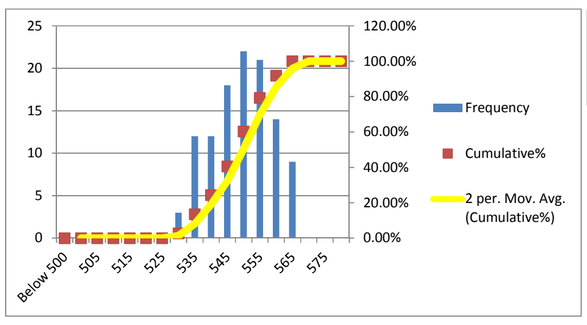
Campaign Length: 20.09.16 to 21.09.16
Total Production: 2197.997 MT
Billet Rolled: JSW-246, YIS-249, JSC-253
Product: Xtreme 500W (22 mm)

YIELD STRENGTH

Mean	549.369
Median	550
Mode	550
Std. Dev.	9.272
Min	530
Max	565
Count	111

Bin	Frequency	%	Cumulative%
Below 500	0	0.00%	0.00%
500	0	0.00%	0.00%
505	0	0.00%	0.00%
510	0	0.00%	0.00%
515	0	0.00%	0.00%
520	0	0.00%	0.00%
525	0	0.00%	0.00%
530	3	2.70%	2.70%
535	12	10.81%	13.51%
540	12	10.81%	24.32%
545	18	16.22%	40.54%
550	22	19.82%	60.36%
555	21	18.92%	79.28%
560	14	12.61%	91.89%
565	9	8.11%	100.00%
570	0	0.00%	100.00%
575	0	0.00%	100.00%
Above 575	0	0.00%	100.00%
	111		



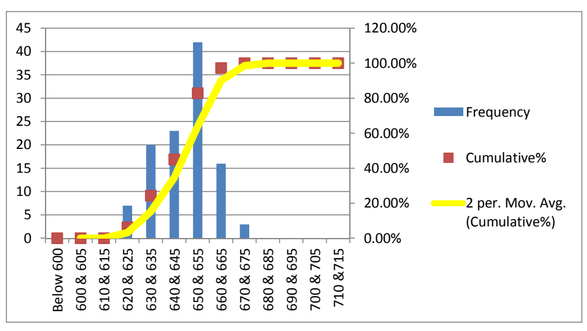
MINIMUM REQUIREMENTS

As per ISO 6935-2: 500 Mpa
As per ASTM A-615: 420 Mpa

ULTIMATE STRENGTH

Mean	646.486
Median	650
Mode	655
Std. Dev.	11.90
Min	620
Max	670
Count	111

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	7	6.31%	6.31%
630 & 635	20	18.02%	24.32%
640 & 645	23	20.72%	45.05%
650 & 655	42	37.84%	82.88%
660 & 665	16	14.41%	97.30%
670 & 675	3	2.70%	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	111		



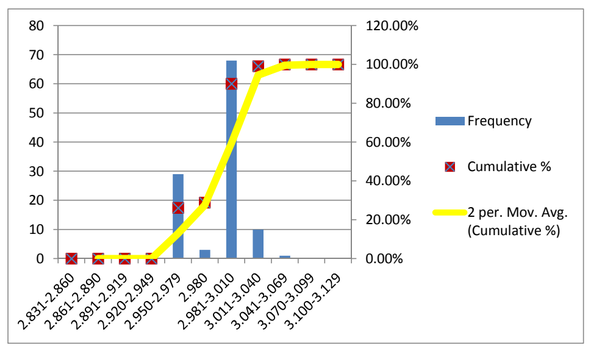
MINIMUM REQUIREMENTS

As per ISO 6935-2: 575 Mpa
As per ASTM A-615: 620 Mpa

UNIT WEIGHT

Mean	2.990
Median	2.989
Mode	2.988
Std. Dev.	0.016
Min	2.957
Max	3.044
Count	111

	Bin	Frequency	%	Cumulative %
	Less Than 2.831	0	0.00%	0.00%
-5%	2.831-2.860	0	0.00%	0.00%
-4%	2.861-2.890	0	0.00%	0.00%
-3%	2.891-2.919	0	0.00%	0.00%
-2%	2.920-2.949	0	0.00%	0.00%
-1%	2.950-2.979	29	26.13%	26.13%
0%	2.980	3	2.70%	28.83%
1%	2.981-3.010	68	61.26%	90.09%
2%	3.011-3.040	10	9.01%	99.10%
3%	3.041-3.069	1	0.90%	100.00%
4%	3.070-3.099	0	0.00%	100.00%
5%	3.100-3.129	0	0.00%	100.00%
Total		111		



