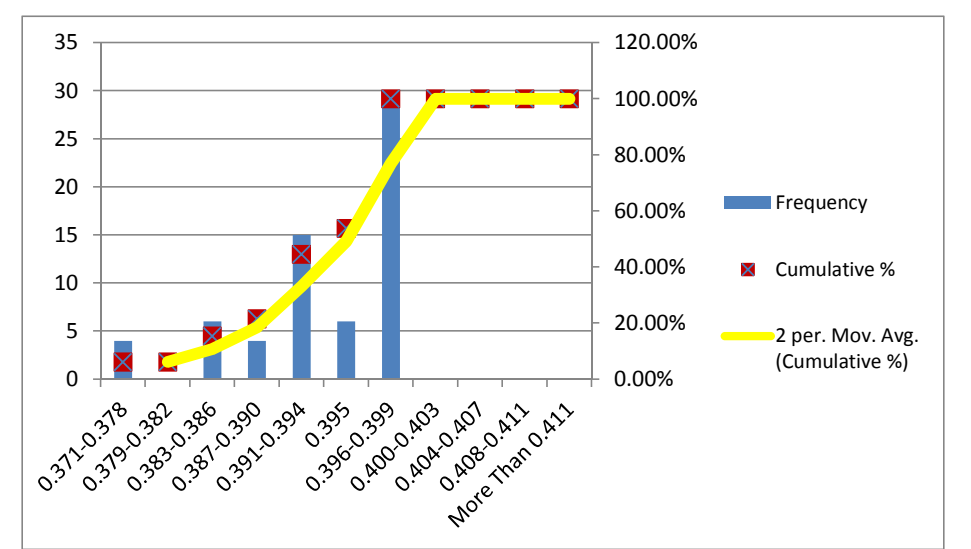
Bin	Frequency	%	Cumulative%
Below 600	2	3.08%	3.08%
600 & 605	9	13.85%	16.92%
610 & 615	8	12.31%	29.23%
620 & 625	7	10.77%	40.00%
630 & 635	14	21.54%	61.54%
640 & 645	20	30.77%	92.31%
650 & 655	5	7.69%	100.00%
660 & 665	0	0.00%	100.00%
670 & 675	0	0.00%	100.00%
680 & 685	0	0.00%	100.00%
690 & 695	0	0.00%	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%
Above 735	0	0.00%	100.00%
Total	65		



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

UNIT WEIGHT	
Mean	0.393
Median	0.395
Mode	0.399
Std. Dev.	0.006
Min	0.372
Max	0.399
Count	65

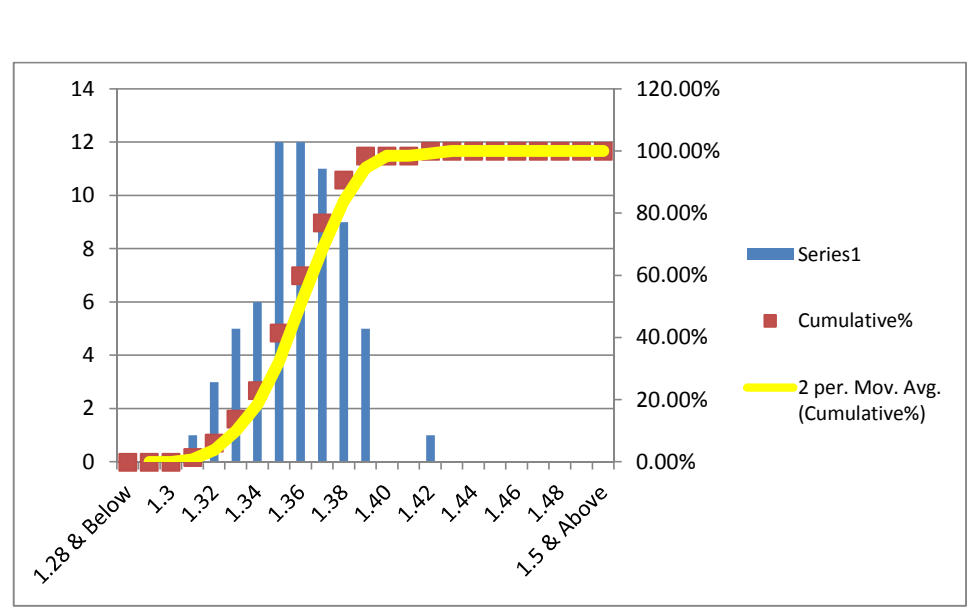
Bin	Frequency	%	Cumulative %
Less Than 0.371	0	0.00%	0.00%
0.371-0.378	4	6.15%	6.15%
0.379-0.382	0	0.00%	6.15%
0.383-0.386	6	9.23%	15.38%
0.387-0.390	4	6.15%	21.54%
0.391-0.394	15	23.08%	44.62%
0.395	6	9.23%	53.85%
0.396-0.399	30	46.15%	100.00%
0.400-0.403	0	0.00%	100.00%
0.404-0.407	0	0.00%	100.00%
0.408-0.411	0	0.00%	100.00%
0.412-0.415	0	0.00%	100.00%
More Than 0.411	0	0.00%	100.00%
Total	65		



