

The Moisture-Excluding Effectiveness of Finishes
on Wood Surfaces--Support Data

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ABSTRACT

Three extensive tables present complete data from large experiments that have been summarized and discussed in another paper by the same authors: "The Moisture-excluding effectiveness of finishes on wood surfaces" (USDA Forest Service Research Paper FPL 462). Table 1 shows the moisture-excluding effectiveness (MEE) on ponderosa pine sapwood of 1, 2, and 3 coats of each of 91 commercial finishes, for 1, 7, and 14 days of exposure to 90 percent relative humidity, and MEE values beyond 14 days for any finish that had MEE greater than 50 percent. Table 2 gives the MEE of three of the finishes applied to a variety of other substrates, for varying thickness of film and time of exposure. Table 3 lists name, description and composition of each of the 91 finishes evaluated in these tests.

Key Words: water vapor, moisture-exclusion, wood finishes
paints, coatings

THE MOISTURE-EXCLUDING EFFECTIVENESS ON
WOOD SURFACES--SUPPORT DATA

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The tables included here present complete data from two large experiments which were described and discussed by the same authors in "The moisture-excluding effectiveness of finishes on wood surfaces," USDA Forest Service Research Paper FPL 462, Forest Products Laboratory, Madison, WI (1985). In that paper the data were tabulated in condensed form.

The moisture-excluding effectiveness (MEE) of a wide range of commercially available finishes was evaluated by the Forest Products Laboratory method, in which finished and unfinished wood specimens in equilibrium with 30 percent relative humidity (RH) at 80°F are weighed before and after exposure to 90 percent RH at 80°F. Other variables considered important to the MEE are film thickness, wood

^{1/} The Laboratory is maintained in cooperation with the University of Wisconsin.

species and substrates, and time of exposure. The tests, therefore, included measurements of MEE at different levels of these variables also.

Table 1 contains the MEE (percentage) found for 91 finishes, each applied to three replicate specimens of ponderosa pine sapwood with varying film thickness (1, 2, and 3 coats) and exposed to 90 percent RH for varying periods of time (1, 7, and 14 days, and longer for those finishes that had an MEE of 50 percent or more after 14 days). Table 2 shows the MEE of three of the finishes when applied to a variety of substrates other than ponderosa pine sapwood, with the same replication as before and the same range of coats and times of exposure. Table 3 shows the name, characteristics, and composition of each of the 91 finishes evaluated in these studies.