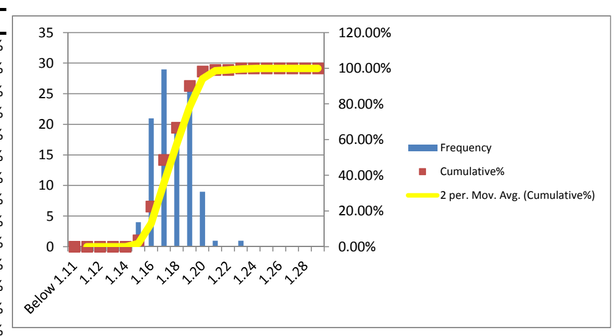
MINIMUM REQUIREMENTS

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

T/Y RATIO

Mean	1.177
Median	1.18
Mode	1.19
Std. Dev.	0.014
Min	1.15
Max	1.23
Count	111

Bin	Frequency	%	Cumulative%
Below 1.11	0	0.00%	0.00%
1.11	0	0.00%	0.00%
1.12	0	0.00%	0.00%
1.13	0	0.00%	0.00%
1.14	0	0.00%	0.00%
1.15	4	3.60%	3.60%
1.16	21	18.92%	22.52%
1.17	29	26.13%	48.65%
1.18	20	18.02%	66.67%
1.19	26	23.42%	90.09%
1.20	9	8.11%	98.20%
1.21	1	0.90%	99.10%
1.22	0	0.00%	99.10%
1.23	1	0.90%	100.00%
1.24	0	0.00%	100.00%
1.25	0	0.00%	100.00%
1.26	0	0.00%	100.00%
1.27	0	0.00%	100.00%
1.28	0	0.00%	100.00%
1.29 & More	0	0.00%	100.00%
Total	111		



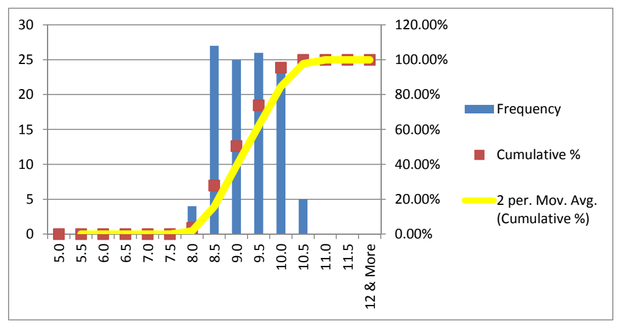
MINIMUM REQUIREMENTS

As per ISO 6935-2: T/Y: 1.15
As per ASTM A-615: Not Required

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

Mean	9.243
Median	9.0
Mode	8.5
Std. Dev.	0.646
Min	8.0
Max	10.5
Count	111

Bin	Frequency	%	Cumulative %
5.0	0	0.00%	0.00%
5.5	0	0.00%	0.00%
6.0	0	0.00%	0.00%
6.5	0	0.00%	0.00%
7.0	0	0.00%	0.00%
7.5	0	0.00%	0.00%
8.0	4	3.60%	3.60%
8.5	27	24.32%	27.93%
9.0	25	22.52%	50.45%
9.5	26	23.42%	73.87%
10.0	24	21.62%	95.50%
10.5	5	4.50%	100.00%
11.0	0	0.00%	100.00%
11.5	0	0.00%	100.00%
12 & More	0	0.00%	100.00%
Total	111		



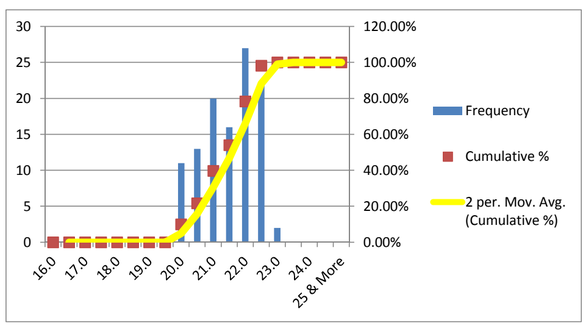
MINIMUM REQUIREMENTS

As per ISO 6935-2: 7%
As per ASTM A-615: Not Required

ELN. AFTER FRACTURE (A5)(GL-5D)

Mean	21.491
Median	21.5
Mode	22.0
Std. Dev.	0.831
Min	20.0
Max	23.0
Count	111

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	0	0.00%	0.00%
18.5	0	0.00%	0.00%
19.0	0	0.00%	0.00%
19.5	0	0.00%	0.00%
20.0	11	9.91%	9.91%
20.5	13	11.71%	21.62%
21.0	20	18.02%	39.64%
21.5	16	14.41%	54.05%
22.0	27	24.32%	78.38%
22.5	22	19.82%	98.20%
23.0	2	1.80%	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	111		



