DOCUMENTATION OF CONCRETE MIX PERFORMANCE

AMT Engineers

PROJECT INFORMATION

Project:	Coast Isle Mall - Phase II
	Salisbury Beach
Architect:	Johnson, Jones & Associates, PC
	New York, NY
Engineer:	Lake City Design Associates, Inc.
	Lake City, New York
Contractor:	Allison-Barton Construction Co.
	Salisbury Beach, Connecticut
Testing	
Laboratory:	New England laboratories, inc.
	Salisbury Beach, Connecticut
Remarks:	Concrete supplied from plant number 4

Concrete Proportions and Properties

Mix Number	3000-D4
Design Strength	4000
Design Age	28
Supplier:	

Ideal type II Portland cement	6.2 sacks/cy
#67 Aggregatte - Brown Brothers C33	1775 lbs/cy
Sand - Brown Brothers C33	1245 lbs/cy
Water (5.48 gal./sack)	34 gal/cy
AE - Masterbuilders (MB-AE10)	as required

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Report Number	DATE OF TEST	CYLINDER STRENGTHS, psi 28	28	28	Slump in.	Air Content %	Conc Temp	Ave Test Value	Cumul Ave	Cumul S D	Cumul C V	Move 15 S D	Move 15 C V	Move 5 Ave	Range of Test	Cumul Ave Range	Mov 5 Range	W/In Test C V
67	7/22/2008	4360	4510	4490	3.25	4.5	67	4453	4453	- - -	- - -	- - -	- - -	- - -	150	150	- - -	1.99
69	7/22/2008	4250	4300	4320	3.75	5.1	70	4290	4372	115	2.6	- - -	- - -	- - -	70	110	- - -	1.49
72	7/22/2008	4450	4420	4410	3.50	5.3	72	4427	4390	88	2.0	- - -	- - -	- - -	40	87	- - -	1.17
73	7/22/2008	4210	4300	4290	4.25	5.5	70	4267	4359	94	2.2	- - -	- - -	- - -	90	88	- - -	1.19
76	7/22/2008	4460	4470	4400	4.00	5.6	69	4443	4376	90	2.1	- - -	- - -	4376	70	84	84	1.13
78	7/22/2008	4100	4190	4180	3.75	3.5	55	4157	4339	120	2.8	- - -	- - -	4317	90	85	72	1.16
79	7/22/2008	4290	4200	4210	4.25	4.9	65	4233	4324	117	2.7	- - -	- - -	4305	90	86	76	1.17
81	7/22/2008	3940	3980	3960	5.50	6.0	65	3960	4279	168	3.9	- - -	- - -	4212	40	80	76	1.10
82	7/22/2008	4210	4250	4220	4.25	4.9	58	4227	4273	158	3.7	- - -	- - -	4204	40	76	66	1.04
84	7/22/2008	4350	4420	- - - -	4.50	5.4	62	4385	4284	153	3.6	- - -	- - -	4192	70	75	66	1.07
87	7/22/2008	4600	4520	4580	5.50	5.6	68	4567	4310	169	3.9	- - -	- - -	4274	80	75	64	1.07
88	7/22/2008	4550	4490	4500	4.25	3.9	59	4513	4327	171	4.0	- - -	- - -	4330	60	74	58	1.04
89	7/22/2008	4200	4250	4400	4.75	4.8	65	4283	4323	164	3.8	- - -	- - -	4395	200	84	90	1.18
91	7/22/2008	4320	4350	4390	4.00	4.9	71	4353	4326	158	3.7	- - -	- - -	4420	70	83	96	1.16
92	7/22/2008	4410	4480	4350	3.75	2.5	56	4413	4331	154	3.6	154	3.5	4426	130	86	108	1.20
94	7/22/2008	4290	4190	4260	4.50	6.0	75	4247	4326	150	3.5	152	3.5	4362	100	87	112	1.21
96	7/22/2008	4410	4450	4290	3.75	5.8	68	4383	4330	146	3.4	152	3.5	4336	160	91	132	1.27
97	7/22/2008	4750	4800	4720	3.00	4.2	71	4757	4353	174	4.0	188	4.2	4431	80	91	108	1.25
98	7/22/2008	4320	4400	4420	4.50	5.0	58	4380	4355	169	3.9	187	4.2	4436	100	91	114	1.26
99	7/22/2008	4280	4270	4000	3.50	5.2	61	4183	4346	169	3.9	190	4.3	4390	280	101	144	1.39