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity

Finish	Number of coats	Coverage			Wood density	MEE_t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		Ft ² /gal			Lb/ft ³	Pct						
1	1	271	--	--	23.1	38	0	-2	--	--	--	--
1	1	354	--	--	26.5	51	11	3	--	--	--	--
1	1	284	--	--	24.8	55	7	-2	--	--	--	--
1	2	251	499	--	21.5	88	53	27	--	--	--	--
1	2	331	515	--	26.0	91	71	53	--	--	--	--
1	2	329	467	--	26.3	92	74	57	--	--	--	--
1	3	236	532	458	21.6	94	75	57	48	35	--	--
1	3	341	509	557	25.4	94	82	68	60	50	--	--
1	3	331	509	515	27.8	95	84	73	65	56	--	--
2	1	284	--	--	21.9	10	-0	-2	--	--	--	--
2	1	406	--	--	25.3	16	1	-1	--	--	--	--
2	1	533	--	--	27.7	14	-0	-2	--	--	--	--
3	1	488	--	--	18.5	5	-5	-5	--	--	--	--
3	1	399	--	--	22.7	12	-1	-2	--	--	--	--
3	1	420	--	--	27.7	19	6	5	--	--	--	--
3	2	407	721	--	18.7	42	0	-2	--	--	--	--
3	2	449	666	--	23.1	42	4	1	--	--	--	--
3	2	444	650	--	28.5	55	3	-2	--	--	--	--
3	3	395	605	810	19.7	78	21	5	--	--	--	--
3	3	429	763	836	23.6	78	30	14	--	--	--	--
4	3	399	819	958	21.2	77	31	15	--	--	--	--
4	1	290	--	--	19.9	54	5	-1	--	--	--	--
4	1	348	--	--	23.7	60	13	5	--	--	--	--
4	1	321	--	--	25.1	64	20	6	--	--	--	--
4	2	296	315	--	19.8	81	36	17	--	--	--	--
4	2	341	336	--	23.0	81	34	12	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE_t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
4	2	315	330	--	25.8	82	44	23	--	--	--	--
4	3	226	295	347	19.5	87	46	22	--	--	--	--
4	3	318	350	327	22.4	87	48	25	--	--	--	--
4	3	316	326	360	26.1	88	60	40	--	--	--	--
5	1	275	--	--	22.1	71	5	2	--	--	--	--
5	1	311	--	--	24.6	70	9	1	--	--	--	--
5	1	321	--	--	28.1	71	11	6	--	--	--	--
5	2	344	257	--	21.6	88	21	-2	--	--	--	--
5	2	317	286	--	23.7	90	36	3	--	--	--	--
5	2	315	252	--	28.4	91	50	6	--	--	--	--
5	3	328	269	239	21.6	94	53	10	--	--	--	--
5	3	318	243	285	24.0	94	60	16	--	--	--	--
5	3	305	253	259	27.9	94	68	22	--	--	--	--
6	1	308	--	--	25.2	92	72	52	39	--	--	--
6	1	236	--	--	26.1	91	68	46	31	--	--	--
6	1	224	--	--	27.1	95	80	63	49	--	--	--
6	2	145	441	--	24.7	97	93	89	84	79	75	63
6	2	--	464	--	26.9	98	94	90	86	82	79	68
6	2	348	426	--	27.0	98	92	85	79	74	69	53
6	3	355	424	456	25.0	98	95	90	86	83	79	68
6	3	325	421	348	26.9	98	95	90	87	83	79	68
6	3	357	421	358	31.1	98	96	93	90	87	84	74
7	1	--	--	--	21.7	43	-3	-6	--	--	--	--
7	1	517	--	--	24.0	35	2	-1	--	--	--	--
7	1	586	--	--	26.1	56	13	4	--	--	--	--
7	2	564	721	--	21.5	79	30	15	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		Ft ² /gal			Lb/ft ³	Pct						
7	2	514	830	--	22.5	75	22	5	--	--	--	--
7	2	560	822	--	26.4	83	45	24	--	--	--	--
7	3	491	752	988	22.5	86	48	29	--	--	--	--
7	3	500	800	846	22.2	86	47	29	--	--	--	--
7	3	586	815	1011	26.7	88	58	36	--	--	--	--
8	1	466	--	--	17.8	33	-3	-4	--	--	--	--
8	1	537	--	--	22.5	30	-2	-3	--	--	--	--
8	1	585	--	--	26.3	39	5	3	--	--	--	--
8	2	435	742	--	17.8	45	0	-3	--	--	--	--
8	2	585	724	--	23.5	45	4	1	--	--	--	--
8	2	621	869	--	26.8	48	3	-1	--	--	--	--
8	3	430	702	829	18.6	48	4	1	--	--	--	--
8	3	625	787	895	23.3	53	8	3	--	--	--	--
8	3	686	760	807	26.7	56	7	1	--	--	--	--
