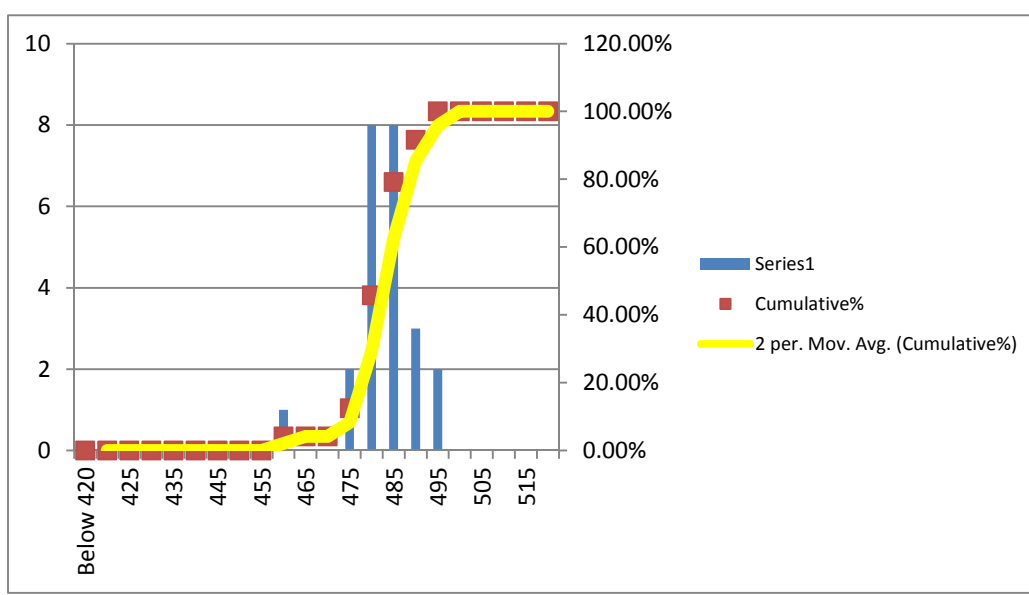


Campaign Length: 22.08.16 to 23.08.16
Total Production: 540.947 MT
Billet Rolled: B1S-202
Product: G 420-DWR (32 mm)

YIELD STRENGTH

Mean	482.917
Median	485
Mode	480
Std. Dev.	7.211
Min	460
Max	495
Count	24

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	0	0.00%	0.00%
450	0	0.00%	0.00%
455	0	0.00%	0.00%
460	1	4.17%	4.17%
465	0	0.00%	4.17%
470	0	0.00%	4.17%
475	2	8.33%	12.50%
480	8	33.33%	45.83%
485	8	33.33%	79.17%
490	3	12.50%	91.67%
495	2	8.33%	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	24		