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101	7/22/2008	4600	4590	4550	3.25	4.8	62	4580	4357	172	4.0	193	4.3	4457	50	98	134	1.35
102	7/22/2008	4420	4480	4450	3.75	5.1	68	4450	4361	169	3.9	190	4.3	4470	60	96	114	1.33
103	7/22/2008	4100	4150	4190	4.75	6.3	75	4147	4352	172	3.9	165	3.8	4348	90	96	116	1.32
105	7/22/2008	4290	4350	4380	3.75	5.8	70	4340	4352	168	3.9	160	3.7	4340	90	96	114	1.32
106	7/22/2008	4280	4350	4270	4.00	5.0	65	4300	4350	165	3.8	162	3.7	4363	80	95	74	1.31
107	7/22/2008	4310	4360	4380	4.75	5.2	67	4350	4350	161	3.7	155	3.6	4317	70	94	78	1.30
109	7/22/2008	4390	4450	4460	4.50	6.0	66	4433	4353	159	3.7	151	3.5	4314	70	93	80	1.28
110	7/22/2008	4760	4680	4650	3.25	5.0	71	4697	4365	169	3.9	170	3.8	4424	110	94	84	1.29
111	7/22/2008	4500	4550	4380	5.25	5.2	68	4477	4369	167	3.8	171	3.8	4451	170	97	100	1.32
112	7/22/2008	4290	4350	4360	4.50	5.8	58	4333	4368	164	3.8	172	3.9	4458	70	96	98	1.31
113	7/22/2008	4460	4430	4390	5.50	4.9	59	4427	4370	162	3.7	166	3.7	4473	70	95	98	1.30
115	7/22/2008	4100	4090	4120	6.75	6.0	50	4103	4361	166	3.8	185	4.2	4407	30	93	90	1.27
116	7/22/2008	4250	4200	4210	5.75	5.4	64	4220	4357	165	3.8	161	3.7	4312	50	92	78	1.25
118	7/22/2008	4350	4390	4250	4.75	5.6	79	4330	4356	163	3.7	161	3.8	4283	140	93	72	1.27
119	7/22/2008	4270	4200	4190	4.50	5.0	68	4220	4352	162	3.7	158	3.7	4260	80	93	74	1.27
120	7/22/2008	4420	4390	4350	5.00	4.8	59	4387	4353	160	3.7	146	3.4	4252	70	92	74	1.26

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Analysis Criteria

Report Name: demo4 report
Report Description: sample
Report File: Demo4.SRC

Project(s):	Coast Isle Mall - Phase II
Mix(es):	3000-D4
Supplier:	use all
Technician:	use all
Slump filter:	No lower limit to no upper limit
Air Content filter:	No lower limit to no upper limit
Temperature filter:	No lower limit to no upper limit
Test dates:	1/1/1900 to : 11/19/2008
Specimen age:	28 days

Analysis Results (28 days)

Number of tests	36	
Standard Deviation Adjustment Factor (ACI 301-05)	1.000	per Table 4.2.3.3.b
Average strength	4353 psi	
Standard deviation	160 psi	
Adjusted standard deviation	160 psi	per Table 4.2.3.3.b
1.000 x 160 = 160 psi		
Design strength (28 days)	4000 psi	
Minimum required average strength (ACI 301-05)	4220 psi	per Table 4.2.3.3.c
1.34 x 160 + 4000 = 4214 psi		
2.33 x 160 + 4000 - 500 = 3873 psi		
Margin of extra performance	133 psi	
(Average strength - minimimum required average strength)		
Probability of a test below 4000 based on normal distribution is 1.36%		
Probability of a test below 3500 based on normal distribution is 0.00%		
Concrete performance (ACI 214R-02)	Excellent	per Table 3.2
Based on standard deviation of 160 psi		
Using laboratory trial batch rating system		
Laboratory testing proficiency (ACI 214R-02)	Excellent	per Table 3.2
Within test coefficient of variation	1.26	
Using laboratory trial batch rating system		
Average range	92 psi	
Maximum 2 specimen range permitted to attain a rating of good:	238 psi	
Maximum 3 specimen range permitted to attain a rating of good:	357 psi	