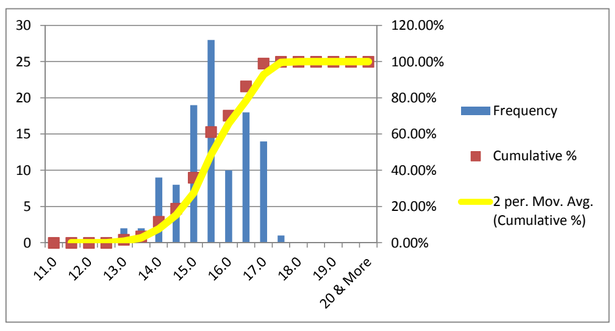
MINIMUM REQUIREMENTS

As per ISO 6935-2: 14%

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

Mean	15.554
Median	15.5
Mode	15.5
Std. Dev.	0.996
Min	13.0
Max	17.5
Count	111

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	2	1.80%	1.80%
13.5	2	1.80%	3.60%
14.0	9	8.11%	11.71%
14.5	8	7.21%	18.92%
15.0	19	17.12%	36.04%
15.5	28	25.23%	61.26%
16.0	10	9.01%	70.27%
16.5	18	16.22%	86.49%
17.0	14	12.61%	99.10%
17.5	1	0.90%	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 & More	0	0.00%	100.00%
Total	111		



MINIMUM REQUIREMENTS

As per ASTM A-615: 8%

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
22	2.957	555	660	1.19	9.5	15.5	22.5		
22	3.006	550	660	1.20	10.0	16.0	20.0		
22	2.979	550	650	1.18	8.5	17.0	22.5		
22	2.987	545	630	1.16	9.5	15.5	21.0		
22	3.005	540	635	1.18	8.5	16.5	20.5		
22	3.003	535	635	1.19	9.0	17.0	20.0		
22	2.989	560	655	1.17	8.5	15.5	21.0		
22	3.011	550	645	1.17	9.0	16.5	20.0		
22	3.000	535	620	1.16	10.0	17.0	20.5	2.30	1.15
22	3.044	535	640	1.20	10.5	15.5	20.0		
22	3.009	555	650	1.17	10.5	16.5	22.0		
22	2.980	565	655	1.16	9.5	15.5	20.5		
22	2.984	555	645	1.16	8.5	17.0	20.0		
22	2.990	560	655	1.17	9.5	15.5	20.5		
22	2.998	555	645	1.16	8.5	16.5	22.0		
22	2.998	560	655	1.17	9.0	17.0	21.0		
22	3.014	560	670	1.20	9.0	15.5	20.5		
22	3.010	555	660	1.19	8.5	16.5	22.0		
22	3.000	555	655	1.18	9.5	17.0	22.5		
22	3.009	565	650	1.15	8.5	15.5	22.0		
22	3.002	550	650	1.18	9.5	16.5	21.5		
22	3.005	550	655	1.19	8.5	17.0	22.5		
22	2.988	545	650	1.19	9.5	17.0	22.5		
22	2.995	545	655	1.20	8.5	15.5	20.0	2.15	1.19
22	2.999	545	655	1.20	9.0	16.5	22.5		
22	3.003	550	655	1.19	8.5	15.5	22.0		
22	3.009	550	650	1.18	9.0	16.5	22.5		
22	2.996	545	650	1.19	10.0	17.0	22.5		
22	2.997	550	640	1.16	10.5	15.5	20.5		
22	3.000	555	645	1.16	8.5	16.5	20.0		
22	2.988	545	635	1.17	10.0	16.5	22.5		
22	2.986	545	650	1.19	8.5	16.5	22.0		
22	3.026	535	640	1.20	9.0	15.5	21.0		
22	3.015	540	635	1.18	9.0	16.0	20.5		
22	3.003	545	650	1.19	10.0	17.0	21.0		
22	2.971	540	640	1.19	10.0	17.0	22.5		
22	2.983	535	640	1.20	9.5	15.5	22.0		
22	2.986	535	630	1.18	9.0	15.0	21.5		
22	3.027	550	640	1.16	9.5	16.0	22.0		
22	3.026	555	650	1.17	10.0	16.5	22.5	2.3	1.0
22	2.992	550	655	1.19	8.5	15.5	20.0		
22	2.979	530	640	1.21	10.0	16.5	22.5		
22	2.987	540	640	1.19	8.5	15.0	20.5		
22	2.966	555	660	1.19	10.5	17.0	23.0		
22	2.984	545	640	1.17	8.5	16.0	21.0		
22	2.988	555	660	1.19	9.0	16.5	21.5		
22	2.995	535	630	1.18	9.5	17.0	22.0		
22	2.990	555	660	1.19	8.5	15.0	20.5		
22	2.993	550	660	1.20	8.5	15.0	21.0		
22	2.980	555	655	1.18	9.5	15.5	22.0		
22	2.977	560	660	1.18	10.0	16.5	23.0		
22	2.979	535	630	1.18	8.5	15.0	21.0		
22	2.988	555	655	1.18	10.0	17.0	22.5		
22	2.995	545	670	1.23	10.5	17.5	22.5		
22	3.014	550	655	1.19	9.5	16.5	22.0		
22	3.010	550	655	1.19	9.0	15.5	21.5		
22	2.967	550	655	1.19	10.0	16.0	22.5	2.2	1.2
22	2.986	560	660	1.18	8.5	15.0	20.5		
22	2.991	555	655	1.18	9.5	16.0	22.0		
22	2.996	555	650	1.17	10.0	16.5	22.5		
22	2.976	565	670	1.19	9.5	15.5	22.0		
22	2.978	545	650	1.19	9.0	15.0	21.5		
22	2.971	545	650	1.19	9.0	15.5	21.0		
22	2.975	550	655	1.19	9.5	16.0	22.0		
22	2.978	535	630	1.18	9.5	15.5	22.0		
22	2.981	555	660	1.19	10.0	16.5	22.5		
22	2.983	550	660	1.20	8.5	15.0	21.0		
22	2.986	555	655	1.18	9.0	15.5	21.5		
22	2.989	565	660	1.17	8.5	15.0	21.0	2.2	1.2
22	2.972	565	655	1.16	9.5	15.5	21.5		
22	2.977	560	660	1.18	8.5	15.0	20.0		
22	2.990	565	660	1.17	9.0	15.5	21.0		