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

T/Y RATIO	
Mean	1.360
Median	1.36
Mode	1.35
Std. Dev.	0.021
Min	1.31
Max	1.42
Count	65

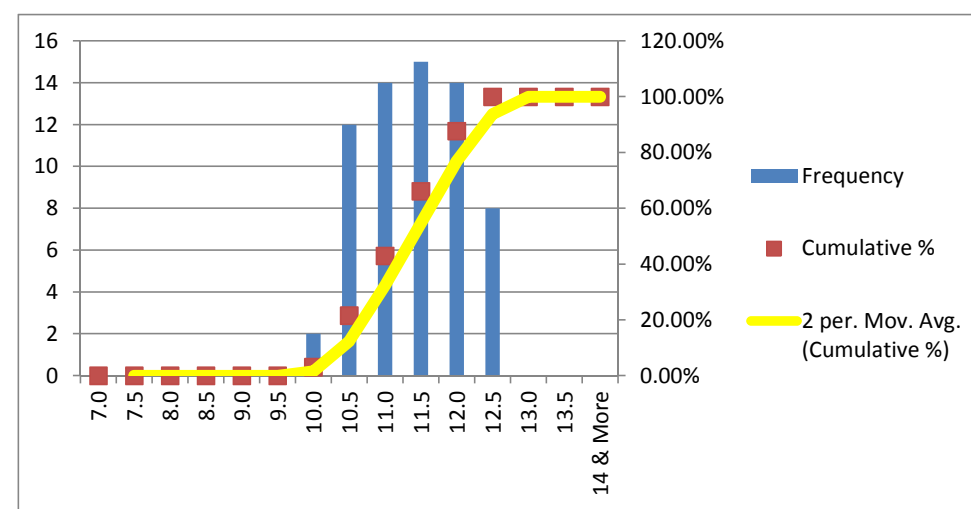
Bin	Frequency	%	Cumulative%
1.28 & Below	0	0.00%	0.00%
1.29	0	0.00%	0.00%
1.3	0	0.00%	0.00%
1.31	1	1.54%	1.54%
1.32	3	4.62%	6.15%
1.33	5	7.69%	13.85%
1.34	6	9.23%	23.08%
1.35	12	18.46%	41.54%
1.36	12	18.46%	60.00%
1.37	11	16.92%	76.92%
1.38	9	13.85%	90.77%
1.39	5	7.69%	98.46%
1.40	0	0.00%	98.46%
1.41	0	0.00%	98.46%
1.42	1	1.54%	100.00%
1.43	0	0.00%	100.00%
1.44	0	0.00%	100.00%
1.45	0	0.00%	100.00%
1.46	0	0.00%	100.00%
1.47	0	0.00%	100.00%
1.48	0	0.00%	100.00%
1.49	0	0.00%	100.00%
1.5 & Above	0	0.00%	100.00%
Total	65		



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	11.392
Median	11.5
Mode	11.5
Std. Dev.	0.693
Min	10.0
Max	12.5
Count	65

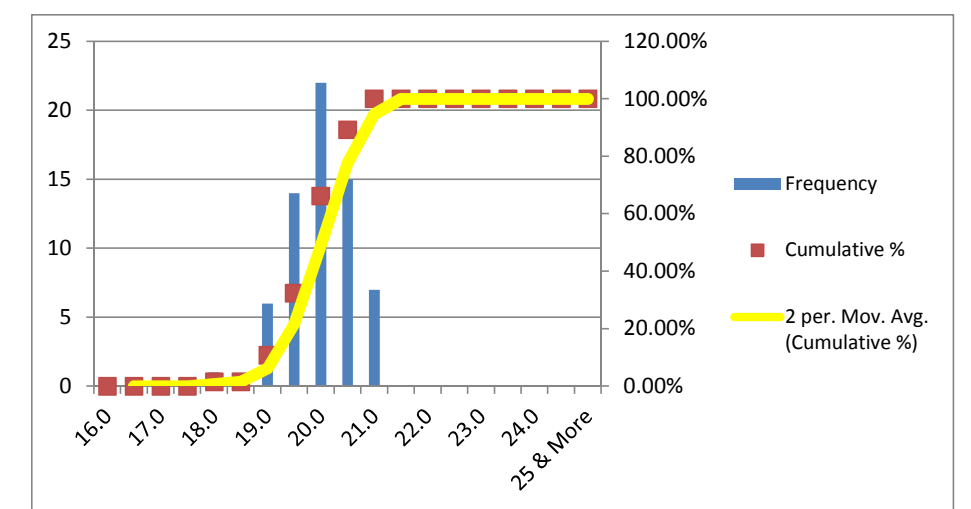
Bin	Frequency	%	Cumulative %
7.0	0	0.00%	0.00%
7.5	0	0.00%	0.00%
8.0	0	0.00%	0.00%
8.5	0	0.00%	0.00%
9.0	0	0.00%	0.00%
9.5	0	0.00%	0.00%
10.0	2	3.08%	3.08%
10.5	12	18.46%	21.54%
11.0	14	21.54%	43.08%
11.5	15	23.08%	66.15%
12.0	14	21.54%	87.69%
12.5	8	12.31%	100.00%
13.0	0	0.00%	100.00%
13.5	0	0.00%	100.00%
14 & More	0	0.00%	100.00%
Total	65		



