

TEST	VARNISHES				
	VAR01	VAR02	VAR03	VAR04	VAR05
VOC (g/L)*	279	324	315	175	549
Total Non-volatile (% by wt)*	28.6	63.1	64.9	33.5	33.0
Density (g/ml)*	1.028	0.879	0.897	1.009	0.819
Viscosity (KU)**	55	57	57	64	53
Water Content (% by wt)	61.4*	0.07	0.04	59.6*	0.02
Stability (KU)***	54	55	57	63	53
Freeze-Thaw Resistance (KU)	53	N/A	N/A	65	N/A
Hardness: Scratch Gouge	5B	5B	6B	2B	4B
	B	F	3B	HB	HB
Application Properties	spray and brush: excellent	spray and brush: excellent	spray and brush: excellent	spray and brush: excellent	spray and brush: excellent
Adhesion	5B	4B	5B	0B	1B
Dry Time: Set-to-touch Dry hard to recoat	1/2 hr.	2-1/4 hrs.	2 hrs.	18 min.	70 min.
	2 hrs. OK,3 hrs.	3-1/2 hrs. OK,17 hrs.	14 hrs. OK,24 hrs.	2 hrs. OK,3 hrs.	2 hrs, 10 min. OK,17 hrs.
Appearance	excellent; uniform	excellent; uniform	excellent; uniform	excellent; uniform	excellent; uniform
Abrasion Resistance (mg)	8	36	34	91	62
Flexibility, 1/4" mandrel	pass	pass	pass	pass	pass
Gloss, 60°	+96	96	94	86	95
Grain raising of Wood	medium	no	no	slight	no
Water Resistance	whitening; recovers 30 minutes	trace whitening; recovers 15 minutes	slight whitening; no recovery	discolored; no recovery	trace whitening, no recovery

* tests conducted by Subcontractor 1 on single component samples
 ** tests conducted by Subcontractor 2 on single component samples
 *** exposure tests conducted by Subcontractor 3 on single component samples with evaluation by Contractor

LABORATORY TEST RESULTS

APPENDIX E-1

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 05-27-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION VAR01

COATING CATEGORY: VARNISHES

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, transparent liquid</u>
Total Non-volatile	ASTM D 2369	<u>28.6% by wt.</u>
Density	ASTM D 1475	<u>1.028 g/ml</u>
Viscosity	ASTM D 562	<u>55 KU</u>
Water	ASTM D 3792	<u>61.4% by wt.</u>
VOC	ASTM D 3960	<u>279 g/L</u>
Stability	ASTM D 1849	<u>54 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>53 KU</u>
Hardness	ASTM D 3363	<u>Scratch 5B, Gouge B</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>excellent: easy application by brush or spray methods</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 30 min. dry hard: 2 hrs. to recoat: OK, 3 hrs.</u>
Appearance	FTMS 141C, 4541	<u>excellent: uniform</u>
Abrasion Resistance	ASTM D 4060	<u>8 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Gloss	ASTM D 523	<u>+96</u>
Grain Raising of Wood	subjective	<u>medium</u>
Water Resistance	ASTM D 1647	<u>whitening, recovers 30 min.</u>

LABORATORY TEST RESULTS

APPENDIX E-2

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 05-27-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION VAR02

COATING CATEGORY: VARNISHES

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, transparent liquid</u>
Total Non-volatile	ASTM D 2369	<u>63.1% by wt.</u>
Density	ASTM D 1475	<u>0.879 g/ml</u>
Viscosity	ASTM D 562	<u>57 KU</u>
Water	ASTM D 4017	<u>0.07% by wt.</u>
VOC	ASTM D 3960	<u>324 g/L</u>
Stability	ASTM D 1849	<u>55 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Hardness	ASTM D 3363	<u>Scratch 5B, Gouge F</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>excellent: easy application by brush or spray methods</u>
Adhesion	ASTM D 3359	<u>4B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 2-1/4 hrs. dry hard: 3-1/2 hrs. to recoat: OK, 17 hrs.</u>
Appearance	FTMS 141C, 4541	<u>excellent: uniform</u>
Abrasion Resistance	ASTM D 4060	<u>36 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Gloss	ASTM D 523	<u>96</u>
Grain Raising of Wood	subjective	<u>no</u>
Water Resistance	ASTM D 1647	<u>trace whitening, recovers 15 min.</u>

LABORATORY TEST RESULTS

APPENDIX E-3

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 05-27-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION VAR03

COATING CATEGORY: VARNISHES

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, transparent liquid</u>
Total Non-volatile	ASTM D 2369	<u>64.9% by wt.</u>
Density	ASTM D 1475	<u>0.897 g/ml</u>
Viscosity	ASTM D 562	<u>57 KU</u>
Water	ASTM D 4017	<u>0.04% by wt.</u>
VOC	ASTM D 3960	<u>315 g/L</u>
Stability	ASTM D 1849	<u>57 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Hardness	ASTM D 3363	<u>Scratch 6B, Gouge 3B</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>excellent: easy application by brush or spray methods</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 2 hrs. dry hard: 14 hrs. to recoat: OK, 24 hrs</u>
Appearance	FTMS 141C, 4541	<u>excellent: uniform</u>
Abrasion Resistance	ASTM D 4060	<u>34 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Gloss	ASTM D 523	<u>94</u>
Grain Raising of Wood	subjective	<u>no</u>
Water Resistance	ASTM D 1647	<u>slight whitening, no recovery</u>

LABORATORY TEST RESULTS

APPENDIX E-4

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 05-27-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION VAR04

COATING CATEGORY: VARNISHES

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, transparent liquid</u>
Total Non-volatile	ASTM D 2369	<u>33.5% by wt.</u>
Density	ASTM D 1475	<u>1.009 g/ml</u>
Viscosity	ASTM D 562	<u>64 KU</u>
Water	ASTM D 3792	<u>59.6% by wt.</u>
VOC	ASTM D 3960	<u>175 g/L</u>
Stability	ASTM D 1849	<u>63 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>65 KU</u>
Hardness	ASTM D 3363	<u>Scratch 2B, Gouge HB</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>excellent: easy application by brush or spray methods</u>
Adhesion	ASTM D 3359	<u>0B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 18 min.</u> <u>dry hard: 2 hrs.</u> <u>to recoat: OK, 3 hrs.</u>
Appearance	FTMS 141C, 4541	<u>excellent: uniform</u>
Abrasion Resistance	ASTM D 4060	<u>91 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Gloss	ASTM D 523	<u>86</u>
Grain Raising of Wood	subjective	<u>slight</u>
Water Resistance	ASTM D 1647	<u>brownish discoloration exposed area, no recovery</u>

LABORATORY TEST RESULTS

APPENDIX E-5

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 05-27-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION VAR05

COATING CATEGORY: VARNISHES

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, transparent liquid</u>
Total Non-volatile	ASTM D 2369	<u>33.0% by wt.</u>
Density	ASTM D 1475	<u>0.819 g/ml</u>
Viscosity	ASTM D 562	<u>53 KU</u>
Water	ASTM D 4017	<u>0.02% by wt.</u>
VOC	ASTM D 3960	<u>549 g/L</u>
Stability	ASTM D 1849	<u>53 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Hardness	ASTM D 3363	<u>Scratch 4B, Gouge HB</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>excellent: easy application by brush or spray methods</u>
Adhesion	ASTM D 3359	<u>1B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 1 hr., 10 min. dry hard: 2 hrs., 10 min. to recoat: OK, 17 hrs.</u>
Appearance	FTMS 141C, 4541	<u>excellent: uniform</u>
Abrasion Resistance	ASTM D 4060	<u>62 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Gloss	ASTM D 523	<u>95</u>
Grain Raising of Wood	subjective	<u>no</u>
Water Resistance	ASTM D 1647	<u>trace whitening, no recovery</u>

TEST	NON-FLAT INTERIOR									
	NFI01	NFI02	NFI03	NFI04	NFI05	NFI06	NFI07	NFI08	NFI09	NFI10
VOC (g/L)*	198	239	178	459	146	149	209	187	203	15
Total Non-volatile (% by wt)*	47.2	82.7	42.0	60.4	44.3	41.2	47.0	48.4	46.3	51.3
Density (g/ml)*	1.219	1.380	1.180	1.158	1.228	1.199	1.173	1.253	1.250	1.234
Viscosity (KU)**	100	86	106	83	94	88	76	101	88	95
Water Content (% by wt)	45.6*	0.17	52.2*	0.14	51.3*	54.5*	44.5*	45.1*	47.0*	48.2*
Stability (KU)***	106	90	138	90	95	91	72	fail	87	91
Freeze-Thaw Resistance (KU)	124	N/A	fail	N/A	96	fail	76	121	87	fail
Hardness: Scratch Gouge	3B	6B	5B	HB	4B	B	HB	4B	HB	4B
	HB	5B	3B	HB	4B	B	HB	3B	HB	4B
Blocking Resistance	0	3	2	10	0	7	8	0	0	7
Application Properties	good	good	good	fair	brush: fair roller: good	brush: fair roller: good	good	brush: fair roller: good	good	good
Adhesion	5B	5B	5B	5B	3B	2B	2B	4B	4B	5B
Dry Time: Set-to-touch Dry hard to recoat	1 1/4 hrs.	4 1/2 hrs.	30 min.	2 1/4 hrs.	30 min.	25 min.	15 min.	15 min.	30 min.	20 min.
	4 hrs.	7 hrs.	1 1/2 hrs	9 1/4 hrs.	4 1/4 hrs.	3 hrs.	70 min.	2 1/2 hrs.	4 1/2 hrs.	50 min.
	OK, 7 hrs.	OK, 16 hrs	OK, 4 1/2 hrs	OK, 16 hrs	OK, 28 hrs	OK, 16 hr.	OK, 4 hrs	OK, 16 hrs	OK, 4 1/2 hrs	OK, 2 hrs.
Appearance	brush: good rolled: fair	good; uniform	good uniform	good; uniform	good; uniform	fair	brush: good roller: fair	brush: fair roller: good	brush: fair roller: good	good
Flexibility, 1/4" mandrel	pass	pass	pass	pass	pass	fail	pass	pass	pass	pass
Fungus Resistance	fail	fail	fail	fail	fail	fail	fail	fail	fail	fail
Gloss	70	90	84	92	29	44	78	49	53	45
Accelerated Yellowing	no change	0.05	no change	0.06	no change	0.01	0.03	no change	no change	no change
Contrast Ratio/Dry Opacity	1.00	0.99	0.99	0.96	0.97	0.99	0.95	0.99	0.99	0.98
Sag Resistance	12	9	12	5	12	9	12	12	10	12
Scrub Resistance	pass, 400 cycles	pass, 400 cycles	wear thru, 225 cycles	pass, 400 cycles	wear thru, 400 cycles	pass, 400 cycles	wear thru, 290 cycles	pass, 400 cycles	pass, 400 cycles	pass, 400 cycles

* tests conducted by Subcontractor 1 on single component samples
 ** tests conducted by Subcontractor 2 on single component samples
 *** exposure tests conducted by Subcontractor 3 on single component samples with evaluation by Contractor