9	1	380	--	--	21.7	66	13	2	--	--	--	--
9	1	268	--	--	25.5	52	7	2	--	--	--	--
9	1	328	--	--	26.3	57	9	2	--	--	--	--
9	2	361	500	--	22.0	90	60	40	--	--	--	--
9	2	310	498	--	25.7	84	45	26	--	--	--	--
9	2	376	492	--	26.2	88	54	34	--	--	--	--
9	3	409	575	326	23.7	95	79	64	52	--	--	--
9	3	328	503	451	25.5	95	78	62	50	--	--	--
9	3	325	533	423	26.9	96	79	65	53	--	--	--
10	1	377	--	--	24.1	25	1	1	--	--	--	--
10	1	328	--	--	25.1	24	-0	-1	--	--	--	--
10	1	361	--	--	26.6	35	2	-1	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
10	2	345	540	--	23.9	66	19	6	--	--	--	--
10	2	365	447	--	26.2	59	17	6	--	--	--	--
10	2	360	503	--	26.8	68	20	7	--	--	--	--
10	3	326	463	368	24.3	80	40	19	--	--	--	--
10	3	362	477	463	26.0	88	56	33	--	--	--	--
10	3	334	479	482	26.5	88	57	35	--	--	--	--
11	1	385	--	--	18.3	6	-7	-7	--	--	--	--
11	1	467	--	--	23.5	16	-0	-1	--	--	--	--
11	1	325	--	--	25.4	14	-5	-7	--	--	--	--
11	2	400	614	--	19.0	15	-3	-4	--	--	--	--
11	2	428	602	--	23.2	31	-0	-3	--	--	--	--
11	2	441	520	--	25.3	21	-3	-5	--	--	--	--
11	3	523	618	894	20.4	30	-0	-2	--	--	--	--
11	3	475	594	894	23.6	38		-0	--	--	--	--
11	3	598	598	829	28.3	32	2	2	--	--	--	--
12	1	608	--	--	22.9	5	-2	-2	--	--	--	--
12	1	476	--	--	25.2	8	-1	-2	--	--	--	--
12	1	599	--	--	27.6	7	-0	-0	--	--	--	--
12	2	552	744	--	23.1	13	-1	-3	--	--	--	--
12	2	595	778	--	26.3	16	4	4	--	--	--	--
12	2	490	886	--	27.6	16	2	0	--	--	--	--
12	3	502	591	700	23.6	18	2	1	--	--	--	--
12	3	476	683	744	26.1	19	1	-0	--	--	--	--
12	3	563	672	859	27.1	16	-2	-4	--	--	--	--
13	1	517	--	--	21.8	48	2	-2	--	--	--	--
13	1	478	--	--	24.3	57	14	4	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
13	1	520	--	--	27.4	60	13	4	--	--	--	--
13	2	480	638	--	21.7	82	34	13	--	--	--	--
13	2	523	682	--	24.8	82	43	23	--	--	--	--
13	2	517	584	--	27.0	84	52	33	--	--	--	--
13	3	526	600	516	22.9	89	61	39	--	--	--	--
13	3	475	548	595	24.9	90	66	44	--	--	--	--
13	3	491	592	565	27.8	89	66	49	--	--	--	--
14	1	517	--	--	22.7	43	0	-3	--	--	--	--
14	1	546	--	--	25.4	51	8	2	--	--	--	--
14	1	598	--	--	30.7	51	10	2	--	--	--	--
14	2	483	876	--	21.9	77	27	10	--	--	--	--
14	2	594	859	--	26.0	81	41	18	--	--	--	--
14	2	641	867	--	29.9	81	41	18	--	--	--	--
14	3	458	826	627	22.2	87	49	24	--	--	--	--
14	3	553	876	867	25.5	87	54	30	--	--	--	--
14	3	606	951	834	31.3	87	57	34	--	--	--	--
15	1	523	--	--	21.6	50	16	7	--	--	--	--
15	1	543	--	--	26.0	62	25	12	--	--	--	--
15	1	511	--	--	28.4	69	30	14	--	--	--	--
15	2	490	799	--	22.3	84	47	27	--	--	--	--
15	2	568	674	--	26.2	88	62	43	--	--	--	--
15	2	583	751	--	27.0	88	59	38	--	--	--	--
15	3	536	669	1183	21.7	88	57	38	--	--	--	--
15	3	595	830	992	25.6	89	64	46	--	--	--	--
15	3	595	732	872	26.2	90	67	49	--	--	--	--
16	1	469	--	--	23.0	53	8	2	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		Ft ² /gal			Lb/ft ³	Pct						
16	1	509	--	--	23.9	54	7	-3	--	--	--	a-
16	1	576	--	--	27.2	60	18	6	--	--	--	--
16	2	537	587	--	23.0	83	41	23	--	--	--	--
16	2	503	620	--	23.9	83	44	24	--	--	--	--
16	2	595	672	--	27.0	85	53	33	--	--	--	--
16	3	544	657	872	22.6	88	54	34	--	--	--	--