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

ELN. AFTER FRACTURE (A5)(GL-5D)	
Mean	19.992
Median	20.0
Mode	20.0
Std. Dev.	0.616
Min	18.0
Max	21.0
Count	65

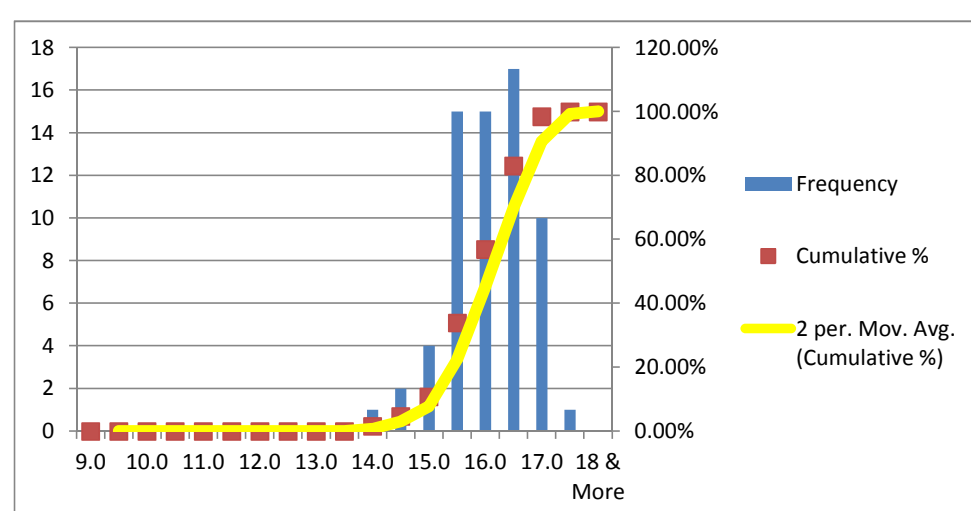
Bin	Frequency	%	Cumulative %
16.0	0	0.00%	0.00%
16.5	0	0.00%	0.00%
17.0	0	0.00%	0.00%
17.5	0	0.00%	0.00%
18.0	1	1.54%	1.54%
18.5	0	0.00%	1.54%
19.0	6	9.23%	10.77%
19.5	14	21.54%	32.31%
20.0	22	33.85%	66.15%
20.5	15	23.08%	89.23%
21.0	7	10.77%	100.00%
21.5	0	0.00%	100.00%
22.0	0	0.00%	100.00%
22.5	0	0.00%	100.00%
23.0	0	0.00%	100.00%
23.5	0	0.00%	100.00%
24.0	0	0.00%	100.00%
24.5	0	0.00%	100.00%
25 & More	0	0.00%	100.00%
Total	65		



MINIMUM REQUIREMENTS
 As per ISO 6935-2: 16%

ELN. AFTER FRACTURE (A)(GL-203.2 mm)	
Mean	16.054
Median	16.0
Mode	16.5
Std. Dev.	0.713
Min	14.0
Max	17.5
Count	65

Bin	Frequency	%	Cumulative %
9.0	0	0.00%	0.00%
9.5	0	0.00%	0.00%
10.0	0	0.00%	0.00%
10.5	0	0.00%	0.00%
11.0	0	0.00%	0.00%
11.5	0	0.00%	0.00%
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	1	1.54%	1.54%
14.5	2	3.08%	4.62%
15.0	4	6.15%	10.77%
15.5	15	23.08%	33.85%
16.0	15	23.08%	56.92%
16.5	17	26.15%	83.08%
17.0	10	15.38%	98.46%
17.5	1	1.54%	100.00%
18 & More	0	0.00%	100.00%
Total	65		