The above statistical analysis will also qualify mixes

Mix ID: _____ _____ _____ _____

Strength: _____ _____ _____ _____

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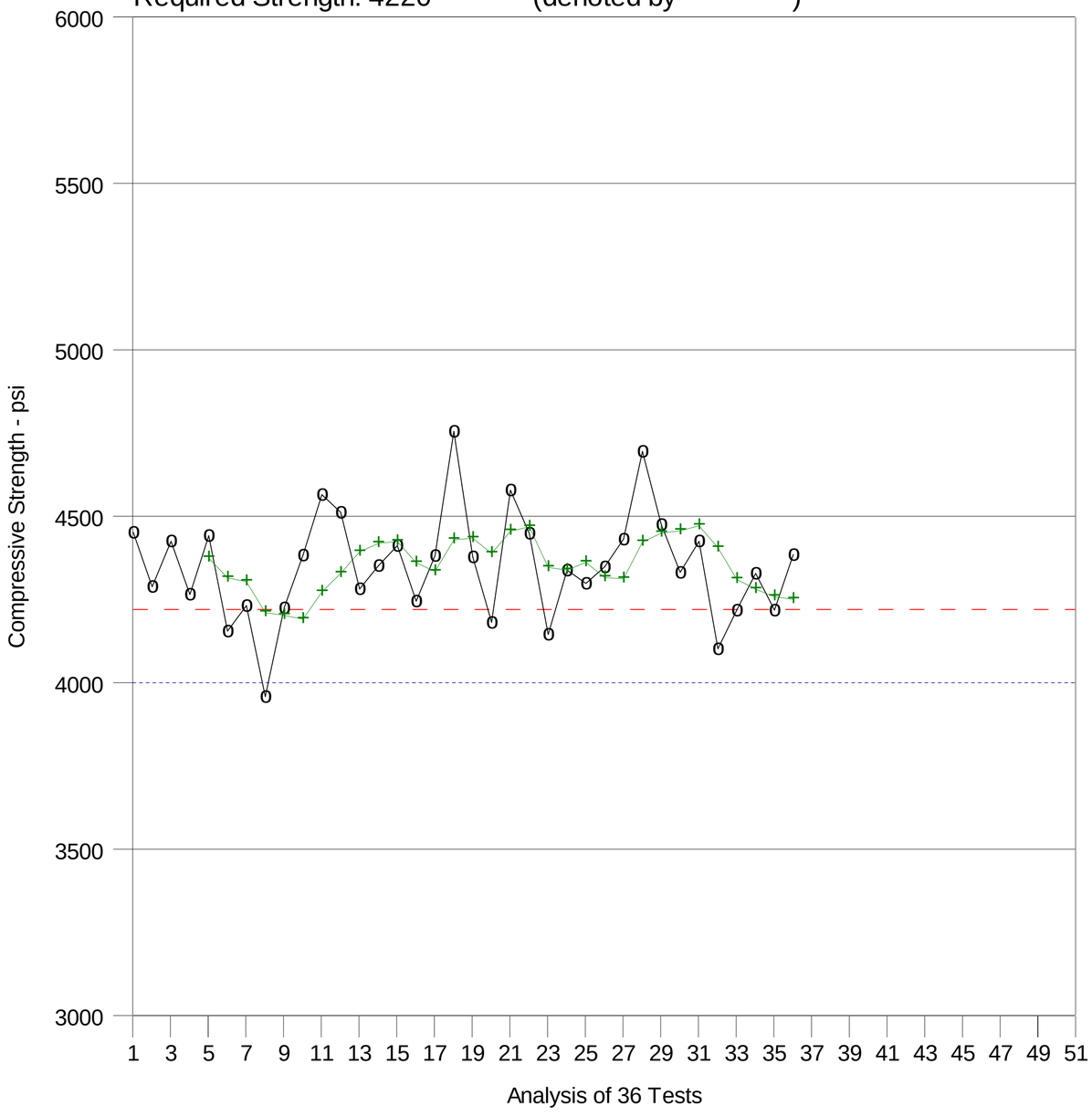
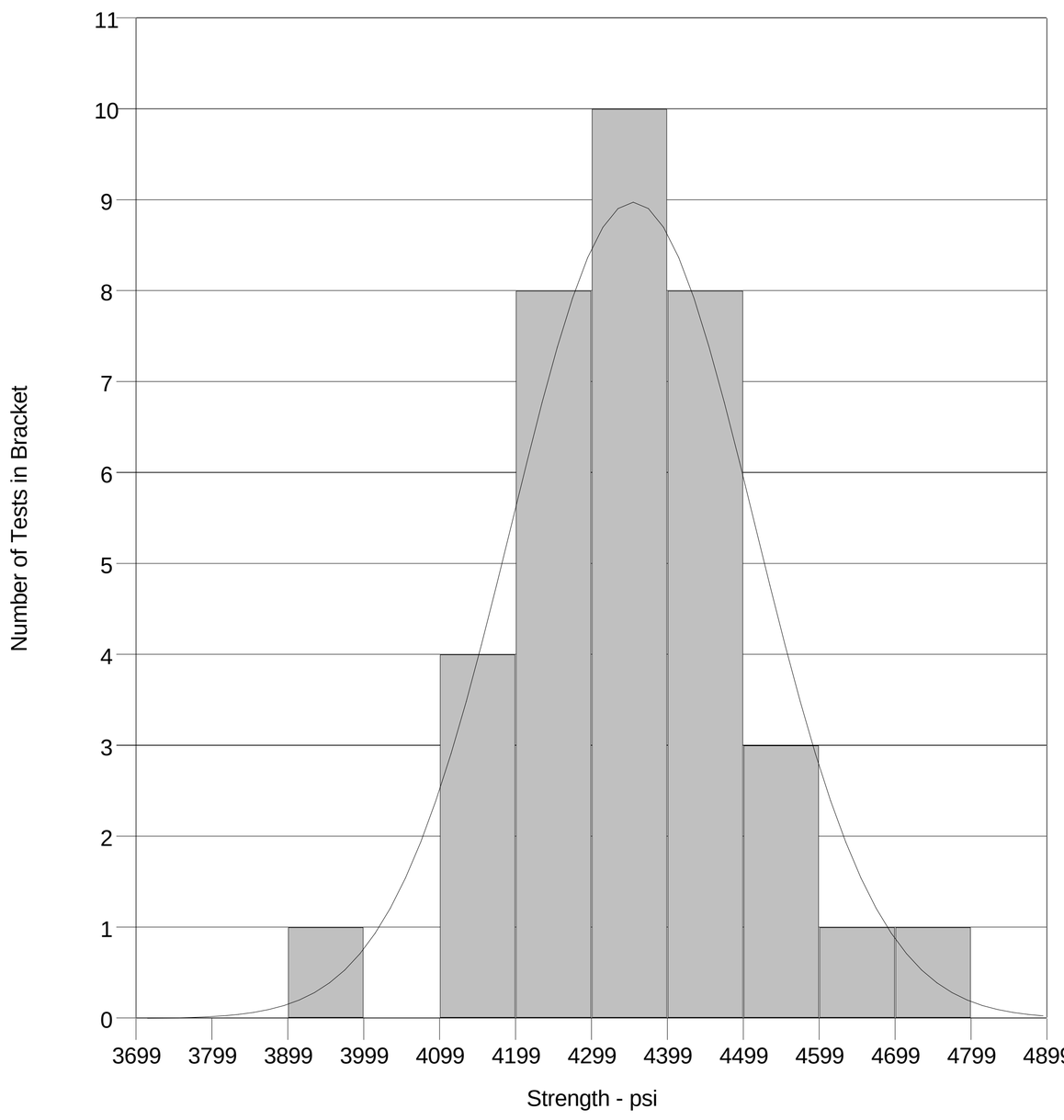
28 Day Strengths (o) and 5 Test Moving Average (+)