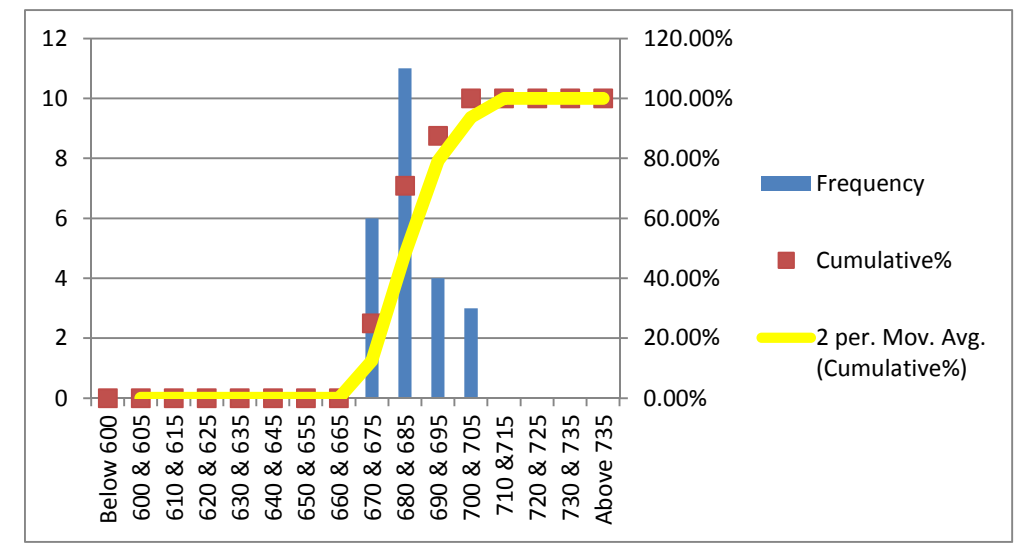


MINIMUM REQUIREMENTS
 As per ISO 6935-2: 420 Mpa
 As per ASTM A-615: 420 Mpa

ULTIMATE STRENGTH

Mean	684.792
Median	685
Mode	685
Std. Dev.	8.66
Min	670
Max	700
Count	24

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	0	0.00%	0.00%
650 & 655	0	0.00%	0.00%
660 & 665	0	0.00%	0.00%
670 & 675	6	25.00%	25.00%
680 & 685	11	45.83%	70.83%
690 & 695	4	16.67%	87.50%
700 & 705	3	12.50%	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	24		

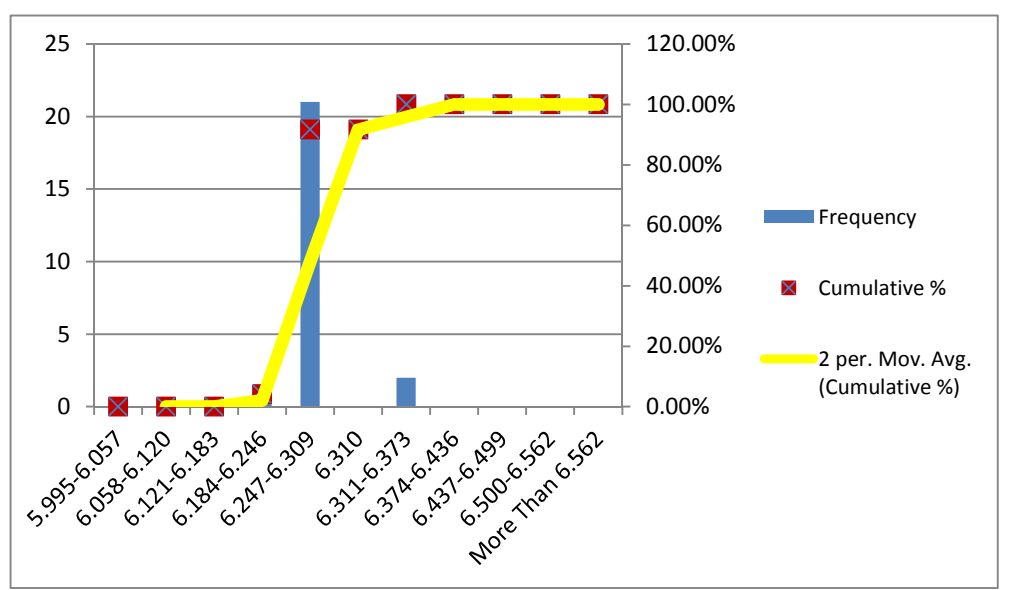


MINIMUM REQUIREMENTS
 As per ISO 6935-2: 525 Mpa
 As per ASTM A-615: 620 Mpa

UNIT WEIGHT

Mean	6.279
Median	6.28
Mode	6.289
Std. Dev.	0.025
Min	6.202
Max	6.330
Count	24

Bin	Frequency	%	Cumulative %
Less Than 5.995	0	0.00%	0.00%
-5% 5.995-6.057	0	0.00%	0.00%
-4% 6.058-6.120	0	0.00%	0.00%
-3% 6.121-6.183	0	0.00%	0.00%
-2% 6.184-6.246	1	4.17%	4.17%
-1% 6.247-6.309	21	87.50%	91.67%
0% 6.310	0	0.00%	91.67%
1% 6.311-6.373	2	8.33%	100.00%
2% 6.374-6.436	0	0.00%	100.00%
3% 6.437-6.499	0	0.00%	100.00%
4% 6.500-6.562	0	0.00%	100.00%
5% More Than 6.562	0	0.00%	100.00%
Total	24		