MINIMUM REQUIREMENTS
 As per ASTM A-615: 9%

BEND TEST:
 ALL THE SAMPLES IN THIS CAMPAIGN PASSED THE BEND TEST MAINTAINING MANDREL DIA 3D

MINIMUM REQUIREMENTS
 As per ISO 6935-2: 3D
 As per ASTM A-615: 3.5D

REBEND TEST:
 ALL THE SAMPLES IN THIS CAMPAIGN PASSED THE REBEND TEST MAINTAINING MANDREL DIA 4D

MINIMUM REQUIREMENTS
 As per ISO 6935-2: 5D
 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
8	0.372	465	630	1.35	10.5	14.5	21.0	0.85	0.65
8	0.378	455	610	1.34	10.0	15.0	20.5		
8	0.383	480	655	1.36	11.5	14.0	20.0		
8	0.378	450	605	1.34	12.0	15.5	19.5		
8	0.375	470	625	1.33	11.5	16.0	20.0		
8	0.385	470	635	1.35	12.0	15.5	20.5		
8	0.385	475	650	1.37	12.5	17.0	21.0		
8	0.386	465	645	1.39	11.5	16.5	20.5		
8	0.385	460	630	1.37	11.0	15.5	20.0		
8	0.386	470	620	1.32	10.5	16.0	19.0		
8	0.391	455	615	1.35	12.0	16.0	20.0		
8	0.397	465	630	1.35	10.5	16.5	20.5		
8	0.398	480	655	1.36	11.0	15.0	19.5		
8	0.399	475	640	1.35	11.5	16.0	20.0		
8	0.393	455	625	1.37	12.0	15.5	19.0		
8	0.393	445	615	1.38	11.5	16.5	20.0		
8	0.398	465	640	1.38	12.0	15.5	20.5		
8	0.399	460	635	1.38	12.0	16.5	21.0		
8	0.399	460	640	1.39	12.5	17.0	20.5		
8	0.393	445	615	1.38	10.5	15.0	19.0		
8	0.390	455	625	1.37	10.5	15.5	20.5		
8	0.399	455	630	1.38	11.0	16.0	20.0		
8	0.399	470	645	1.37	11.5	17.0	21.0		
8	0.398	445	615	1.38	12.0	16.5	20.0		
8	0.393	465	630	1.35	12.5	15.5	19.5		
8	0.394	470	635	1.35	11.0	15.5	20.0		
8	0.397	470	640	1.36	11.0	16.0	20.5		
8	0.395	475	645	1.36	10.5	15.0	20.0		
8	0.396	475	640	1.35	11.0	14.5	19.5		
8	0.398	470	645	1.37	11.5	15.5	20.0		
8	0.399	460	640	1.39	12.0	16.5	21.0		
8	0.395	465	635	1.37	12.5	16.0	20.5		
8	0.394	470	645	1.37	10.5	16.5	20.0		
8	0.395	450	615	1.37	12.5	15.5	20.0		
8	0.397	465	640	1.38	11.0	17.0	21.0		
8	0.399	465	645	1.39	11.5	16.5	20.5		
8	0.398	465	635	1.37	12.0	16.0	20.0		
8	0.396	475	635	1.34	12.5	15.5	19.5		
8	0.398	470	630	1.34	10.5	16.0	20.5		
8	0.395	465	640	1.38	10.0	16.5	20.5		
8	0.396	455	620	1.36	10.5	15.5	20.0		
8	0.398	460	625	1.36	11.0	16.0	19.5		
8	0.399	475	640	1.35	10.5	16.5	20.5		
8	0.399	475	645	1.36	11.5	17.0	20.0		
8	0.394	465	640	1.38	11.0	15.5	21.0		
8	0.392	480	635	1.32	12.0	17.0	20.0		
8	0.399	455	605	1.33	11.0	16.0	19.5		
8	0.396	440	600	1.36	10.5	15.5	19.0		
8	0.398	450	605	1.34	11.5	16.5	19.5		
8	0.389	475	640	1.35	11.5	16.5	20.0		
8	0.396	450	600	1.33	11.0	16.0	19.5		
8	0.394	465	610	1.31	11.0	16.0	19.5		
8	0.392	440	590	1.34	10.5	15.5	18.0		
8	0.394	440	600	1.36	11.0	16.0	19.0		
8	0.391	465	620	1.33	11.5	16.5	19.5		
8	0.397	455	605	1.33	11.0	16.0	19.0		
8	0.396	460	605	1.32	11.5	16.5	19.5		
8	0.395	450	610	1.36	12.0	17.0	20.0		
8	0.392	430	580	1.35	11.5	16.5	19.5		
8	0.390	445	600	1.35	11.5	16.5	19.5		
8	0.393	445	630	1.42	12.0	16.5	20.0		
8	0.398	470	640	1.36	12.5	17.0	20.5		
8	0.395	470	645	1.37	12.0	17.0	20.0		
8	0.396	480	655	1.36	12.5	17.5	20.5		
8	0.390	470	655	1.39	12.0	17.0	20.0		

0