Specified Strength: 4000 (denoted by ·····)
Required Strength: 4220 (denoted by – – – -)



28 Day Strength Distribution



99% Confidence value = 3981 psi

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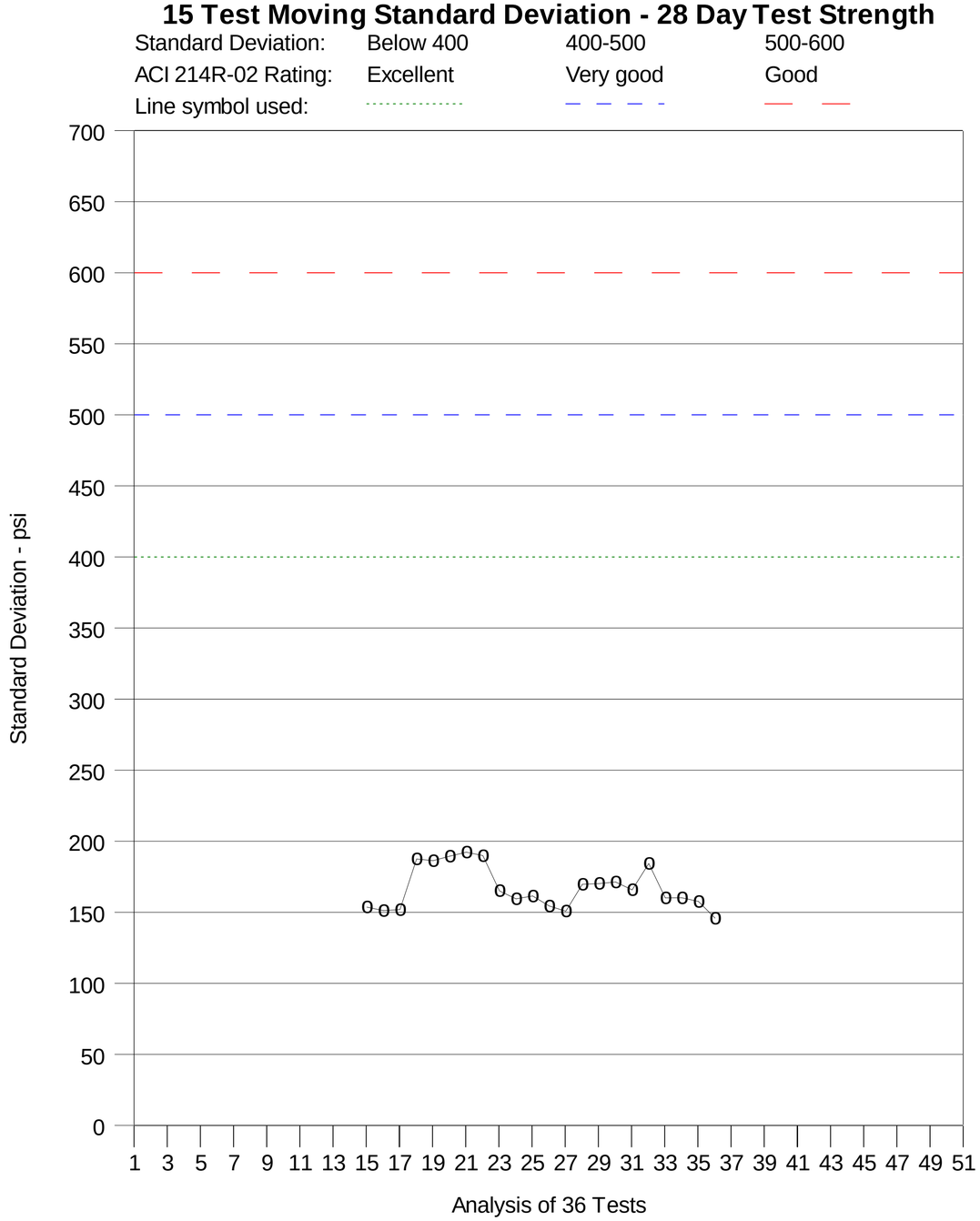