LABORATORY TEST RESULTS

APPENDIX F-1

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI01

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>47.2% by wt.</u>
Density	ASTM D 1475	<u>1.219 g/ml</u>
Viscosity	ASTM D 562	<u>100 KU</u>
Water	ASTM D 3792	<u>45.6% by wt.</u>
VOC	ASTM D 3960	<u>198 g/L</u>
Stability	ASTM D 1849	<u>106 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>124 KU</u>
Hardness	ASTM D 3363	<u>Scratch 3B, Gouge HB</u>
Blocking Resistance	ASTM D 4946	<u>0</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good, easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 1-1/4 hr. dry hard: 4 hrs. to recoat: OK, 7 hrs.</u>
Appearance	FTMS 141C, 4541	<u>brush: good, uniform rolled: fair, some craters in film</u>
Flexibility	ASTM D 522	<u>pass</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>70</u>
Accelerated Yellowing	FTMS 141C, 6132	<u>no change</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>1.00</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Scrub Resistance	ASTM D 2486	<u>pass, 400 cycles</u>

LABORATORY TEST RESULTS

APPENDIX F-2

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI02

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily <u>to homogenous state</u>
Total Non-volatile	ASTM D 2369	<u>82.7% by wt.</u>
Density	ASTM D 1475	<u>1.380 g/ml</u>
Viscosity	ASTM D 562	<u>86 KU</u>
Water	ASTM D 4017	<u>0.17% by wt.</u>
VOC	ASTM D 3960	<u>239 g/L</u>
Stability	ASTM D 1849	<u>90 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Hardness	ASTM D 3363	<u>Scratch 6B, Gouge 5B</u>
Blocking Resistance	ASTM D 4946	<u>3</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good, easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 4-1/2 hrs. dry hard: 7 hrs. to recoat: OK, 16 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>Fail</u>
Gloss	ASTM D 523	<u>90</u>
Accelerated Yellowing	FTMS 141C, 6132	<u>0.05</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.99</u>
Sag Resistance	ASTM D 4400	<u>9</u>
Scrub Resistance	ASTM D 2486	<u>pass, 400 cycles</u>

LABORATORY TEST RESULTS

APPENDIX F-3

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI03

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily <u>to homogenous state</u>
Total Non-volatile	ASTM D 2369	<u>42.0% by wt.</u>
Density	ASTM D 1475	<u>1.180 g/ml</u>
Viscosity	ASTM D 562	<u>106 KU</u>
Water	ASTM D 3792	<u>52.2% by wt.</u>
VOC	ASTM D 3960	<u>178 g/L</u>
Stability	ASTM D 1849	<u>138 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>fail</u>
Hardness	ASTM D 3363	<u>Scratch 5B, Gouge 3B</u>
Blocking Resistance	ASTM D 4946	<u>2</u>
Application Properties	FTMS 141c, 2141.1 and 2112	good, easily applied by <u>brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 30 min.</u> <u>dry hard: 1-1/2 hrs.</u> <u>to recoat: OK, 4-1/2 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good; uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>84</u>
Accelerated Yellowing	FTMS 141C, 6132	<u>no change</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.99</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Scrub Resistance	ASTM D 2486	<u>wear thru 225 cycles</u>

LABORATORY TEST RESULTS

APPENDIX F-4

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI04

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily <u>to homogenous state</u>
Total Non-volatile	ASTM D 2369	<u>60.4% by wt.</u>
Density	ASTM D 1475	<u>1.158 g/ml</u>
Viscosity	ASTM D 562	<u>83 KU</u>
Water	ASTM D 4017	<u>0.14% by wt.</u>
VOC	ASTM D 3960	<u>459 g/L</u>
Stability	ASTM D 1849	<u>90 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Hardness	ASTM D 3363	<u>Scratch HB, Gouge HB</u>
Blocking Resistance	ASTM D 4946	<u>10</u>
Application Properties	FTMS 141c, 2141.1 and 2112	fair: some dray when applied <u>by roller and brush</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 2-1/4 hrs</u> <u>dry hard: 9-1/4 hrs.</u> <u>to recoat: OK, 16 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>92</u>
Accelerated Yellowing	FTMS 141C, 6132	<u>0.06</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>.96</u>
Sag Resistance	ASTM D 4400	<u>5</u>
Scrub Resistance	ASTM D 2486	<u>pass, 400 cycles</u>

LABORATORY TEST RESULTS

APPENDIX F-5

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI05

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>44.3% by wt.</u>
Density	ASTM D 1475	<u>1.228 g/ml</u>
Viscosity	ASTM D 562	<u>94 KU</u>
Water	ASTM D 3792	<u>51.3% by wt.</u>
VOC	ASTM D 3960	<u>146 g/L</u>
Stability	ASTM D 1849	<u>95 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>96 KU</u>
Hardness	ASTM D 3363	<u>Scratch 4B, Gouge 4B</u>
Blocking Resistance	ASTM D 4946	<u>0</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>brush: fair, some drag roller: good, easily applied</u>
Adhesion	ASTM D 3359	<u>3B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 30 min. dry hard: 4-1/4 hrs. to recoat: OK, 28 hrs.</u>
Appearance	FTMS 141C, 4541	<u>brush: good, trace brush marks roller: good, uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>29</u>
Accelerated Yellowing	FTMS 141C, 6132	<u>no change</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.97</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Scrub Resistance	ASTM D 2486	<u>wear thru 400 cycles</u>

LABORATORY TEST RESULTS

APPENDIX F-

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI06

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>41.2% by wt.</u>
Density	ASTM D 1475	<u>1.199 g/ml</u>
Viscosity	ASTM D 562	<u>88 KU</u>
Water	ASTM D 3792	<u>54.5% by wt.</u>
VOC	ASTM D 3960	<u>149 g/L</u>
Stability	ASTM D 1849	<u>91 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>fail</u>
Hardness	ASTM D 3363	<u>Scratch B, Gouge B</u>
Blocking Resistance	ASTM D 4946	<u>7</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>brush: fair, some drag</u> <u>roller: good, easily applied</u>
Adhesion	ASTM D 3359	<u>2B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 25 min.</u> <u>dry hard: 3 hrs.</u> <u>to recoat: OK, 16 hrs.</u>
Appearance	FTMS 141C, 4541	<u>brushed: fair, brush marks</u> <u>rolled: some craters in film</u>
Flexibility	ASTM D 522	<u>fail</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>44</u>
Accelerated Yellowing	FTMS 141C, 6132	<u>0.01</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.99</u>
Sag Resistance	ASTM D 4400	<u>9</u>
Scrub Resistance	ASTM D 2486	<u>pass, 400 cycles</u>

LABORATORY TEST RESULTS

APPENDIX F-7

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 05-27-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI07

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	47.0% by wt.
Density	ASTM D 1475	1.173 g/ml
Viscosity	ASTM D 562	76 KU
Water	ASTM D 3792	44.5% by wt.
VOC	ASTM D 3960	209 g/L
Stability	ASTM D 1849	72 KU
Freeze-Thaw Resistance	ASTM D 2243	76 KU
Hardness	ASTM D 3363	Scratch HB, Gouge HB
Blocking Resistance	ASTM D 4946	8
Application Properties	FTMS 141c, 2141.1 and 2112	good: easily applied by brush and roller
Adhesion	ASTM D 3359	2B
Dry Time	ASTM D 1640	set-to-touch: 15 min. dry hard: 1 hr. 10 min. to recoat: OK, 4 hrs.
Appearance	FTMS 141C, 4541	brush: good roller: fair, some craters in film
Flexibility	ASTM D 522	pass
Fungus Resistance	FTMS 141C, 6271.2	fail
Gloss	ASTM D 523	78
Accelerated Yellowing	FTMS 141C, 6132	0.03
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	0.95
Sag Resistance	ASTM D 4400	12
Scrub Resistance	ASTM D 2486	wear thru, 290 cycles

LABORATORY TEST RESULTS

APPENDIX F-8

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI08

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>48.4% by wt.</u>
Density	ASTM D 1475	<u>1.253 g/ml</u>
Viscosity	ASTM D 562	<u>101 KU</u>
Water	ASTM D 3792	<u>45.1% by wt.</u>
VOC	ASTM D 3960	<u>187 g/L</u>
Stability	ASTM D 1849	<u>fail</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>121 KU</u>
Hardness	ASTM D 3363	<u>Scratch 4B, Gouge 3B</u>
Blocking Resistance	ASTM D 4946	<u>0</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>brush: fair, some drag</u> <u>roller: good, easily applied</u>
Adhesion	ASTM D 3359	<u>4B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 15 min.</u> <u>dry hard: 2-1/2 hrs.</u> <u>to recoat: OK, 16 hrs.</u>
Appearance	FTMS 141C, 4541	<u>brush: fair, brush marks present</u> <u>roller: good, uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>49</u>
Accelerated Yellowing	FTMS 141C, 6132	<u>no change</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.99</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Scrub Resistance	ASTM D 2486	<u>pass, 400 cycles</u>

LABORATORY TEST RESULTS

APPENDIX F-9

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 03-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI09

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>slight settling, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>46.3% by wt.</u>
Density	ASTM D 1475	<u>1.250 g/ml</u>
Viscosity	ASTM D 562	<u>88 KU</u>
Water	ASTM D 3792	<u>47.0% by wt.</u>
VOC	ASTM D 3960	<u>203 g/L</u>
Stability	ASTM D 1849	<u>87 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>87 KU</u>
Hardness	ASTM D 3363	<u>Scratch HB, Gouge HB</u>
Blocking Resistance	ASTM D 4946	<u>0</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good, easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>4B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 30 min. dry hard: 4-1/2 hrs. to recoat: OK, 4-1/2 hrs.</u>
Appearance	FTMS 141C, 4541	<u>brush: fair, brush marks roller: good, uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>53</u>
Accelerated Yellowing	FTMS 141C, 6132	<u>no change</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.99</u>
Sag Resistance	ASTM D 4400	<u>10</u>
Scrub Resistance	ASTM D 2486	<u>pass, 400 cycles</u>

LABORATORY TEST RESULTS

APPENDIX F-10

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFI10

COATING CATEGORY: NON-FLAT INTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>51.3% by wt.</u>
Density	ASTM D 1475	<u>1.234 g/ml</u>
Viscosity	ASTM D 562	<u>95 KU</u>
Water	ASTM D 3792	<u>48.2% by wt.</u>
VOC	ASTM D 3960	<u>15 g/L</u>
Stability	ASTM D 1849	<u>91 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>fail</u>
Hardness	ASTM D 3363	<u>Scratch 4B, Gouge 4B</u>
Blocking Resistance	ASTM D 4946	<u>7</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good: easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 20 min.</u> <u>dry hard: 50 min.</u> <u>to recoat: OK, 2 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>45</u>
Accelerated Yellowing	FTMS 141C, 6132	<u>no change</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.98</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Scrub Resistance	ASTM D 2486	<u>pass, 400 cycles</u>