16	3	531	591	899	24.3	88	57	35	--	--	--	--
16	3	634	657	1036	26.6	89	63	42	--	--	--	--
17	1	--	--	--	20.6	0	0	0	--	--	--	--
17	1	--	--	--	23.5	1	-0	-0	--	--	--	--
17	1	--	--	--	23.5	-4	-2	-3	--	--	--	--
18	1	402	--	--	20.2	33	2	0	--	--	--	--
18	1	334	--	--	25.3	43	5	1	--	--	--	--
18	1	410	--	--	24.5	43	4	-0	--	--	--	--
18	2	385	429	--	20.0	72	21	6	--	--	--	--
18	2	383	478	--	24.1	66	18	6	--	--	--	--
18	2	402	445	--	25.1	72	28	11	--	--	--	--
18	3	399	445	393	20.4	79	35	16	--	--	--	--
18	3	363	461	370	23.7	77	31	15	--	--	--	--
18	3	378	473	412	26.1	81	45	25	--	--	--	--
19	1	593	--	--	20.7	45	2	-1	--	--	--	--
19	1	648	--	--	24.3	54	10	3	--	--	--	--
19	1	608	--	--	25.5	57	13	6	--	--	--	--
19	2	604	720	--	20.5	79	29	11	--	--	--	--
19	2	593	775	--	24.4	82	41	21	--	--	--	--
19	2	692	847	--	26.9	81	42	23	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
19	3	563	643	916	20.7	86	45	22	--	--	--	--
19	3	617	731	944	25.0	87	55	32	--	--	--	--
19	3	725	749	907	28.7	88	59	38	--	--	--	--
20	1	473	--	--	22.8	25	-1	-1	--	--	--	--
20	1	506	--	--	24.8	37	7	3	--	--	--	--
20	1	558	--	--	29.5	42	12	3	--	--	--	--
20	2	483	649	--	22.1	76	30	14	--	--	--	--
20	2	524	685	--	26.2	79	40	23	--	--	--	--
20	2	588	784	--	30.7	80	46	26	--	--	--	--
20	3	456	691	777	21.2	84	44	22	--	--	--	--
20	3	541	713	719	25.2	86	53	32	--	--	--	--
20	3	569	719	777	29.5	87	61	39	--	--	--	--
21	1	478	--	--	19.5	77	11	2	--	--	--	--
21	1	589	--	--	23.6	80	26	5	--	--	--	--
21	1	653	--	--	24.2	73	16	4	--	--	--	--
21	2	544	639	--	19.7	88	41	15	--	--	--	--
21	2	626	677	--	24.2	89	55	25	--	--	--	--
21	2	653	601	--	25.1	89	52	23	--	--	--	--
21	3	667	613	667	20.2	92	58	27	--	--	--	--
21	3	609	613	630	23.1	93	69	42	--	--	--	--
21	3	605	653	644	23.9	93	68	40	--	--	--	--
22	1	384	--	--	21.5	47	6	4	--	--	--	--
22	1	451	--	--	25.7	61	3	-3	--	--	--	--
22	1	535	--	--	30.0	68	18	5	--	--	--	--
22	2	409	472	--	21.3	84	39	18	--	--	--	--
22	2	455	605	--	25.2	85	47	24	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
22	2	559	664	--	30.3	87	57	32	--	--	--	--
22	3	362	669	513	22.2	91	62	40	--	--	--	--
22	3	437	695	626	24.4	90	64	43	--	--	--	--
22	3	448	589	755	30.4	92	74	56	--	--	--	--
23	1	404	--	--	20.3	66	10	2	--	--	--	--
23	1	380	--	--	24.0	63	11	2	--	--	--	--
23	1	432	--	--	25.9	67	14	5	--	--	--	--
23	2	443	459	--	20.7	85	43	19	--	--	--	--
23	2	428	531	--	23.6	82	38	18	--	--	--	--
23	2	537	537	--	26.5	86	49	23	--	--	--	--
23	3	434	534	428	21.5	91	59	34	--	--	--	--
23	3	372	466	537	24.1	90	61	40	--	--	--	--
23	3	461	544	476	27.5	92	71	51	--	--	--	--
24	1	550	--	--	23.5	52	10	2	--	--	--	--
24	1	498	--	--	25.0	58	12	4	--	--	--	--
24	1	609	--	--	29.3	51	11	4	--	--	--	--
24	2	460	695	--	18.1	85	37	18	--	--	--	--
24	2	460	707	--	23.4	88	60	39	--	--	--	--
24	2	596	647	--	25.9	89	64	44	--	--	--	--
24	3	412	662	689	18.0	91	60	37	24	--	--	--
24	3	460	678	786	23.1	92	72	55	41	--	--	--
24	3	588	744	713	26.3	93	75	59	46	--	--	--
25	1	535	--	--	21.1	32	4	2	--	--	--	--
25	1	539	--	--	23.6	35	2	-1	--	--	--	--
25	1	654	--	--	22.9	26	-1	-4	--	--	--	--
25	2	561	730	--	21.0	80	36	17	--	--	--	--