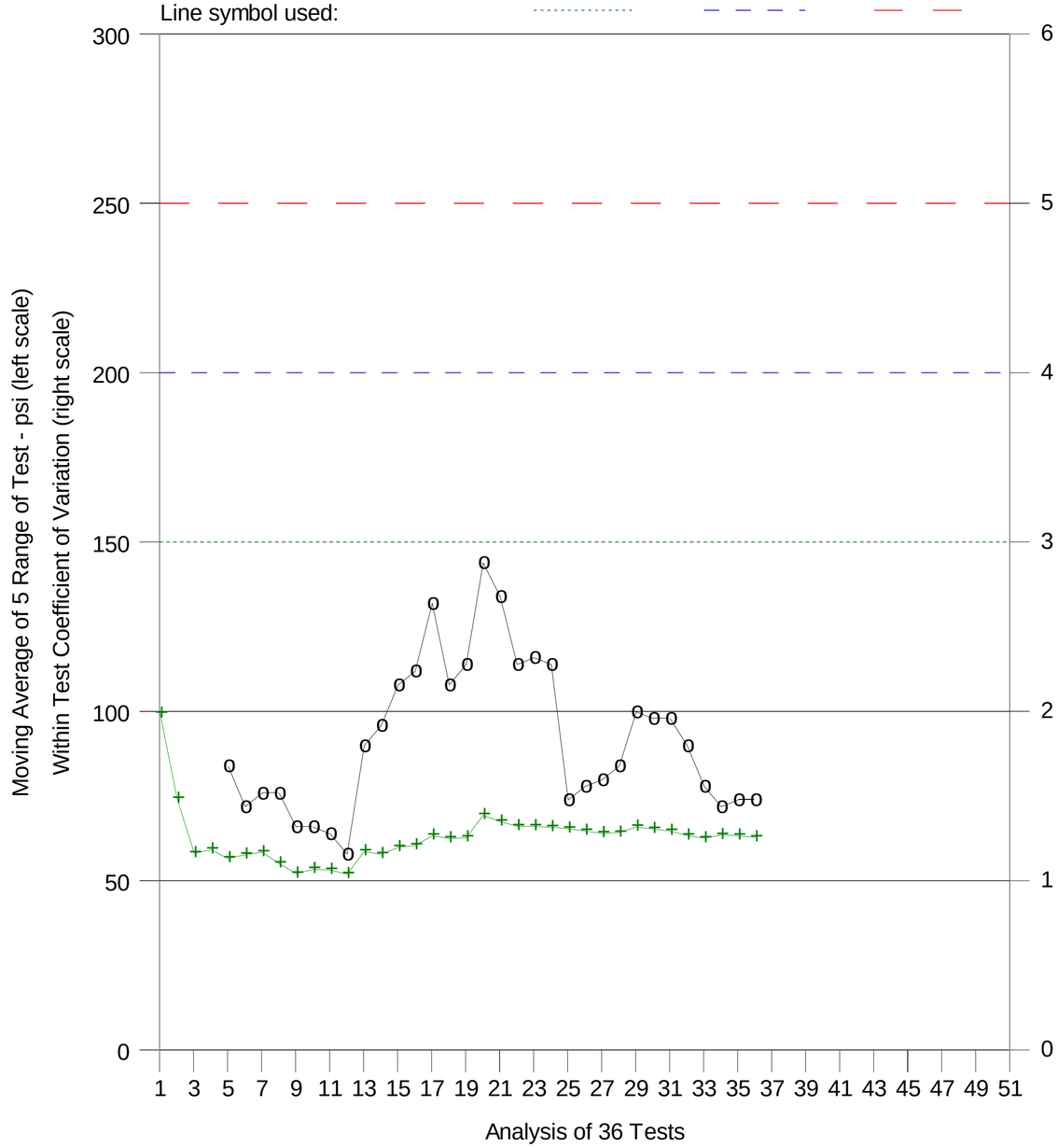
15 Test Moving Standard Deviation - 28 Day Test Strength



Estimated 28 Day Within Batch Coefficient of Variation (+)
Moving Average Range of 5 28 Day Tests (o)



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