TEST	NON-FLAT EXTERIOR									
	NFE01	NFE02	NFE03	NFE04	NFE05	NFE06	NFE07	NFE08	NFE09	NFE10
VOC (g/L)*	269	257	375	314	193	183	125	242	240	388
Total Non-volatile (% by wt)*	77.8	42.5	66.8	45.3	44.9	47.4	57.9	80.0	79.6	68.6
Density (g/ml)*	1.211	1.197	1.129	1.216	1.196	1.232	1.414	1.212	1.178	1.237
Viscosity (KU)**	78	92	88	91	91	95	105	86	86	96
Water Content (% by wt)	0.17	48.5*	0.24	42.1*	48.3*	46.2*	38.0*	0.20	0.47	0.31
Stability (KU)***	80	96	82	94	90	91	118	85	83	102
Freeze-Thaw Resistance	N/A	104	N/A	94	92	91	103	N/A	N/A	N/A
Hardness: Scratch	6B	HB	5B	3B	2B	3B	HB	<6B	<6B	3B
Gouge	5B	HB	3B	3B	B	3B	HB	4B	<6B	B
Blocking Resistance	6	9	10	0	3	0	10	9	6	10
Application Properties	good; brushes easily	good; brushes easily	good; brushes easily	fair	fair	fair	good; brushes easily	good; brushes easily	good; brushes easily	good; brushes easily
Adhesion	5B	5B	5B	4B	5B	0B	4B	5B	5B	5B
Dry Time: Set-to-touch	10½ hrs.	1 hr.	2 hrs.	½ hr.	½ hr.	55 min.	½ hr.	3 hrs.	11½ hrs.	1¼ hrs.
Dry hard	16 hrs.	4¼ hrs.	17 hrs.	2¼ hrs.	1¾ hrs.	5¼ hrs.	1½ hrs.	11½ hrs.	21½ hrs.	11½ hrs.
to recoat	OK, 16 hrs.	OK, 7 hrs.	OK, 24 hrs.	OK, 4 hrs.	OK, 16 hrs.	OK, 8½ hrs.	OK, 2 hrs.	OK, 24 hrs.	OK, 24 hrs.	OK, 24 hrs.
Appearance	good; trace brush marks	good; uniform	good; uniform	fair; brushmarks	good; trace brush marks	fair; brushmarks	fair; brushmarks	good; uniform	excellent	good; trace brush marks
Abrasion Resistance (mg)	138	128	119	80	81	65	187	78	57	143
Flexibility, 1/4 inch mandrel	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass
Impact Resistance (in pounds)	pass, 80	pass, 80	pass, 80	pass, 80	pass, 80	pass, 80	pass, 80	pass, 80	pass, 80	pass, 80
Accelerated Weathering:										
Reflectance	- 1 unit	no change	no change	no change	+ 1 unit	no change	- 1 unit	- 4 unit	no change	- 1 unit
Gloss	- 59 units	- 21 units	- 58 units	- 20 units	- 44 units	- 46 units	- 1 unit	- 56 units	- 56 units	- 57 units
Fungus resistance	fail	fail	fail	pass	fail	pass	pass	fail	fail	pass
Gloss, 60°	91	71	92	40	79	83	4.5	91	92	89
Contrast Ratio/Dry Opacity	1.00	0.98	0.98	0.98	0.96	0.97	0.96	0.98	0.99	1.00
Sag Resistance	7	10	10	12	12	12	12	8	4	12

* tests conducted by Subcontractor 1 on single component samples
 ** tests conducted by Subcontractor 2 on single component samples
 *** exposure tests conducted by Subcontractor 3 on single component samples with evaluation by Contractor

LABORATORY TEST RESULTS

APPENDIX G-1

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE01

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>77.8% by wt.</u>
Density	ASTM D 1475	<u>1.211 g/ml</u>
Viscosity	ASTM D 562	<u>78 KU</u>
Water	ASTM D 4017	<u>0.17% by wt.</u>
VOC	ASTM D 3960	<u>269 g/L</u>
Stability	ASTM D 1849	<u>80 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Hardness	ASTM D 3363	<u>Scratch 6B, Gouge 5B</u>
Blocking Resistance	ASTM D 4946	<u>6</u>
Application Properties	FTMS 141c, 2141.1	<u>good, brushes easily</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 10-1/2 hrs. dry hard: 16 hrs. to recoat: OK, 16 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good, trace brush marks</u>
Abrasion Resistance	ASTM D 4060	<u>138 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Impact Resistance	ASTM D 2794	<u>pass, 80 in. lbs.</u>
Accelerated Weathering	ASTM G 53	<u>Reflectance: 1 unit decrease Gloss: 59 unit decrease</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>91</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>1.00</u>
Sag Resistance	ASTM D 4400	<u>7</u>

LABORATORY TEST RESULTS

APPENDIX G-2

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE02

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	42.5% by wt.
Density	ASTM D 1475	1.197 g/ml
Viscosity	ASTM D 562	92 KU
Water	ASTM D 3792	48.5% by wt.
VOC	ASTM D 3960	257 g/L
Stability	ASTM D 1849	96 KU
Freeze-Thaw Resistance	ASTM D 2243	104 KU
Hardness	ASTM D 3363	Scratch HB, Gouge HB
Blocking Resistance	ASTM D 4946	9
Application Properties	FTMS 141c, 2141.1	good, brushes easily
Adhesion	ASTM D 3359	5B
Dry Time	ASTM D 1640	set-to-touch: 1 hr. dry hard: 4-1/4 hr. to recoat: OK, 7 hrs.
Appearance	FTMS 141C, 4541	good: uniform
Abrasion Resistance	ASTM D 4060	128 mg.
Flexibility	ASTM D 522	pass
Impact Resistance	ASTM D 2794	pass, 80 in. lb.
Accelerated Weathering	ASTM G 53	Reflectance: no change Gloss: 21 unit decrease
Fungus Resistance	FTMS 141C, 6271.2	fail
Gloss	ASTM D 523	71
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	0.98
Sag Resistance	ASTM D 4400	10

LABORATORY TEST RESULTS

APPENDIX G-3

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 03-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE03

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>66.8% by wt.</u>
Density	ASTM D 1475	<u>1.129 g/ml</u>
Viscosity	ASTM D 562	<u>88 KU</u>
Water	ASTM D 4017	<u>0.24% by wt.</u>
VOC	ASTM D 3960	<u>375 g/L</u>
Stability	ASTM D 1849	<u>82 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Hardness	ASTM D 3363	<u>Scratch 5B, Gouge 3B</u>
Blocking Resistance	ASTM D 4946	<u>10</u>
Application Properties	FTMS 141c, 2141.1	<u>good, brushes easily</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 2 hrs.</u> <u>dry hard: 17 hrs.</u> <u>to recoat: OK, 24 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Abrasion Resistance	ASTM D 4060	<u>119 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Impact Resistance	ASTM D 2794	<u>pass, 80 in. lb.</u>
Accelerated Weathering	ASTM G 53	<u>Reflectance: no change</u> <u>Gloss: 58 unit decrease</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>92</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.98</u>
Sag Resistance	ASTM D 4400	<u>10</u>

LABORATORY TEST RESULTS

APPENDIX G-4

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE04

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>45.3% by wt.</u>
Density	ASTM D 1475	<u>1.216 g/ml</u>
Viscosity	ASTM D 562	<u>91 KU</u>
Water	ASTM D 3792	<u>42.1% by wt.</u>
VOC	ASTM D 3960	<u>314 g/L</u>
Stability	ASTM D 1849	<u>94 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>94 KU</u>
Hardness	ASTM D 3363	<u>Scratch 3B, Gouge 3B</u>
Blocking Resistance	ASTM D 4946	<u>0</u>
Application Properties	FTMS 141c, 2141.1	<u>fair</u>
Adhesion	ASTM D 3359	<u>4B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 30 min.</u> <u>dry hard: 2-1/4 hr.</u> <u>to recoat: OK, 4 hrs.</u>
Appearance	FTMS 141C, 4541	<u>fair, brush marks</u>
Abrasion Resistance	ASTM D 4060	<u>80 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Impact Resistance	ASTM D 2794	<u>pass, 80 in. lb.</u>
Accelerated Weathering	ASTM G 53	<u>Reflectance: no change</u> <u>Gloss: 20 unit decrease</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>pass</u>
Gloss	ASTM D 523	<u>40</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.98</u>
Sag Resistance	ASTM D 4400	<u>12</u>

LABORATORY TEST RESULTS

APPENDIX G-5

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE05

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>44.9% by wt.</u>
Density	ASTM D 1475	<u>1.196 g/ml</u>
Viscosity	ASTM D 562	<u>91 KU</u>
Water	ASTM D 3792	<u>48.3% by wt.</u>
VOC	ASTM D 3960	<u>193 g/L</u>
Stability	ASTM D 1849	<u>90 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>92 KU</u>
Hardness	ASTM D 3363	<u>Scratch 2B, Gouge B</u>
Blocking Resistance	ASTM D 4946	<u>3</u>
Application Properties	FTMS 141c, 2141.1	<u>fair</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 30 min.</u> <u>dry hard: 1-3/4 hr.</u> <u>to recoat: OK, 16 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good, trace brush marks</u>
Abrasion Resistance	ASTM D 4060	<u>81 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Impact Resistance	ASTM D 2794	<u>pass, 80 in. lb.</u>
Accelerated Weathering	ASTM G 53	<u>Reflectance: 1 unit increase</u> <u>Gloss: 44 unit decrease</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>79</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.96</u>
Sag Resistance	ASTM D 4400	<u>12</u>

LABORATORY TEST RESULTS

APPENDIX G-6

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 03-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE06

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>47.4% by wt.</u>
Density	ASTM D 1475	<u>1.232 g/ml</u>
Viscosity	ASTM D 562	<u>95 KU</u>
Water	ASTM D 3792	<u>46.2% by wt.</u>
VOC	ASTM D 3960	<u>183 g/L</u>
Stability	ASTM D 1849	<u>91 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>91 KU</u>
Hardness	ASTM D 3363	<u>Scratch 3B, Gouge 3B</u>
Blocking Resistance	ASTM D 4946	<u>0</u>
Application Properties	FTMS 141c, 2141.1	<u>fair</u>
Adhesion	ASTM D 3359	<u>0B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 55 min.</u> <u>dry hard: 5-1/4 hrs.</u> <u>to recoat: OK, 8-1/2 hrs.</u>
Appearance	FTMS 141C, 4541	<u>fair, brush marks</u>
Abrasion Resistance	ASTM D 4060	<u>65 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Impact Resistance	ASTM D 2794	<u>pass, 80 in. lb.</u>
Accelerated Weathering	ASTM G 53	<u>Reflectance: no change</u> <u>Gloss: 46 unit decrease</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>pass</u>
Gloss	ASTM D 523	<u>83</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.97</u>
Sag Resistance	ASTM D 4400	<u>12</u>

LABORATORY TEST RESULTS

APPENDIX G-7

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE07

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>57.9% by wt.</u>
Density	ASTM D 1475	<u>1.414 g/ml</u>
Viscosity	ASTM D 562	<u>105 KU</u>
Water	ASTM D 3792	<u>38.0% by wt.</u>
VOC	ASTM D 3960	<u>125 g/L</u>
Stability	ASTM D 1849	<u>118 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>103 KU</u>
Hardness	ASTM D 3363	<u>Scratch HB, Gouge HB</u>
Blocking Resistance	ASTM D 4946	<u>10</u>
Application Properties	FTMS 141c, 2141.1	<u>good, brushes easily</u>
Adhesion	ASTM D 3359	<u>4B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 30 min.</u> <u>dry hard: 1-1/2 hrs.</u> <u>to recoat: OK, 2 hrs.</u>
Appearance	FTMS 141C, 4541	<u>fair, brush marks</u>
Abrasion Resistance	ASTM D 4060	<u>187 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Impact Resistance	ASTM D 2794	<u>pass, 80 in. lb.</u>
Accelerated Weathering	ASTM G 53	<u>Reflectance: 1 unit decrease</u> <u>Gloss: 1 unit decrease</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>pass</u>
Gloss	ASTM D 523	<u>4.5</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.96</u>
Sag Resistance	ASTM D 4400	<u>12</u>