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Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		Ft ² /gal			Lb/ft ³	Pct						
25	2	561	687	--	23.6	82	41	20	--	--	--	--
25	2	569	723	--	23.0	77	36	18	--	--	--	--
25	3	598	771	743	21.1	89	57	35	--	--	--	--
25	3	512	711	771	22.7	86	54	35	--	--	--	--
25	3	598	841	948	25.9	88	56	35	--	--	--	--
26	1	564	--	--	22.1	47	5	1	--	--	--	--
26	1	517	--	--	24.4	57	9	-1	--	--	--	--
26	1	568	--	--	30.4	56	13	3	--	--	a-	--
26	2	523	595	--	22.0	85	42	18	--	--	--	--
26	2	536	714	--	25.3	87	55	31	--	--	--	--
26	2	604	612	--	30.2	88	61	37	--	--	--	--
26	3	553	721	849	21.6	88	55	30	--	--	--	--
26	3	498	655	665	25.1	92	70	49	--	--	--	--
26	3	553	721	766	30.1	91	72	53	--	--	--	--
27	1	586	--	--	21.7	42	1	-1	--	--	--	--
27	1	590	--	--	25.8	51	8	2	--	--	--	--
27	1	578	--	--	29.7	52	11	4	--	--	--	--
27	2	606	738	--	22.3	76	28	10	--	--	--	--
27	2	590	703	--	26.2	80	40	18	--	--	--	--
27	2	586	732	--	30.0	81	38	14	--	--	--	--
27	3	560	686	578	22.4	86	49	26	--	--	--	--
27	3	563	666	560	27.2	88	58	37	--	--	--	--
27	3	671	661	623	30.3	88	56	33	--	--	--	--
28	1	537	--	--	19.5	72	18	4	--	--	--	--
28	1	625	--	--	22.7	70	24	8	--	--	--	--
28	1	625	--	--	24.5	69	25	10	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>pct</u>						
28	2	649	686	--	19.3	85	44	21	--	--	--	--
28	2	649	781	--	22.6	86	54	30	--	--	--	--
28	2	634	788	--	24.5	87	58	35	--	--	--	--
28	3	664	843	753	19.9	89	62	39	--	--	--	--
28	3	659	811	861	22.6	90	64	42	--	--	--	--
28	3	669	819	843	25.1	90	67	47	--	--	--	--
29	1	--	--	--	24.0	-1	1	1	--	--	--	--
29	1	--	--	--	26.6	-0	1	1	--	--	--	--
29	1	--	--	--	29.9	-0	-1	-2	--	--	--	--
29	2	--	--	--	24.6	1	2	2	--	--	--	--
29	2	--	--	--	27.3	-2	3	3	--	--	--	--
29	2	--	--	--	28.8	-3	-3	-3	--	--	--	--
29	3	--	--	--	24.7	4	2	2	--	--	--	--
29	3	--	--	--	26.2	1	-1	-2	--	--	--	--
29	3	--	--	--	28.5	2	1	1	--	--	--	--
30	1	377	--	--	19.9	94	68	45	32	24	18	6
30	1	330	--	--	23.3	99	95	89	84	78	73	51
30	1	282	--	--	22.3	97	86	73	63	54	46	24
31	1	433	--	--	20.9	-7	-8	-8	--	--	--	--
31	1	422	--	--	23.2	1	-1	-1	--	--	--	--
31	1	392	--	--	25.3	-5	-8	-8	--	--	--	--
31	2	449	451	--	21.0	-2	-6	-5	--	--	--	--
31	2	419	437	--	24.1	-1	-6	-6	--	--	--	--
31	2	402	528	--	26.0	-0	-4	-3	--	--	--	--
31	3	461	491	528	21.5	-5	-7	-7	--	--	--	--
31	3	461	511	735	24.7	1	-4	-4	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		- - - Ft ² /gal - - -			Lb/ft ³	- - - - - Pct - - - - -						
31	3	509	395	757	27.0	9	7	6	--	--	--	--
32	1	--	--	--	20.3	7	-0	-1	--	--	--	--
32	1	--	--	--	23.1	3	-6	-6	--	--	--	--
32	1	--	--	--	23.5	9	1	1	--	--	--	--
32	2	--	--	--	20.7	10	-3	-3	--	--	--	--
32	2	--	--	--	24.3	12	1	-0	--	--	--	--
32	2	--	--	--	25.4	10	-4	-6	--	--	--	--
32	3	--	--	--	20.8	13	-4	-3	--	--	--	--
32	3	--	--	--	25.2	22	6	3	--	--	--	--
32	3	--	--	--	25.6	17	-3	-4	--	--	--	--
33	1	484	--	--	23.3	22	3	2	--	--	--	--
33	1	508	--	--	24.1	23	1	-0	--	--	--	--