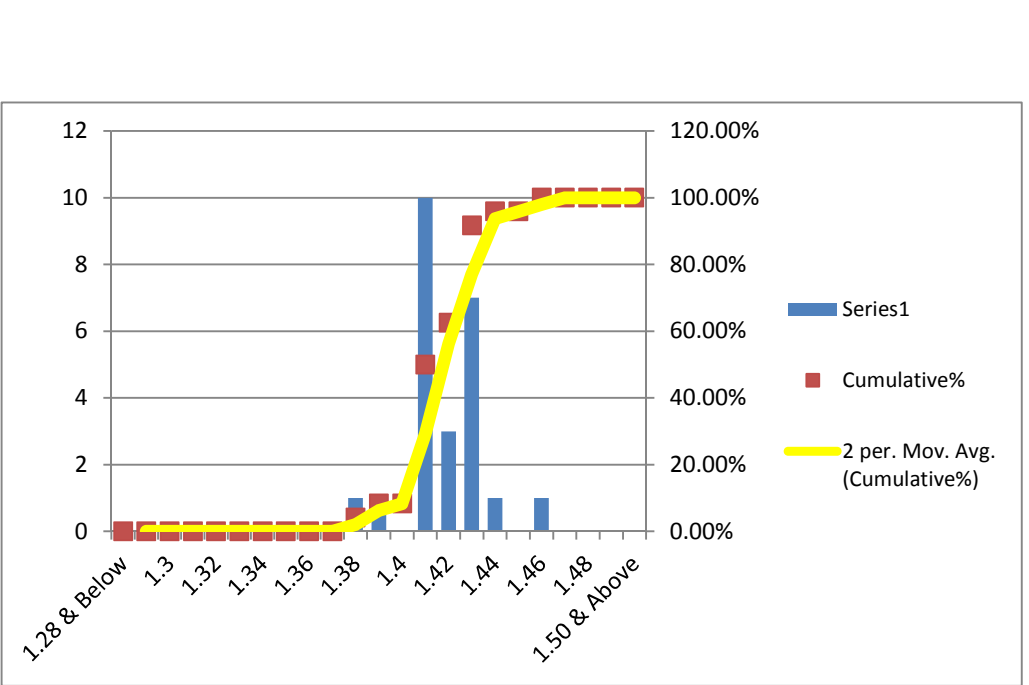


MINIMUM REQUIREMENTS
 As per ISO 6935-2: ± 4%
 As per ASTM A-615: -6%

T/Y RATIO

Mean	1.418
Median	1.42
Mode	1.41
Std. Dev.	0.016
Min	1.38
Max	1.46
Count	24

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	0	0.00%	0.00%
1.32	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	1	4.17%	4.17%
1.39	1	4.17%	8.33%
1.4	0	0.00%	8.33%
1.41	10	41.67%	50.00%
1.42	3	12.50%	62.50%
1.43	7	29.17%	91.67%
1.44	1	4.17%	95.83%
1.45	0	0.00%	95.83%
1.46	1	4.17%	100.00%
1.47	0	0.00%	100.00%
1.48	0	0.00%	100.00%
1.49	0	0.00%	100.00%
1.50 & Above	0	0.00%	100.00%
Total	24		