LABORATORY TEST RESULTS

APPENDIX G-8

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 03-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE08

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>80.0% by wt.</u>
Density	ASTM D 1475	<u>1.212 g/ml</u>
Viscosity	ASTM D 562	<u>86 KU</u>
Water	ASTM D 4017	<u>0.20% by wt.</u>
VOC	ASTM D 3960	<u>242 g/L</u>
Stability	ASTM D 1849	<u>85 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Hardness	ASTM D 3363	<u>Scratch <6B, Gouge 4B</u>
Blocking Resistance	ASTM D 4946	<u>9</u>
Application Properties	FTMS 141c, 2141.1	<u>good, brushes easily</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 3 hrs.</u> <u>dry hard: 11-1/2 hrs.</u> <u>to recoat: OK, 24 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Abrasion Resistance	ASTM D 4060	<u>78 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Impact Resistance	ASTM D 2794	<u>pass, 80 in. lb.</u>
Accelerated Weathering	ASTM G 53	<u>Reflectance: 4 unit decrease</u> <u>Gloss: 56 unit decrease</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>fail</u>
Gloss	ASTM D 523	<u>91</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>0.98</u>
Sag Resistance	ASTM D 4400	<u>8</u>

LABORATORY TEST RESULTS

APPENDIX G-9

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE09

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	79.6% by wt.
Density	ASTM D 1475	1.178 g/ml
Viscosity	ASTM D 562	86 KU
Water	ASTM D 4017	0.47% by wt.
VOC	ASTM D 3960	240 g/L
Stability	ASTM D 1849	83 KU
Freeze-Thaw Resistance	ASTM D 2243	not applicable
Hardness	ASTM D 3363	Scratch <6B, Gouge <6B
Blocking Resistance	ASTM D 4946	6
Application Properties	FTMS 141c, 2141.1	good, brushes easily
Adhesion	ASTM D 3359	5B
Dry Time	ASTM D 1640	set-to-touch: 11 hrs., 20 min. dry hard: 21-1/2 hrs. to recoat: OK, 24 hrs.
Appearance	FTMS 141C, 4541	excellent
Abrasion Resistance	ASTM D 4060	57 mg.
Flexibility	ASTM D 522	pass
Impact Resistance	ASTM D 2794	pass, 80 in. lb.
Accelerated Weathering	ASTM G 53	Reflectance: no change Gloss: 56 unit decrease
Fungus Resistance	FTMS 141C, 6271.2	fail
Gloss	ASTM D 523	92
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	0.99
Sag Resistance	ASTM D 4400	4

LABORATORY TEST RESULTS

APPENDIX G-10

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 02-24-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION NFE10

COATING CATEGORY: NON-FLAT EXTERIOR

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>68.6% by wt.</u>
Density	ASTM D 1475	<u>1.237 g/ml</u>
Viscosity	ASTM D 562	<u>96 KU</u>
Water	ASTM D 4017	<u>0.31% by wt.</u>
VOC	ASTM D 3960	<u>388 g/L</u>
Stability	ASTM D 1849	<u>102 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Hardness	ASTM D 3363	<u>Scratch 3B, Gouge B</u>
Blocking Resistance	ASTM D 4946	<u>10</u>
Application Properties	FTMS 141c, 2141.1	<u>good, brushes easily</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 1 hr., 20 min.</u> <u>dry hard: 11 hrs., 20 min.</u> <u>to recoat: OK, 24 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good, trace brush marks</u>
Abrasion Resistance	ASTM D 4060	<u>143 mg.</u>
Flexibility	ASTM D 522	<u>pass</u>
Impact Resistance	ASTM D 2794	<u>pass, 80 in. lb.</u>
Accelerated Weathering	ASTM G 53	<u>Reflectance: 1 unit decrease</u> <u>Gloss: 57 unit decrease</u>
Fungus Resistance	FTMS 141C, 6271.2	<u>pass</u>
Gloss	ASTM D 523	<u>89</u>
Contrast Ratio/Dry Opacity	FTMS 141C, 4121.1	<u>1.00</u>
Sag Resistance	ASTM D 4400	<u>12</u>

TEST	PRIMERS/SEALERS (page 1 of 2)									
	PRS01	PRS02	PRS03	PRS04	PRS05	PRS06	PRS07	PRS08	PRS09	PRS10
VOC (g/L)*	104	82	358	545	414	101	347	109	144	472
Total Non-volatile (% by wt)*	45.6	54.6	74.9	54.1	68.0	20.0	75.7	46.1	42.7	65.0
Density (g/ml)*	1.302	1.300	1.426	1.188	1.294	1.051	1.429	1.304	1.262	1.349
Viscosity (KU)**	93	108	79	62	70	75	84	102	83	91
Water Content (% by wt)	51.8*	42.6*	0.33	4.05	0.17	78.3*	0.08	51.1*	53.6*	0.13
Stability (KU)**	98	fail	68	65	67	72	89	102	85	94
Freeze-Thaw Resistance	98	fail	N/A	N/A	N/A	78	N/A	fail	84	N/A
Application Properties	good	good	good	good (thin)	good	brush-good roller-poor	good	good	good	good
Adhesion	5B	5B	5B	4B	5B	0B	5B	4B	0B	5B
Dry Time: Set-to-touch	5 min.	15 min.	15 min.	5 min.	10 min.	¾ hr.	½ hr.	¼ hr.	½ hr.	2 hrs.
Dry hard	1¼ hrs.	1¼ hrs.	4¾ hrs.	1¼ hrs.	1¾ hrs.	1 hr.	5 hrs.	½ hr.	1 hr.	2-5/6 hrs.
to recoat	OK, 2 hrs.	OK, 2 hrs.	OK, 7 hrs.	OK, 3½ hrs.	OK, 4 hrs.	OK, 24 hrs.	OK, 24 hrs.	OK, 4 hrs.	OK, 4 hrs.	OK, 3 hrs.
Appearance	good; uniform	good; uniform	good; uniform	brush-good; roller-uneven penetration of wallboard	good	brush-good; roller-uneven penetration of wallboard	good	good	good	brush-good; roller-uneven penetration of wallboard
Flexibility, 1/4 inch mandrel	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass
Grain Raising of Wood	slight	slight	slight	no	slight	definite	no	N/A	N/A	slight
Sag Resistance	6	12	6	5	10	6	12	12	12	12
Sanding Properties	satisfactory	satisfactory	satisfactory	satisfactory	satisfactory	fair	satisfactory	N/A	N/A	satisfactory
Enamel Hold Out	8.6	4.0	2.6	3.5	1.0	4.1	2.7	3.8	36.0	4.1
Bleed Resistance	1.9	0.7	1.5	1.0	1.0	0	1.0	1.5	0	0.2
Alkali Resistance	fail	fail	fail	fail	fail	fail	fail	fail	fail	N/A

* tests conducted by Subcontractor 1 on single component samples
 ** tests conducted by Subcontractor 2 on single component samples
 *** exposure tests conducted by Subcontractor 3 on single component samples with evaluation by Contractor

TEST	PRIMERS/SEALERS (page 2 of 2)											
	PRS11	PRS12	PRS13	PRS14	PRS15	PRS16	PRS17	PRS18	PRS19	PRS20		
VOC (g/L)*	60	292	481	<5	153	148	164	331	318	177		
Total Non-volatile (% by wt)*	44.8	37.4	57.1	53.0	53.4	51.6	53.1	75.7	76.1	51.1		
Density (g/ml)*	1.273	1.191	1.122	1.287	1.271	1.269	1.300	1.364	1.332	1.294		
Viscosity (KU)**	102	83	61	108	100	98	106	90	82	114		
Water Content (% by wt)	53.7*	53.8*	0.16	47.7	40.8*	43.1*	41.0*	0.37	0.06	42.8*		
Stability (KU)***	102	82	58	120	101	98	101	94	83	136		
Freeze-Thaw Resistance	102	82	N/A	fail	110	126	106	N/A	N/A	125		
Application Properties	good	good	good	good	brush-good roller-some bubbles	brush-good roller-some bubbles	good	good	good	good		
Adhesion	5B	5B	5B	5B	1B	0B	5B	5B	5B	5B		
Dry Time: Set-to-touch	½ hr.	½ hr.	10 min.	20 min.	25 min.	¾ hr.	35 min.	½ hr.	1½ hrs.	15 min.		
Dry hard	¾ hr.	¾ hr.	35 min.	30 min.	2 hrs.	2 hrs.	1 hr.	20 hrs.	20 hrs.	1 hr.		
to recoat	OK, 4 hrs.	OK, 4 hrs.	OK, 3 hrs.	OK, 4 hrs.	OK, 6 hrs.	OK, 6 hrs.	OK, 16hrs.	OK, 24hrs.	OK, 24hrs.	OK, 4 hrs.		
Appearance	good	brush-good; roller-some lap marks	good	good	brush-good; roller-fair, lap marks present	brush-good; roller-some air entrapment in film	good	fair; trace brush marks, uneven penetration of wallboard	good	good		
Flexibility, 1/4 inch mandrel	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass		
Grain Raising of Wood	slight	slight	no	no	no	no	slight	no	no	slight		
Sag Resistance	12	7	9	12	12	12	12	12	12	12		
Sanding Properties	satisfactory	satisfactory	satisfactory	poor	poor	poor	fair	poor	poor	poor		
Enamel Hold Out	8.7	2.0	5.0	8.0	0	8.0	2.4	2.0	0	2.3		
Bleed Resistance	0.9	2.0	1.1	2.0	1.3	1.5	1.5	0.4	1.2	0.4		
Alkali Resistance	fail	fail	fail	pass	N/A	N/A	fail	N/A	N/A	N/A		

* tests conducted by Subcontractor 1 on single component samples
 ** tests conducted by Subcontractor 2 on single component samples
 *** exposure tests conducted by Subcontractor 3 on single component samples with evaluation by Contractor

LABORATORY TEST RESULTS

APPENDIX H-1

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS01

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>45.6% by wt.</u>
Density	ASTM D 1475	<u>1.302 g/ml</u>
Viscosity	ASTM D 562	<u>93 KU</u>
Water	ASTM D 3792	<u>51.8% by wt.</u>
VOC	ASTM D 3960	<u>104 g/L</u>
Stability	ASTM D 1849	<u>98 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>98 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good; easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 5 min. dry hard: 1-1/4 hrs. to recoat: OK, 2 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good; uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>slight</u>
Sag Resistance	ASTM D 4400	<u>6</u>
Sanding Properties	FTMS 141C, 6321	<u>satisfactory</u>
Enamel Hold Out	TT-E-543	<u>8.6</u>
Bleed Resistance	TT-P-001984	<u>1.9</u>
Alkali Resistance	ASTM D 1308	<u>fail</u>