33	1	517	--	--	26.0	28	4	2	--	--	--	--
33	2	489	658	--	23.1	76	28	6	--	--	--	--
33	2	470	748	--	23.7	78	34	16	--	--	--	--
33	2	563	658	--	25.3	77	37	17	--	--	--	--
33	3	440	754	734	22.2	83	48	27	--	--	--	--
33	3	501	658	857	24.2	86	55	33	--	--	--	--
33	3	508	791	814	26.6	85	54	33	--	--	--	--
34	1	594	--	--	22.6	63	13	3	--	--	--	--
34	1	700	--	--	28.8	67	24	10	--	--	--	--
34	1	638	--	--	30.7	68	24	10	--	--	--	--
34	2	583	789	--	22.6	83	42	21	--	--	--	--
34	2	629	827	--	25.6	86	52	31	--	--	--	--
34	2	579	877	--	30.9	86	52	27	--	--	--	--
34	3	553	755	789	22.6	90	61	40	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
34	3	643	851	723	24.8	90	63	42	--	--	--	--
34	3	700	933	689	30.4	91	64	41	--	--	--	--
35	1	342	--	--	22.7	44	9	1	--	--	--	--
35	1	346	--	--	24.7	57	15	6	--	--	--	--
35	1	392	--	--	25.8	74	21	14	--	--	--	--
35	2	359	439	--	22.4	75	38	19	--	--	--	--
35	2	359	377	--	25.6	83	50	28	--	--	--	--
35	2	289	450	--	27.6	81	46	24	--	--	--	--
35	3	368	424	379	22.4	85	54	35	--	--	--	--
35	3	358	424	344	25.0	89	63	41	--	--	--	--
35	3	412	366	412	28.2	89	65	42	--	--	--	--
36	1	434	--	--	21.8	42	3	-3	--	--	--	--
36	1	518	--	--	22.2	42	2	-2	--	--	--	--
36	1	503	--	--	25.7	47	8	2	--	--	--	--
36	2	462	543	--	22.3	61	18	7	--	--	--	--
36	2	479	683	--	22.2	62	13	4	--	--	--	--
36	2	568	595	--	25.9	64	19	7	--	--	--	--
36	3	518	636	697	22.5	66	20	7	--	--	--	--
36	3	511	688	835	23.9	68	23	11	--	--	--	--
36	3	498	656	717	26.8	70	28	12	--	--	--	--
37	1	454	--	--	21.7	38	5	2	--	--	--	--
37	1	505	--	--	22.6	39	3	1	--	--	--	--
37	1	542	--	--	25.0	39	-1	-5	--	--	--	--
37	2	438	759	--	21.8	55	11	4	--	--	--	--
37	2	466	653	--	22.5	59	9	3	--	--	--	--
37	2	500	657	--	25.6	60	16	7	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		- - - - Ft ² /gal - - - -			Lb/ft ³	- - - - - Pct - - - - -						
37	3	526	712	697	21.6	63	14	2	--	--	--	--
37	3	493	683	697	22.9	66	13	3	--	--	--	--
37	3	523	666	712	25.6	65	16	1	--	--	--	--
38	1	515	--	--	21.2	22	-3	-3	--	--	--	--
38	1	617	--	--	25.5	24	3	-0	--	--	--	--
38	1	733	--	--	27.0	28	1	-0	--	--	--	--
38	2	607	770	--	20.9	59	3	-1	--	--	--	--
38	2	607	786	--	25.9	60	16	5	--	--	--	--
38	2	658	1031	--	35.3	63	15	6	--	--	--	--
38	3	523	834	816	21.2	71	18	11	--	--	--	--
38	3	632	724	635	26.2	68	26	13	--	--	--	--
38	3	555	792	934	24.9	72	22	9	--	--	--	--
39	1	343	--	--	17.5	-3	-3	-3	--	--	--	--
39	1	547	--	--	25.2	-2	-3	-3	--	--	--	--
39	1	498	--	--	24.0	2	3	3	--	--	--	--
39	2	395	588	--	17.8	0	-6	-5	--	--	--	--
39	2	531	612	--	23.5	5	-4	-4	--	--	--	--
39	2	471	591	--	23.6	10	0	0	--	--	--	--
39	3	382	623	680	17.8	17	-4	-3	--	--	--	--
39	3	510	689	929	22.8	30	-1	-4	--	--	--	--
39	3	477	608	825	22.5	29	-1	-4	--	--	--	--
40	1	541	--	--	21.3	86	49	28	--	--	--	--
40	1	510	--	--	23.0	89	55	31	--	--	--	--
40	1	584	--	--	26.0	89	59	36	--	--	--	--
40	2	502	591	--	21.5	96	85	73	64	56	50	34
40	2	530	524	--	23.4	97	87	76	68	60	53	36