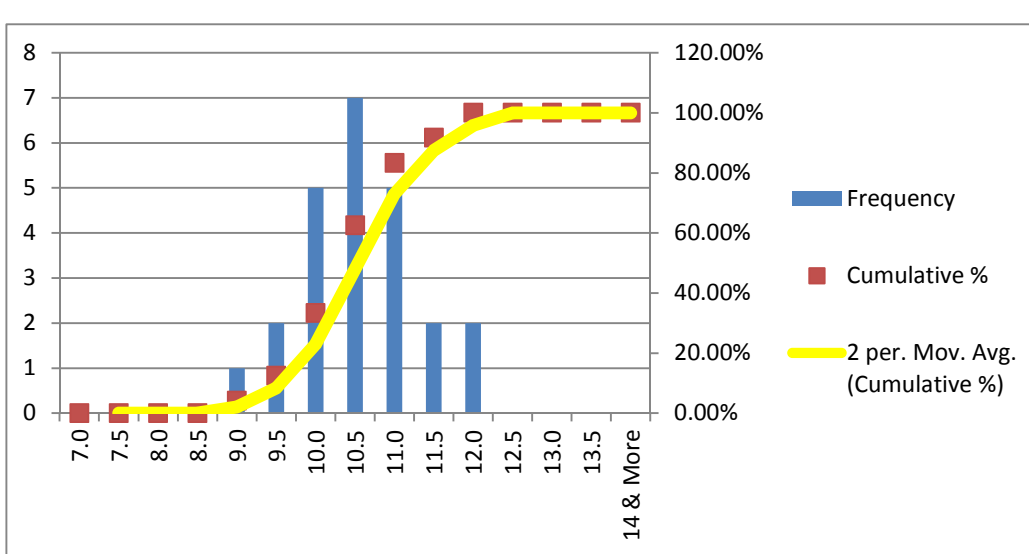


MINIMUM REQUIREMENTS
 As per ISO 6935-2: T/Y: 1.25
 As per ASTM A-615: Not Required

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

Mean	10.563
Median	10.5
Mode	10.5
Std. Dev.	0.756
Min	9.0
Max	12.0
Count	24

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	1	4.17%	4.17%
9.5	2	8.33%	12.50%
10.0	5	20.83%	33.33%
10.5	7	29.17%	62.50%
11.0	5	20.83%	83.33%
11.5	2	8.33%	91.67%
12.0	2	8.33%	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	24		

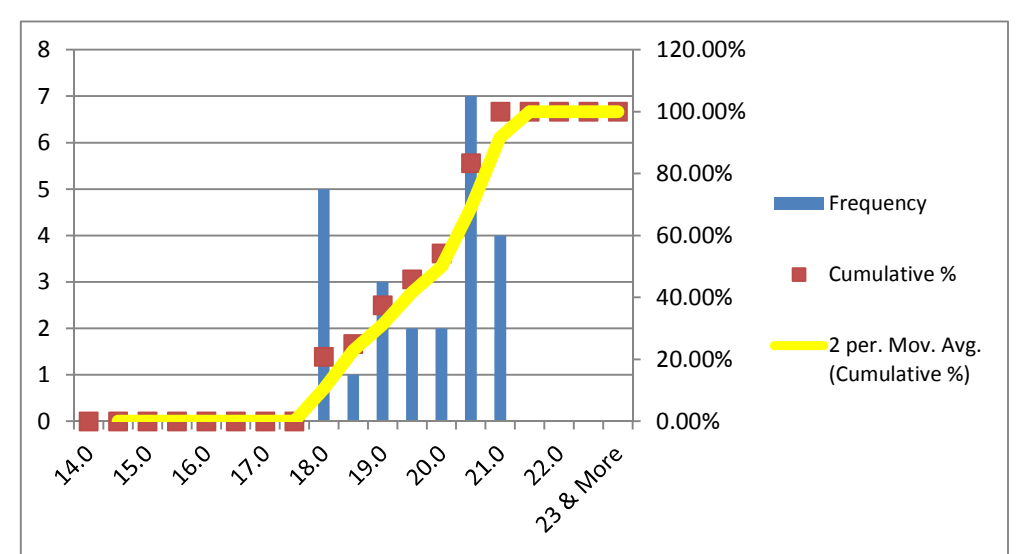


MINIMUM REQUIREMENTS
 As per ISO 6935-2: 8%
 As per ASTM A-615: Not Required

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

Mean	19.667
Median	20.0
Mode	20.5
Std. Dev.	1.120
Min	18.0
Max	21.0
Count	24

Bin	Frequency	%	Cumulative %
14.0	0	0.00%	0.00%
14.5	0	0.00%	0.00%
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	5	20.83%	20.83%
18.5	1	4.17%	25.00%
19.0	3	12.50%	37.50%
19.5	2	8.33%	45.83%
20.0	2	8.33%	54.17%
20.5	7	29.17%	83.33%
21.0	4	16.67%	100.00%
21.5	0	0.00%	100.00%
22.0	0	0.00%	100.00%
22.5	0	0.00%	100.00%
23 & More	0	0.00%	100.00%
Total	24		