LABORATORY TEST RESULTS

APPENDIX H-2

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS02

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft pack, mixes readily <u>to homogenous mixture</u>
Total Non-volatile	ASTM D 2369	<u>54.6% by wt.</u>
Density	ASTM D 1475	<u>1.300 g/ml</u>
Viscosity	ASTM D 562	<u>108 KU</u>
Water	ASTM D 3792	<u>42.6% by wt.</u>
VOC	ASTM D 3960	<u>82 g/L</u>
Stability	ASTM D 1849	<u>fail</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>fail</u>
Application Properties	FTMS 141c, 2141.1 and 2112	easily applied by <u>brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 15 min.</u> <u>dry hard: 1-1/4 hr.</u> <u>to recoat: OK, 2 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good; uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>slight</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Sanding Properties	FTMS 141C, 6321	<u>satisfactory</u>
Enamel Hold Out	TT-E-543	<u>4.0</u>
Bleed Resistance	TT-P-001984	<u>0.7</u>
Alkali Resistance	ASTM D 1308	<u>fail</u>

LABORATORY TEST RESULTS

APPENDIX H-3

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS03

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>soft packed, mixes readily to homogenous state</u>
Total Non-volatile	ASTM D 2369	<u>74.9% by wt.</u>
Density	ASTM D 1475	<u>1.426 g/ml</u>
Viscosity	ASTM D 562	<u>79 KU</u>
Water	ASTM D 4017	<u>0.33% by wt.</u>
VOC	ASTM D 3960	<u>358 g/L</u>
Stability	ASTM D 1849	<u>68 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good: easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 15 min. dry hard: 4-3/4 hrs. to recoat: OK, 7 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>slight</u>
Sag Resistance	ASTM D 4400	<u>6</u>
Sanding Properties	FTMS 141C, 6321	<u>satisfactory</u>
Enamel Hold Out	TT-E-543	<u>2.6</u>
Bleed Resistance	TT-P-001984	<u>1.5</u>
Alkali Resistance	ASTM D 1308	<u>fail</u>

LABORATORY TEST RESULTS

APPENDIX H-4

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P- 9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS04

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	54.1% by wt.
Density	ASTM D 1475	1.188 g/ml
Viscosity	ASTM D 562	62 KU
Water	ASTM D 4017	4.05% by wt.
VOC	ASTM D 3960	545 g/L
Stability	ASTM D 1849	65 KU
Freeze-Thaw Resistance	ASTM D 2243	not applicable
Application Properties	FTMS 141c, 2141.1 and 2112	thin, easily applied by brush and roller
Adhesion	ASTM D 3359	4B
Dry Time	ASTM D 1640	set-to-touch: 5 min. dry hard: 1-1/4 hr. to recoat: OK, 3-1/2 hrs.
Appearance	FTMS 141C, 4541	brush: good, uniform roller: uneven penetration of wallboard substrate
Flexibility	ASTM D 522	pass
Grain Raising of Wood	subjective	no
Sag Resistance	ASTM D 4400	5
Sanding Properties	FTMS 141C, 6321	satisfactory
Enamel Hold Out	TT-E-543	3.5
Bleed Resistance	TT-P-001984	1.0
Alkali Resistance	ASTM D 1308	fail

LABORATORY TEST RESULTS

APPENDIX H-5

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS05

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>soft packed, mixes readily to homogenous state</u>
Total Non-volatile	ASTM D 2369	<u>68.0% by wt.</u>
Density	ASTM D 1475	<u>1.294 g/ml</u>
Viscosity	ASTM D 562	<u>70 KU</u>
Water	ASTM D 4017	<u>0.17% by wt.</u>
VOC	ASTM D 3960	<u>414 g/L</u>
Stability	ASTM D 1849	<u>67 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good, easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 10 min. dry hard: 1-3/4 hr. to recoat: OK, 4 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>slight</u>
Sag Resistance	ASTM D 4400	<u>10</u>
Sanding Properties	FTMS 141C, 6321	<u>satisfactory</u>
Enamel Hold Out	TT-E-543	<u>1.0</u>
Bleed Resistance	TT-P-001984	<u>1.0</u>
Alkali Resistance	ASTM D 1308	<u>fail</u>

LABORATORY TEST RESULTS

APPENDIX H-6

CLIENT CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS06

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily <u>to homogenous state</u>
Total Non-volatile	ASTM D 2369	<u>20.0% by wt.</u>
Density	ASTM D 1475	<u>1.051 g/ml</u>
Viscosity	ASTM D 562	<u>75 KU</u>
Water	ASTM D 3792	<u>78.3% by wt.</u>
VOC	ASTM D 3960	<u>101 g/L</u>
Stability	ASTM D 1849	<u>72 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>78 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2112	brush: good, easily applied roller: <u>poor, drags & sticks</u>
Adhesion	ASTM D 3359	<u>0B</u>
Dry Time	ASTM D 1640	set-to-touch: <u>3/4 hr.</u> dry hard: <u>1 hr.</u> to recoat: <u>OK, 24 hrs.</u>
Appearance	FTMS 141C, 4541	brush: <u>good, uniform</u> roller: <u>uneven penetration of wallboard substrate</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>definite</u>
Sag Resistance	ASTM D 4400	<u>6</u>
Sanding Properties	FTMS 141C, 6321	<u>fair</u>
Enamel Hold Out	TT-E-543	<u>4.1</u>
Bleed Resistance	TT-P-001984	<u>0</u>
Alkali Resistance	ASTM D 1308	<u>fail</u>

LABORATORY TEST RESULTS

APPENDIX H-7

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS07

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	75.7% by wt.
Density	ASTM D 1475	1.429 g/ml
Viscosity	ASTM D 562	84 KU
Water	ASTM D 4017	0.08% by wt.
VOC	ASTM D 3960	347 g/L
Stability	ASTM D 1849	89 KU
Freeze-Thaw Resistance	ASTM D 2243	not applicable
Application Properties	FTMS 141c, 2141.1 and 2112	good: easily applied by brush and roller
Adhesion	ASTM D 3359	5B
Dry Time	ASTM D 1640	set-to-touch: 1/2 hr. dry hard: 5 hrs. to recoat: OK, 24 hrs.
Appearance	FTMS 141C, 4541	good: trace brush marks
Flexibility	ASTM D 522	pass
Grain Raising of Wood	subjective	no
Sag Resistance	ASTM D 4400	12
Sanding Properties	FTMS 141C, 6321	satisfactory
Enamel Hold Out	TT-E-543	2.7
Bleed Resistance	TT-P-001984	1.0
Alkali Resistance	ASTM D 1308	fail

LABORATORY TEST RESULTS

APPENDIX H-8

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS08

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>46.1% by wt.</u>
Density	ASTM D 1475	<u>1.304 g/ml</u>
Viscosity	ASTM D 562	<u>102 KU</u>
Water	ASTM D 3792	<u>51.1% by wt.</u>
VOC	ASTM D 3960	<u>109 g/L</u>
Stability	ASTM D 1849	<u>102 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>fail</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good: easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>4B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 1/4 hr. dry hard: 1/2 hr. to recoat: OK, 4 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>not applicable</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Sanding Properties	FTMS 141C, 6321	<u>not applicable</u>
Enamel Hold Out	TT-E-543	<u>3.8</u>
Bleed Resistance	TT-P-001984	<u>1.5</u>
Alkali Resistance	ASTM D 1308	<u>fails</u>

LABORATORY TEST RESULTS

APPENDIX H-9

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS09

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily <u>to homogenous state</u>
Total Non-volatile	ASTM D 2369	<u>42.7% by wt.</u>
Density	ASTM D 1475	<u>1.262 g/ml</u>
Viscosity	ASTM D 562	<u>83 KU</u>
Water	ASTM D 3792	<u>53.6% by wt.</u>
VOC	ASTM D 3960	<u>144 g/L</u>
Stability	ASTM D 1849	<u>85 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>84 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2112	good: easily applied by <u>brush and roller</u>
Adhesion	ASTM D 3359	<u>0B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 1/2 hr.</u> <u>dry hard: 1 hr.</u> <u>to recoat: OK, 4 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>not applicable</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Sanding Properties	FTMS 141C, 6321	<u>not applicable</u>
Enamel Hold Out	TT-E-543	<u>36.0</u>
Bleed Resistance	TT-P-001984	<u>0</u>
Alkali Resistance	ASTM D 1308	<u>fail</u>

LABORATORY TEST RESULTS

APPENDIX H-10

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS10

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily <u>to homogenous state</u>
Total Non-volatile	ASTM D 2369	<u>65.0% by wt.</u>
Density	ASTM D 1475	<u>1.349 g/ml</u>
Viscosity	ASTM D 562	<u>91 KU</u>
Water	ASTM D 4017	<u>0.13% by wt.</u>
VOC	ASTM D 3960	<u>472 g/L</u>
Stability	ASTM D 1849	<u>94 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Application Properties	FTMS 141c, 2141.1 and 2112	good: easily applied by <u>brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 2 hrs.</u> <u>dry hard: 2 hrs., 50 min.</u> <u>to recoat: OK, 3 hrs.</u>
Appearance	FTMS 141C, 4541	<u>brush: good, uniform</u> <u>roller: uneven penetration</u> <u>of wallboard substrate</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>slight</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Sanding Properties	FTMS 141C, 6321	<u>satisfactory</u>
Enamel Hold Out	TT-E-543	<u>4.1</u>
Bleed Resistance	TT-P-001984	<u>0.2</u>
Alkali Resistance	ASTM D 1308	<u>not applicable</u>

LABORATORY TEST RESULTS

APPENDIX H-11

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS11

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>44.8% by wt.</u>
Density	ASTM D 1475	<u>1.273 g/ml</u>
Viscosity	ASTM D 562	<u>102 KU</u>
Water	ASTM D 3792	<u>53.7% by wt.</u>
VOC	ASTM D 3960	<u>60 g/L</u>
Stability	ASTM D 1849	<u>102 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>102 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good: easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 1/2 hr. dry hard: 3/4 hr. to recoat: OK, 4 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>slight</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Sanding Properties	FTMS 141C, 6321	<u>satisfactory</u>
Enamel Hold Out	TT-E-543	<u>8.7</u>
Bleed Resistance	TT-P-001984	<u>0.9</u>
Alkali Resistance	ASTM D 1308	<u>fails</u>

LABORATORY TEST RESULTS

APPENDIX H-12

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS12

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	37.4% by wt.
Density	ASTM D 1475	1.191 g/ml
Viscosity	ASTM D 562	83 KU
Water	ASTM D 3792	53.8% by wt.
VOC	ASTM D 3960	292 g/L
Stability	ASTM D 1849	82 KU
Freeze-Thaw Resistance	ASTM D 2243	82 KU
Application Properties	FTMS 141c, 2141.1 and 2112	good: easily applied by brush and roller
Adhesion	ASTM D 3359	5B
Dry Time	ASTM D 1640	set-to-touch: 1/2 hr. dry hard: 3/4 hr. to recoat: OK, 4 hrs.
Appearance	FTMS 141C, 4541	brush: good, uniform roller: fair, some lap marks
Flexibility	ASTM D 522	pass
Grain Raising of Wood	subjective	slight
Sag Resistance	ASTM D 4400	7
Sanding Properties	FTMS 141C, 6321	satisfactory
Enamel Hold Out	TT-E-543	2.0
Bleed Resistance	TT-P-001984	2.0
Alkali Resistance	ASTM D 1308	fail

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206CONTRACT NO. 92-339SAMPLE IDENTIFICATION PRS13