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		- - - - Ft ² /gal - - - -			Lb/ft ³	- - - - - Pct - - - - -						
40	2	445	521	--	25.9	97	88	79	71	64	58	41
40	3	487	495	686	21.0	97	90	82	76	69	64	49
40	3	471	487	587	25.5	98	92	86	80	75	70	56
40	3	557	530	580	25.8	98	92	85	79	73	68	53
41	1	467	--	--	21.3	90	59	38	--	--	--	--
41	1	511	--	--	22.7	91	62	39	--	--	--	--
41	1	517	--	--	25.9	93	70	51	--	--	--	--
41	2	546	643	--	21.2	96	80	66	55	45	38	--
41	2	465	599	--	23.2	97	86	74	65	57	50	--
41	2	546	622	--	27.7	97	87	77	69	62	56	--
41	3	456	674	503	21.8	97	89	81	73	67	61	43
41	3	519	626	661	22.9	98	89	80	73	66	59	41
41	3	522	656	618	26.1	98	91	83	77	71	66	49
42	1	510	--	--	21.2	89	53	31	--	--	--	--
42	1	557	--	--	23.0	90	59	37	--	--	--	--
42	1	519	--	--	26.2	92	69	50	--	--	--	--
42	2	510	581	--	21.2	96	82	70	58	49	40	--
42	2	527	664	--	24.5	97	85	74	64	55	48	--
42	2	564	548	--	25.3	97	87	77	68	60	53	--
42	3	473	530	630	21.2	98	89	80	73	65	58	41
42	3	539	591	460	25.4	98	92	86	80	74	69	55
42	3	533	591	571	25.3	98	91	85	79	72	67	51
43	1	531	--	--	21.6	88	52	32	--	--	--	--
43	1	528	--	--	23.8	90	62	41	--	--	--	--
43	1	509	--	--	25.3	98	69	51	--	--	--	--
43	2	461	604	--	22.9	97	86	75	66	57	50	33