22	2.982	560	665	1.19	9.5	16.0	21.5		
22	2.990	565	660	1.17	9.0	14.0	21.0		
22	2.993	565	655	1.16	9.5	14.5	21.5		
22	2.997	560	650	1.16	10.0	15.0	22.0		
22	3.020	565	655	1.16	8.0	13.0	20.0		
22	2.992	550	645	1.17	9.0	14.0	21.0		
22	2.957	560	650	1.16	9.5	14.5	21.5		
22	2.961	560	655	1.17	10.0	15.0	22.0		
22	2.970	555	650	1.17	9.0	14.5	21.5		
22	2.972	560	650	1.16	10.0	15.5	22.5	2.10	1.06
22	2.965	545	630	1.16	9.5	15.0	22.0		
22	2.972	550	635	1.15	10.0	14.5	22.0		
22	2.975	530	620	1.17	10.0	15.5	22.5		
22	2.977	530	625	1.18	8.5	14.0	21.0		
22	2.980	540	630	1.17	8.0	14.5	21.0		
22	2.983	540	620	1.15	9.0	14.5	21.5		
22	2.986	545	635	1.17	8.0	13.5	20.5		
22	2.988	540	635	1.18	8.5	14.0	21.0		
22	2.991	535	620	1.16	9.5	14.5	21.5		
22	2.993	545	635	1.17	10.0	15.0	22.0		
22	2.995	535	625	1.17	10.0	15.5	22.5		
22	2.997	535	625	1.17	9.0	14.0	21.0		
22	2.999	540	640	1.19	8.5	13.5	20.5		
22	3.011	555	655	1.18	9.5	15.0	22.0		
22	3.014	540	630	1.17	9.0	14.0	21.5		
22	2.962	560	655	1.17	10.0	15.0	22.0	1.99	1.15
22	2.965	540	630	1.17	9.5	15.5	22.0		
22	2.968	540	630	1.17	10.0	15.5	22.5		
22	2.971	555	645	1.16	10.0	15.0	22.0		
22	2.975	545	635	1.17	9.0	14.0	21.0		
22	2.979	555	640	1.15	9.5	14.5	21.5		
22	2.982	550	640	1.16	10.0	16.0	22.5		
22	2.986	560	650	1.16	9.5	15.5	22		
22	2.989	550	645	1.17	9.0	15.0	22		
22	2.992	550	640	1.16	8.0	13.0	20.5		
22	2.995	550	640	1.16	8.5	14.0	21.5	2.02	1.16
22	2.988	545	635	1.17	9.0	16.0	22.0		
22	2.987	545	640	1.17	8.5	15.0	20.0		
22	3.000	540	645	1.19	9.0	14.0	21.0		