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	57.1% by wt.
Density	ASTM D 1475	1.122 g/ml
Viscosity	ASTM D 562	61 KU
Water	ASTM D 4017	0.16% by wt.
VOC	ASTM D 3960	481 g/L
Stability	ASTM D 1849	58 KU
Freeze-Thaw Resistance	ASTM D 2243	not applicable
Application Properties	FTMS 141c, 2141.1 and 2112	good: easily applied by brush and roller
Adhesion	ASTM D 3359	5B
Dry Time	ASTM D 1640	set-to-touch: 10 min. dry hard: 35 min. to recoat: OK, 3 hrs.
Appearance	FTMS 141C, 4541	good: uniform
Flexibility	ASTM D 522	pass
Grain Raising of Wood	subjective	none
Sag Resistance	ASTM D 4400	9
Sanding Properties	FTMS 141C, 6321	satisfactory
Enamel Hold Out	TT-E-543	5.0
Bleed Resistance	TT-P-001984	1.1
Alkali Resistance	ASTM D 1308	fail

LABORATORY TEST RESULTS

APPENDIX H-14

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS14

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>53.0% by wt.</u>
Density	ASTM D 1475	<u>1.287 g/ml</u>
Viscosity	ASTM D 562	<u>108 KU</u>
Water	ASTM D 3792	<u>47.7% by wt.</u>
VOC	ASTM D 3960	<u><5 g/L</u>
Stability	ASTM D 1849	<u>120 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>fail</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good: easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 20 min.</u> <u>dry hard: 30 min.</u> <u>to recoat: OK, 4 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good, uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>no</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Sanding Properties	FTMS 141C, 6321	<u>poor</u>
Enamel Hold Out	TT-E-543	<u>8.0</u>
Bleed Resistance	TT-P-001984	<u>2.0</u>
Alkali Resistance	ASTM D 1308	<u>pass</u>

LABORATORY TEST RESULTS

APPENDIX H-15

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS15

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>53.4% by wt.</u>
Density	ASTM D 1475	<u>1.271 g/ml</u>
Viscosity	ASTM D 562	<u>100 KU</u>
Water	ASTM D 3792	<u>40.8% by wt.</u>
VOC	ASTM D 3960	<u>153 g/L</u>
Stability	ASTM D 1849	<u>101 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>110 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>brush: good, easy application</u> <u>roller: some bubbles in film</u>
Adhesion	ASTM D 3359	<u>1B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 25 min.</u> <u>dry hard: 2 hrs.</u> <u>to recoat: OK, 6 hrs.</u>
Appearance	FTMS 141C, 4541	<u>brush: good, uniform</u> <u>roller: fair, lap marks present</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>no</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Sanding Properties	FTMS 141C, 6321	<u>poor</u>
Enamel Hold Out	TT-E-543	<u>0</u>
Bleed Resistance	TT-P-001984	<u>1.3</u>
Alkali Resistance	ASTM D 1308	<u>not applicable</u>

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206CONTRACT NO. 92-339SAMPLE IDENTIFICATION PRS16

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	51.6% by wt.
Density	ASTM D 1475	1.269 g/ml
Viscosity	ASTM D 562	98 KU
Water	ASTM D 3792	43.1% by wt.
VOC	ASTM D 3960	148 g/L
Stability	ASTM D 1849	98 KU
Freeze-Thaw Resistance	ASTM D 2243	126 KU
Application Properties	FTMS 141c, 2141.1 and 2112	brush: good, easy application roller: good, easy application bubbles evident in wet film
Adhesion	ASTM D 3359	0B
Dry Time	ASTM D 1640	set-to-touch: 45 min. dry hard: 2 hrs. to recoat: OK, 6 hrs.
Appearance	FTMS 141C, 4541	brush: good, uniform roller: some craters (air entrapment) in dried film
Flexibility	ASTM D 522	pass
Grain Raising of Wood	subjective	no
Sag Resistance	ASTM D 4400	12
Sanding Properties	FTMS 141C, 6321	poor
Enamel Hold Out	TT-E-543	8.0
Bleed Resistance	TT-P-001984	1.5
Alkali Resistance	ASTM D 1308	not applicable

LABORATORY TEST RESULTS

APPENDIX H-17

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS17

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft to dry packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	53.1% by wt.
Density	ASTM D 1475	1.300 g/ml
Viscosity	ASTM D 562	106 KU
Water	ASTM D 3792	41.0% by wt.
VOC	ASTM D 3960	164 g/L
Stability	ASTM D 1849	101 KU
Freeze-Thaw Resistance	ASTM D 2243	106 KU
Application Properties	FTMS 141c, 2141.1 and 2112	good: easily applied by brush and roller
Adhesion	ASTM D 3359	5B
Dry Time	ASTM D 1640	set-to-touch: 35 min. dry hard: 1 hr. to recoat: OK, 16 hrs.
Appearance	FTMS 141C, 4541	good: uniform
Flexibility	ASTM D 522	pass
Grain Raising of Wood	subjective	slight
Sag Resistance	ASTM D 4400	12
Sanding Properties	FTMS 141C, 6321	fair
Enamel Hold Out	TT-E-543	2.4
Bleed Resistance	TT-P-001984	1.5
Alkali Resistance	ASTM D 1308	fail

LABORATORY TEST RESULTS

APPENDIX H-18

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS18

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	75.7% by wt.
Density	ASTM D 1475	1.364 g/ml
Viscosity	ASTM D 562	90 KU
Water	ASTM D 4017	0.37% by wt.
VOC	ASTM D 3960	331 g/L
Stability	ASTM D 1849	94 KU
Freeze-Thaw Resistance	ASTM D 2243	not applicable
Application Properties	FTMS 141c, 2141.1 and 2112	good: easily applied by brush and roller
Adhesion	ASTM D 3359	5B
Dry Time	ASTM D 1640	set-to-touch: 1/2 hr. dry hard: 20 hrs. to recoat: OK, 24 hrs.
Appearance	FTMS 141C, 4541	fair: uneven penetration of wallboard, trace brush marks
Flexibility	ASTM D 522	pass
Grain Raising of Wood	subjective	no
Sag Resistance	ASTM D 4400	12
Sanding Properties	FTMS 141C, 6321	poor (soft 16 hrs)
Enamel Hold Out	TT-E-543	2.0
Bleed Resistance	TT-P-001984	0.4
Alkali Resistance	ASTM D 1308	not applicable

LABORATORY TEST RESULTS

APPENDIX H-19

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS19

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	76.1% by wt.
Density	ASTM D 1475	1.332 g/ml
Viscosity	ASTM D 562	82 KU
Water	ASTM D 4017	0.06% by wt.
VOC	ASTM D 3960	318 g/L
Stability	ASTM D 1849	83 KU
Freeze-Thaw Resistance	ASTM D 2243	not applicable
Application Properties	FTMS 141c, 2141.1 and 2112	good: easily applied by brush and roller
Adhesion	ASTM D 3359	5B
Dry Time	ASTM D 1640	set-to-touch: 1-1/2 hr. dry hard: 20 hrs. to recoat: OK, 24 hrs.
Appearance	FTMS 141C, 4541	good: uniform
Flexibility	ASTM D 522	pass
Grain Raising of Wood	subjective	no
Sag Resistance	ASTM D 4400	12
Sanding Properties	FTMS 141C, 6321	poor (soft, 16 hrs.)
Enamel Hold Out	TT-E-543	0
Bleed Resistance	TT-P-001984	1.2
Alkali Resistance	ASTM D 1308	not applicable

LABORATORY TEST RESULTS

APPENDIX H-20

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION PRS20

COATING CATEGORY: PRIMERS/SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>51.1% by wt.</u>
Density	ASTM D 1475	<u>1.294 g/ml</u>
Viscosity	ASTM D 562	<u>114 KU</u>
Water	ASTM D 3792	<u>42.8% by wt.</u>
VOC	ASTM D 3960	<u>177 g/L</u>
Stability	ASTM D 1849	<u>136 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>125 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2112	<u>good: easily applied by brush and roller</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 15 min. dry hard: 1 hr. to recoat: OK, 4 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: uniform</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>slight</u>
Sag Resistance	ASTM D 4400	<u>12</u>
Sanding Properties	FTMS 141C, 6321	<u>poor</u>
Enamel Hold Out	TT-E-543	<u>2.3</u>
Bleed Resistance	TT-P-001984	<u>0.4</u>
Alkali Resistance	ASTM D 1308	<u>not applicable</u>

TEST	SANDING SEALERS				
	SSE01	SSE02	SSE03	SSE04	SSE05
VOC (g/L)	214	482	506	207	304
Total Non-volatile (% by wt)	20.1	43.7	40.1	35.7	23.1
Density (g/ml)	1.022	0.857	0.845	1.070	1.035
Viscosity (KU)	54	55	53	57	55
Water Content (% by wt)	75.0	0.10	0.04	56.7	68.3
Stability (KU)	63	55	53	57	fail
Freeze-Thaw Resistance (KU)	63	N/A	N/A	57	55
Application Properties	fair, some bubbling	satisfactory	satisfactory	satisfactory	fair, some bubbling
Grain raising of wood	no	no	no	slight	slight
Adhesion	5B	5B	5B	3B	4B
Dry Time: Set-to-touch	½ hr.	½ hr.	10 min.	½ hr.	¾ hrs.
Dry hard	1½ hrs.	1½ hrs.	¾ hr.	1½ hrs.	24 hrs.
to recoat	OK, 4 hrs.	OK, 2 hrs.	OK, 3 hrs.	OK, 4 hrs.	OK, 24 hrs.
Appearance	good, some bubbles in film	satisfactory	satisfactory	satisfactory	good
Flexibility	pass	fail	fail	fail	fail
Sanding Properties	satisfactory	excellent	excellent	fair, gums paper	satisfactory

LABORATORY TEST RESULTS

APPENDIX I-1

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 12-07-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION SSE01

COATING CATEGORY: SANDING SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogeneous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>20.1% by wt.</u>
Density	ASTM D 1475	<u>1.022 g/ml</u>
Viscosity	ASTM D 562	<u>54 KU</u>
Water	ASTM D 3792	<u>75.0% by wt.</u>
VOC	ASTM D 3960	<u>214 g/L</u>
Stability	ASTM D 1849	<u>63 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>63 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>fair - bubbles apparent in brush and spray applications</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 1/2 hr. dry hard: 1-1/2 hr. to recoat: OK, 4 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good: some bubbles in film</u>
Flexibility	ASTM D 522	<u>pass</u>
Grain Raising of Wood	subjective	<u>no</u>
Sanding Properties	FTMS 141C, 6321	<u>satisfactory</u>

LABORATORY TEST RESULTS

APPENDIX I-2

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 12-07-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION SSE02

COATING CATEGORY: SANDING SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	43.7% by wt.
Density	ASTM D 1475	0.857 g/ml
Viscosity	ASTM D 562	55 KU
Water	ASTM D 4017	0.10 % by wt.
VOC	ASTM D 3960	482 g/L
Stability	ASTM D 1849	55 KU
Freeze-Thaw Resistance	ASTM D 2243	not applicable
Application Properties	FTMS 141c, 2141.1 and 2131.1	satisfactory
Adhesion	ASTM D 3359	5B
Dry Time	ASTM D 1640	set-to-touch: 1/2 hr. dry hard: 1-1/2 hr. to recoat: OK, 2 hrs.
Appearance	FTMS 141C, 4541	satisfactory
Flexibility	ASTM D 522	fail
Grain Raising of Wood	subjective	no
Sanding Properties	FTMS 141C, 6321	excellent