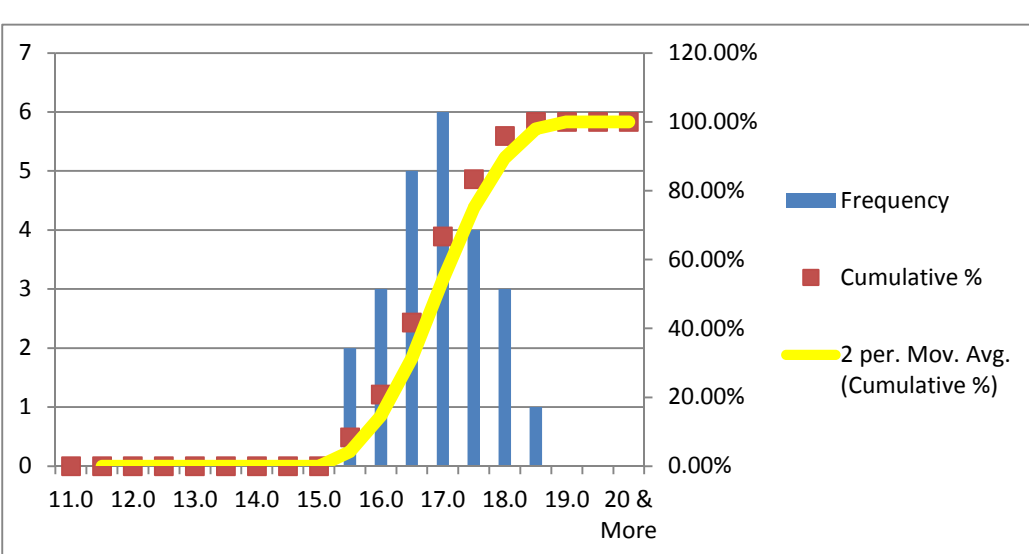


MINIMUM REQUIREMENTS
 As per ISO 6935-2: 16%

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

Mean	16.917
Median	17.0
Mode	17.0
Std. Dev.	0.803
Min	15.5
Max	18.5
Count	24

Bin	Frequency	%	Cumulative %
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	0	0.00%	0.00%
14.5	0	0.00%	0.00%
15.0	0	0.00%	0.00%
15.5	2	8.33%	8.33%
16.0	3	12.50%	20.83%
16.5	5	20.83%	41.67%
17.0	6	25.00%	66.67%
17.5	4	16.67%	83.33%
18.0	3	12.50%	95.83%
18.5	1	4.17%	100.00%
19.0	0	0.00%	100.00%
19.5	0	0.00%	100.00%
20 & More	0	0.00%	100.00%
Total	24		



MINIMUM REQUIREMENTS
 As per ASTM A-615: 7%

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: 7D

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

MINIMUM REQUIREMENTS
 As per ISO 6935-2: 10D
 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
32	6.202	460	670	1.46	9.5	17.5	20.5	2.00	1.37
32	6.266	480	675	1.41	9.0	18.0	21.0		
32	6.274	485	675	1.39	10.0	17.0	20.5		
32	6.289	485	685	1.41	10.5	18.0	21.0		
32	6.263	480	685	1.43	11.0	18.5	21.0		
32	6.302	485	695	1.43	10.0	17.0	20.5		
32	6.289	485	690	1.42	10.5	18.0	21.0		
32	6.288	480	675	1.41	10.0	17.5	20.5		
32	6.284	485	685	1.41	10.5	17.0	20.5		
32	6.299	475	685	1.44	9.5	16.5	20.0		
32	6.323	480	675	1.41	10.0	17.0	20.5		
32	6.289	485	685	1.41	10.5	16.5	18.0		
32	6.251	480	680	1.42	11.0	16.0	18.5		
32	6.330	485	685	1.41	10.5	15.5	18.0		
32	6.286	480	680	1.42	11.0	16.5	19.0		
32	6.294	490	700	1.43	10.0	16.0	18.0		
32	6.268	490	690	1.41	10.5	17.0	18.0		
32	6.298	480	685	1.43	11.5	16.5	19.0		
32	6.259	485	695	1.43	11.0	17.0	19.5		
32	6.263	480	675	1.41	12.0	17.5	20.0		
32	6.267	490	700	1.43	11.5	16.5	19.5		
32	6.272	495	700	1.41	11.0	16.0	19.0		
32	6.275	495	685	1.38	10.5	15.5	18.0		
32	6.276	475	680	1.43	12.0	17.5	20.5		