LABORATORY TEST RESULTS

CLIENT CALIFORNIA AIR RESOURCES BOARD DATE RECD 12-07-94 OUR FILE P - 9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION SSE03

COATING CATEGORY: SANDING SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily <u>to homogenous state</u>
Total Non-volatile	ASTM D 2369	<u>40.1% by wt.</u>
Density	ASTM D 1475	<u>0.845 g/ml</u>
Viscosity	ASTM D 562	<u>53 KU</u>
Water	ASTM D 4017	<u>0.04% by wt.</u>
VOC	ASTM D 3960	<u>506 g/L</u>
Stability	ASTM D 1849	<u>53 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>not applicable</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>satisfactory</u>
Adhesion	ASTM D 3359	<u>5B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 10 min.</u> <u>dry hard: 3/4 hr.</u> <u>to recoat: OK, 3 hrs.</u>
Appearance	FTMS 141C, 4541	<u>satisfactory</u>
Flexibility	ASTM D 522	<u>fail</u>
Grain Raising of Wood	subjective	<u>no</u>
Sanding Properties	FTMS 141C, 6321	<u>excellent</u>

LABORATORY TEST RESULTS**APPENDIX I-4**CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 12-07-94 OUR FILE: P-9206CONTRACT NO. 92-339SAMPLE IDENTIFICATION SSE04**COATING CATEGORY: SANDING SEALERS**

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>35.7% by wt.</u>
Density	ASTM D 1475	<u>1.070 g/ml</u>
Viscosity	ASTM D 562	<u>57 KU</u>
Water	ASTM D 3792	<u>56.7% by wt.</u>
VOC	ASTM D 3960	<u>207 g/L</u>
Stability	ASTM D 1849	<u>57 KU</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>57 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>satisfactory</u>
Adhesion	ASTM D 3359	<u>3B</u>
Dry Time	ASTM D 1640	<u>set-to-touch: 1/2 hr.</u> <u>dry hard: 1-1/2 hr.</u> <u>to recoat: OK, 4 hrs.</u>
Appearance	FTMS 141C, 4541	<u>satisfactory</u>
Flexibility, 6.4mm mandrel	ASTM D 522	<u>fail</u>
Grain Raising of Wood	subjective	<u>slight</u>
Sanding Properties	FTMS 141C, 6321	<u>fair, gums paper</u>

LABORATORY TEST RESULTS

APPENDIX I-5

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 12-07-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION SSE05

COATING CATEGORY: SANDING SEALERS

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, mixes readily</u>
Total Non-volatile	ASTM D 2369	<u>23.1% by wt.</u>
Density	ASTM D 1475	<u>1.035 g/ml</u>
Viscosity	ASTM D 562	<u>55 KU</u>
Water	ASTM D 3792	<u>68.3% by wt.</u>
VOC	ASTM D 3960	<u>304 g/L</u>
Stability	ASTM D 1849	<u>fail</u>
Freeze-Thaw Resistance	ASTM D 2243	<u>55 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>fair, bubbles in application by brush and spray</u>
Adhesion	ASTM D 3359	<u>4B</u>
Dry Time ¹	ASTM D 1640	<u>set-to-touch: 40 min. dry hard: 24 hrs. to recoat: OK, 24 hrs.</u>
Appearance	FTMS 141C, 4541	<u>good</u>
Flexibility ¹	ASTM D 522	<u>fail</u>
Grain Raising of Wood	subjective	<u>slight</u>
Sanding Properties	FTMS 141C, 6321	<u>satisfactory</u>

¹ material crawls when applied to glass/metal test panels

WATERPROOFING SEALERS for WOOD (page 1 of 2)							
TEST	WPS01	WPS02	WPS03	WPS04	WPS05	WPS06	WPS07
VOC (g/L)*	220	582	224	367	256	179	343
Total Non-volatile (% by wt)*	9.9	31.8	7.6	57.3	21.0	9.2	10.5
Density (g/ml)*	0.982	0.853	0.983	0.860	0.959	1.000	0.954
Viscosity (KU)**	54	<53	55	55	53	55	54
Water Content (% by wt)	86.8*	0.05	89.7*	0.05	70.3*	88.8*	81.5*
Stability (KU)***	55	53	55	53	53	55	55
Application Properties	easily applied by brush	easily applied by brush	easily applied by brush	easily applied by brush	easily applied by brush	easily applied by brush	easily applied by brush
Appearance	milky white, dries clear; wood light amber in color	light amber, dries clear; wood light amber in color	reddish brown soln., dries clear; wood color amber with red tint	linseed oil, dries clear; wood yellow in color	milky white, dries clear; wood light yellow in color	milky white, dries clear; no change in wood color	milky white, dries clear; no change in wood color
Accelerated Weathering, 300 hours Visual evaluation	wood darkens with some cracking in exposed area	wood darkens, cracking of wood in exposed area	wood darkens with some cracking in exposed area	wood darkens with some cracking in exposed area	wood darkens, some cracking & white spotting in exposed area	wood darkens, some cracking in exposed area	wood darkens, some cracking in exposed area
Water repellency	good	fair	good	good	fair	good	good
Water Repellency	excellent	excellent	excellent	excellent	excellent	excellent	good

* tests conducted by Subcontractor 1 on single component samples
 ** tests conducted by Subcontractor 2 on single component samples
 *** exposure tests conducted by Subcontractor 3 on single component samples with evaluation by Contractor

WATERPROOFING SEALERS for CONCRETE (page 2 of 2)									
TEST	WPS08a/b	WPS09c	WPS10	WPS11	WPS12	WPS13	WPS14	WPS15	
VOC (g/L)*	144	240	302	135	91	282	766	196	
Total Non-volatile (% by wt)*	8.9	5.8	25.7	3.0	3.8	12.9	4.9	11.0	
Density (g/ml)*	1.000	1.001	0.940	0.998	0.998	0.972	0.805	0.983	
Viscosity (KU)**	53	<53	53	<53	<53	54	<53	<53	
Water Content (% by wt)	89.6	92.4	60.4*	96.5	95.8*	80.9	0.02	85.9*	
Stability (KU)***	53	N/A	53	<53	53	54	53	<53	
Application Properties	easily applied by brush and spray	easily applied by brush and spray	easily applied by brush and spray	easily applied by brush and spray	easily applied by brush and spray	easily applied by brush and spray	easily applied by brush and spray	easily applied by brush and spray	easily applied by brush and spray
Appearance	milky white, dries clear; no change in color of concrete	clear mixture, dries clear; no change in color of concrete	milky white, dries clear; no change in color of concrete	clear liquid, dries clear; no change in color of concrete	clear liquid, dries clear; no change in color of concrete	clear liquid, dries clear; no change in color of concrete	clear liquid, dries clear; no change in color of concrete	clear liquid, dries clear; no change in color of concrete	clear liquid, dries clear; no change in color of concrete
Accelerated Weathering, 300 hours Visual evaluation	no change	no change	no change	no change	no change	no change	no change	no change	no change
Water repellency	excellent	fair	poor	poor	poor	good	fair	fair	fair
Water Repellency	excellent	excellent	fair	good	excellent	good	excellent	excellent	excellent
Water Absorption	pass	pass	pass	fail	fail	pass	pass	fail	fail
Wind Driven Rain	fail, 1 hr.	fail, 1 hr.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

a/b two component sample
c liquid concentrate
* tests conducted by Subcontractor 1 on single component samples
** tests conducted by Subcontractor 2 on single component samples
*** exposure tests conducted by Subcontractor 3 on single component samples with evaluation by Contractor

LABORATORY TEST RESULTS

APPENDIX J-1

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS01

COATING CATEGORY: WATERPROOFING SEALERS (for wood)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, milky solution</u>
Total Non-volatile	ASTM D 2369	<u>9.9% by wt.</u>
Density	ASTM D 1475	<u>0.982 g/ml</u>
Viscosity	ASTM D 562	<u>54 KU</u>
Water	ASTM D 3792	<u>86.8% by wt.</u>
VOC	ASTM D 3960	<u>220 g/L</u>
Stability	ASTM D 1849	<u>55 KU</u>
Application Properties	FTMS 141c, 2141.1	<u>easily applied by brush</u>
Appearance	FTMS 141C, 4541	<u>milky white, dries clear; wood becomes light amber in color</u>
Accelerated Weathering	ASTM G 53	<u>wood darkens, some cracking of wood in exposed area; water repellency: good</u>
Water Repellency	ASTM D 1308	<u>excellent</u>

LABORATORY TEST RESULTS

APPENDIX J-2

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS02

COATING CATEGORY: WATERPROOFING SEALERS (for wood)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, transparent liquid</u>
Total Non-volatile	ASTM D 2369	<u>31.8% by wt.</u>
Density	ASTM D 1475	<u>0.853 g/ml</u>
Viscosity	ASTM D 562	<u><53 KU</u>
Water	ASTM D 4017	<u>0.05% by wt.</u>
VOC	ASTM D 3960	<u>582 g/L</u>
Stability	ASTM D 1849	<u>53 KU</u>
Application Properties	FTMS 141c, 2141.1	<u>easily applied by brush</u>
Appearance	FTMS 141C, 4541	<u>light amber, dries clear; wood becomes light amber in color</u>
Accelerated Weathering	ASTM G 53	<u>wood darkens, cracking of wood in exposed area; water repellency: fair</u>
Water Repellency	ASTM D 1308	<u>excellent</u>

LABORATORY TEST RESULTS

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206CONTRACT NO. 92-339SAMPLE IDENTIFICATION WPS03

COATING CATEGORY: WATERPROOFING SEALERS (for wood)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	soft packed, mixes readily to homogenous state
Total Non-volatile	ASTM D 2369	7.6% by wt.
Density	ASTM D 1475	0.983 g/ml
Viscosity	ASTM D 562	55 KU
Water	ASTM D 3792	89.7% by wt.
VOC	ASTM D 3960	224 g/L
Stability	ASTM D 1849	55 KU
Application Properties	FTMS 141c, 2141.1	easily applied by brush
Appearance	FTMS 141C, 4541	reddish brown soln., dries clear; wood color amber with red tint
Accelerated Weathering	ASTM G 53	wood darkens, some cracking of wood in exposed area; water repellency: good
Water Repellency	ASTM D 1308	excellent

LABORATORY TEST RESULTS

APPENDIX J-4

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS04

COATING CATEGORY: WATERPROOFING SEALERS (for wood)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, transparent liquid</u>
Total Non-volatile	ASTM D 2369	<u>57.3% by wt.</u>
Density	ASTM D 1475	<u>0.860 g/ml</u>
Viscosity	ASTM D 562	<u>55 KU</u>
Water	ASTM D 4017	<u>0.05% by wt.</u>
VOC	ASTM D 3960	<u>367 g/L</u>
Stability	ASTM D 1849	<u>53 KU</u>
Application Properties	FTMS 141c, 2141.1	<u>easily applied by brush</u>
Appearance	FTMS 141C, 4541	<u>linseed oil, dries clear; wood becomes yellow in color</u>
Accelerated Weathering	ASTM G 53	<u>wood darkens, some cracking of wood in exposed area; water repellency: good</u>
Water Repellency	ASTM D 1308	<u>excellent</u>

LABORATORY TEST RESULTS

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206CONTRACT NO. 92-339SAMPLE IDENTIFICATION WPS05

COATING CATEGORY: WATERPROOFING SEALERS (for wood)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, milky solution</u>
Total Non-volatile	ASTM D 2369	<u>21.0% by wt.</u>
Density	ASTM D 1475	<u>0.959 g/ml</u>
Viscosity	ASTM D 562	<u>53 KU</u>
Water	ASTM D 3792	<u>70.3% by wt.</u>
VOC	ASTM D 3960	<u>256 g/L</u>
Stability	ASTM D 1849	<u>53 KU</u>
Application Properties	FTMS 141c, 2141.1	<u>easily applied by brush</u>
Appearance	FTMS 141C, 4541	<u>milky white, dries clear; wood becomes light yellow in color</u>
Accelerated Weathering	ASTM G 53	<u>wood darkens, some cracking & white spotting in exposed area</u> <u>water repellency: fair</u>
Water Repellency	ASTM D 1308	<u>excellent</u>

LABORATORY TEST RESULTS

APPENDIX J-6

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS06

COATING CATEGORY: WATERPROOFING SEALERS (for wood)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, milky solution</u>
Total Non-volatile	ASTM D 2369	<u>9.2% by wt.</u>
Density	ASTM D 1475	<u>1.000 g/ml</u>
Viscosity	ASTM D 562	<u>55 KU</u>
Water	ASTM D 3792	<u>88.8% by wt.</u>
VOC	ASTM D 3960	<u>179 g/L</u>
Stability	ASTM D 1849	<u>55 KU</u>
Application Properties	FTMS 141c, 2141.1	<u>easily applied by brush</u>
Appearance	FTMS 141C, 4541	<u>milky white, dries clear; no change in wood color</u>
Accelerated Weathering	ASTM G 53	<u>wood darkens, some cracking of wood in exposed area; water repellency: good</u>
Water Repellency	ASTM D 1308	<u>excellent</u>

LABORATORY TEST RESULTS

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206CONTRACT NO. 92-339SAMPLE IDENTIFICATION WPS07

COATING CATEGORY: WATERPROOFING SEALERS (for wood)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, milky solution</u>
Total Non-volatile	ASTM D 2369	<u>10.5% by wt.</u>
Density	ASTM D 1475	<u>0.954 g/ml</u>
Viscosity	ASTM D 562	<u>54 KU</u>
Water	ASTM D 3792	<u>81.5% by wt.</u>
VOC	ASTM D 3960	<u>343 g/L</u>
Stability	ASTM D 1849	<u>55 KU</u>
Application Properties	FTMS 141c, 2141.1	<u>easily applied by brush</u>
Appearance	FTMS 141C, 4541	<u>milky white, dries clear; no change in wood color</u>
Accelerated Weathering	ASTM G 53	<u>wood darkens, some cracking of wood in exposed area; water repellency: good</u>
Water Repellency	ASTM D 1308	<u>good</u>

LABORATORY TEST RESULTS

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206CONTRACT NO. 92-339SAMPLE IDENTIFICATION WPS08a/b

COATING CATEGORY: WATERPROOFING SEALERS (for concrete)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT, AS APPLIED</u>
Condition in Container	ASTM D 3925	<u>Part A: homogenous, milky soln</u> <u>Part B: homogenous, milky soln</u>
Total Non-volatile	ASTM D 2369	<u>8.9% by wt.</u>
Density	ASTM D 1475	<u>1.000 g/ml</u>
Viscosity	ASTM D 562	<u>53 KU</u>
Water	ASTM D 3792	<u>89.6% by wt.</u>
VOC	ASTM D 3960	<u>144 g/L</u>
Stability	ASTM D 1849	<u>53 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>easily applied by brush and spray</u>
Appearance	FTMS 141C, 4541	<u>milky white, dries clear no change in color of concrete</u>
Accelerated Weathering	ASTM G 53	<u>no visual change; water repellency: excellent</u>
Water Repellency	ASTM D 1308	<u>excellent</u>
Water Absorption	SS-W-110b	<u>pass (0.67% by wt.)</u>
Wind Driven Rain	TT-C-555B	<u>fail, 1 hr.</u>

LABORATORY TEST RESULTS

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206CONTRACT NO. 92-339SAMPLE IDENTIFICATION WPS09

COATING CATEGORY: WATERPROOFING SEALERS (for concrete)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT, AS APPLIED</u>
Condition in Container	ASTM D 3925	<u>clear concentrate solution</u>
Total Non-volatile	ASTM D 2369	<u>5.8% by wt.</u>
Density	ASTM D 1475	<u>1.001 g/ml</u>
Viscosity	ASTM D 562	<u>< 53 KU</u>
Water	ASTM D 3792	<u>92.4% by wt.</u>
VOC	ASTM D 3960	<u>240 g/L</u>
Stability	ASTM D 1849	<u>not applicable</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>easily applied by brush and spray</u>
Appearance	FTMS 141C, 4541	<u>clear mixture, dries clear no change in color of concrete</u>
Accelerated Weathering	ASTM G 53	<u>no visual change water repellency: fair</u>
Water Repellency	ASTM D 1308	<u>excellent</u>
Water Absorption	SS-W-110b	<u>pass (0.94% by wt.)</u>
Wind Driven Rain	TT-C-555B	<u>fail, 1 hr.</u>

LABORATORY TEST RESULTS

APPENDIX J-10

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS10

COATING CATEGORY: WATERPROOFING SEALERS (for concrete)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, milky solution</u>
Total Non-volatile	ASTM D 5095	<u>25.7% by wt.</u>
Density	ASTM D 1475	<u>0.940 g/ml</u>
Viscosity	ASTM D 562	<u>53 KU</u>
Water	ASTM D 3792	<u>60.4% by wt.</u>
VOC	ASTM D 3960	<u>302 g/L</u>
Stability	ASTM D 1849	<u>53 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>easily applied by brush and spray</u>
Appearance	FTMS 141C, 4541	<u>milky white liquid, dries clear no change in color of concrete</u>
Accelerated Weathering	ASTM G 53	<u>no visual change water repellency: poor</u>
Water Repellency	ASTM D 1308	<u>fair</u>
Water Absorption	SS-W-110b	<u>pass (0.63% by wt.)</u>

LABORATORY TEST RESULTS

APPENDIX J-11

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS11

COATING CATEGORY: WATERPROOFING SEALERS (for concrete)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>clear water white solution</u>
Total Non-volatile	ASTM D 2369	<u>3.0% by wt.</u>
Density	ASTM D 1475	<u>0.998 g/ml</u>
Viscosity	ASTM D 562	<u>< 53 KU</u>
Water	ASTM D 4017	<u>96.5% by wt.</u>
VOC	ASTM D 3960	<u>135 g/L</u>
Stability	ASTM D 1849	<u>< 53 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>easily applied by brush and spray</u>
Appearance	FTMS 141C, 4541	<u>clear liquid, dries clear no change in color of concrete</u>
Accelerated Weathering	ASTM G 53	<u>no visual change water repellency: poor</u>
Water Repellency	ASTM D 1308	<u>good</u>
Water Absorption	SS-W-110b	<u>fail (2.9% by wt.)</u>

LABORATORY TEST RESULTS

APPENDIX J-12

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS12

COATING CATEGORY: WATERPROOFING SEALERS (for concrete)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>clear water white solution</u>
Total Non-volatile	ASTM D 2369	<u>3.8% by wt.</u>
Density	ASTM D 1475	<u>0.998 g/ml</u>
Viscosity	ASTM D 562	<u>< 53 KU</u>
Water	ASTM D 3792	<u>95.8% by wt.</u>
VOC	ASTM D 3960	<u>91 g/L</u>
Stability	ASTM D 1849	<u>53 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>easily applied by brush and spray</u>
Appearance	FTMS 141C, 4541	<u>clear liquid, dries clear no change in color of concrete</u>
Accelerated Weathering	ASTM G 53	<u>no visual change water repellency: poor</u>
Water Repellency	ASTM D 1308	<u>excellent</u>
Water Absorption	SS-W-110b	<u>fail (4.0% by wt.)</u>

LABORATORY TEST RESULTS

APPENDIX J-13

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS13

COATING CATEGORY: WATERPROOFING SEALERS (for concrete)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, milky solution</u>
Total Non-volatile	ASTM D 5095	<u>12.9% by wt.</u>
Density	ASTM D 1475	<u>0.972 g/ml</u>
Viscosity	ASTM D 562	<u>54 KU</u>
Water	ASTM D 3792	<u>80.9% by wt.</u>
VOC	ASTM D 3960	<u>282 g/L</u>
Stability	ASTM D 1849	<u>54 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>easily applied by brush and spray</u>
Appearance	FTMS 141C, 4541	<u>clear liquid, dries clear no change in color of concrete</u>
Accelerated Weathering	ASTM G 53	<u>no visual change water repellency: good</u>
Water Repellency	ASTM D 1308	<u>good</u>
Water Absorption	SS-W-110b	<u>pass (0.53% by wt.)</u>

LABORATORY TEST RESULTS

APPENDIX J-14

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS14

COATING CATEGORY: WATERPROOFING SEALERS (for concrete)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>clear water white solution</u>
Total Non-volatile	ASTM D 2369	<u>4.9% by wt.</u>
Density	ASTM D 1475	<u>0.805 g/ml</u>
Viscosity	ASTM D 562	<u>< 53 KU</u>
Water	ASTM D 4017	<u>0.02% by wt.</u>
VOC	ASTM D 3960	<u>766 g/L</u>
Stability	ASTM D 1849	<u>53 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>easily applied by brush and spray</u>
Appearance	FTMS 141C, 4541	<u>clear liquid, dries clear no change in color of concrete</u>
Accelerated Weathering	ASTM G 53	<u>no visual change water repellency: fair</u>
Water Repellency	ASTM D 1308	<u>excellent</u>
Water Absorption	SS-W-110b	<u>pass (0.46% by wt.)</u>

LABORATORY TEST RESULTS

APPENDIX J-15

CLIENT: CALIFORNIA AIR RESOURCES BOARD DATE RECD: 08-30-94 OUR FILE: P-9206

CONTRACT NO. 92-339

SAMPLE IDENTIFICATION WPS15

COATING CATEGORY: WATERPROOFING SEALERS (for concrete)

<u>TESTS</u>	<u>TEST METHOD</u>	<u>RESULT</u>
Condition in Container	ASTM D 3925	<u>homogenous, milky solution</u>
Total Non-volatile	ASTM D 2369	<u>11.0% by wt.</u>
Density	ASTM D 1475	<u>0.983 g/ml</u>
Viscosity	ASTM D 562	<u>< 53 KU</u>
Water	ASTM D 3792	<u>85.9% by wt.</u>
VOC	ASTM D 3960	<u>196 g/L</u>
Stability	ASTM D 1849	<u>< 53 KU</u>
Application Properties	FTMS 141c, 2141.1 and 2131.1	<u>easily applied by brush and spray</u>
Appearance	FTMS 141C, 4541	<u>clear liquid, dries clear no change in color of concrete</u>
Accelerated Weathering	ASTM G 53	<u>no visual change water repellency: fair</u>
Water Repellency	ASTM D 1308	<u>excellent</u>
Water Absorption	SS-W-110b	<u>fail (1.2% by wt.)</u>