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		- Ft ² /gal -			Lb/ft ³	Pct						
43	2	517	608	--	24.4	97	87	78	69	61	54	37
43	2	565	562	--	25.5	97	87	78	69	61	54	37
43	3	481	627	619	22.8	98	90	82	75	68	62	47
43	3	442	534	784	24.1	98	91	85	78	72	67	52
43	3	506	569	737	26.1	98	92	86	80	75	70	56
44	1	379	--	--	23.4	91	61	38	--	--	--	--
44	1	526	--	--	25.4	91	67	46	--	--	--	--
44	1	576	--	--	26.4	91	69	49	--	--	--	--
44	2	429	733	--	23.6	94	75	57	47	--	--	--
44	2	512	790	--	26.0	94	80	64	55	--	--	--
44	2	500	742	--	26.2	94	81	66	58	--	--	--
44	3	373	691	828	24.0	96	84	71	62	52	43	--
44	3	489	640	770	26.2	96	87	77	69	61	53	--
44	3	514	728	882	25.7	96	87	76	68	60	52	--
45	1	704	--	--	24.7	19	-0	-1	--	--	--	--
45	1	685	--	--	26.8	20	1	1	--	--	--	--
45	1	685	--	--	28.7	26	2	0	--	--	--	--
45	2	681	751	--	21.4	75	25	11	--	--	--	--
45	2	685	911	--	24.5	74	25	10	--	--	--	--
45	2	666	832	--	27.7	79	35	14	--	--	--	--
45	3	516	885	1087	22.8	89	54	28	--	--	--	--
45	3	629	751	1087	24.2	89	54	29	--	--	--	--
45	3	645	756	968	27.7	90	63	39	--	--	--	--
46	1	678	--	--	26.8	60	16	6	--	--	--	--
46	1	636	--	--	25.7	57	12	3	--	--	--	--
46	1	682	--	--	30.1	66	22	9	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
46	2	629	744	--	25.4	85	50	29	--	--	--	--
46	2	690	826	--	25.2	85	49	29	--	--	--	--
46	2	690	802	--	29.8	85	54	33	--	--	--	--
46	3	622	707	832	24.9	90	63	43	--	--	--	--
46	3	698	674	730	25.9	91	66	47	--	--	--	--
46	3	654	650	884	29.3	90	68	49	--	--	--	--
47	1	698	--	--	25.1	80	37	17	--	--	--	--
47	1	744	--	--	25.9	75	31	14	--	--	--	--
47	1	604	--	--	29.8	82	46	24	--	--	--	--
47	2	683	731	--	25.9	90	65	43	--	--	--	--
47	2	569	661	--	26.1	91	68	47	--	--	--	--
47	2	735	706	--	29.0	91	67	46	--	--	--	--
47	3	619	790	931	25.6	93	73	54	42	--	--	--
47	3	604	811	849	27.2	93	74	56	44	--	--	--
47	3	651	771	766	29.0	94	77	60	48	--	--	--
48	1	536	--	--	23.1	68	19	7	--	--	--	--
48	1	604	--	--	25.1	79	40	19	--	--	--	--
48	1	492	--	--	26.5	83	51	29	--	--	--	--
48	2	419	756	--	23.3	89	57	34	--	--	--	--
48	2	483	815	--	25.4	90	67	46	--	--	--	--
48	2	585	851	--	26.6	88	62	41	--	--	--	--
48	3	490	652	871	23.7	92	68	47	40	--	--	--
48	3	514	761	821	25.4	92	73	55	47	--	--	--
48	3	543	477	833	26.5	92	73	56	48	--	--	--
49	1	431	--	--	21.5	60	12	4	--	--	--	--
49	1	441	--	--	24.9	69	25	13	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
49	1	460	--	--	27.5	69	27	14	--	--	--	--
50	1	552	--	--	23.7	58	12	3	--	--	--	--
50	1	652	--	--	27.5	64	16	5	--	--	--	--
50	1	643	--	--	27.6	64	14	3	--	--	--	--
50	2	696	1036	--	22.5	70	19	3	--	--	--	--
50	2	666	1180	--	25.5	71	22	7	--	--	--	--
50	2	671	982	--	27.6	70	22	7	--	--	--	--
50	3	617	1060	992	23.8	77	31	12	--	--	--	--
50	3	643	1072	1025	25.5	77	29	10	--	--	--	--
50	3	583	1123	1165	27.2	75	30	10	--	--	--	--
51	1	449	--	--	23.4	68	21	6	--	--	--	--
51	1	532	--	--	24.8	67	16	4	--	--	--	--
51	1	575	--	--	27.3	71	24	8	--	--	--	--
51	2	548	1052	--	23.4	86	53	30	--	--	--	--
51	2	605	1157	--	25.4	88	57	34	--	--	--	--
51	2	629	1186	--	27.2	86	53	31	--	--	--	--
51	3	575	1017	1142	23.4	90	67	46	--	--	--	--
51	3	578	1128	1076	26.7	92	72	53	--	--	--	--
51	3	638	1089	1052	27.1	92	68	48	--	--	--	--
52	1	598	--	--	22.1	37	1	-1	--	--	--	--
52	1	666	--	--	25.7	39	4	2	--	--	--	--
52	1	684	--	--	28.6	35	2	-3	--	--	--	--
52	2	645	452	--	22.2	87	48	22	--	--	--	--
52	2	635	497	--	24.6	87	50	24	--	--	--	--
52	2	581	454	--	29.3	87	57	36	--	--	--	--
52	3	622	462	538	22.5	93	68	45	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE_t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
52	3	590	467	548	25.1	93	71	50	--	--	--	--
52	3	625	587	576	29.2	92	70	48	--	--	--	--
53	1	618	--	--	22.0	83	41	20	--	--	--	--
53	1	578	--	--	22.6	81	37	16	--	--	--	--
53	1	758	--	--	29.0	82	40	12	--	--	--	--
53	2	641	654	--	21.4	92	66	42	24	--	--	--
53	2	557	625	--	23.1	93	70	49	32	--	--	--
53	2	665	665	--	27.7	94	75	54	35	--	--	--
53	3	644	603	606	21.8	95	78	61	46	34	--	--
53	3	538	581	714	23.7	95	80	63	48	37	--	--
53	3	654	581	615	25.5	96	83	67	53	41	--	--
54	1	598	--	--	22.7	71	22	8	--	--	--	--
54	1	561	--	--	25.2	75	31	13	--	--	--	--
54	1	570	--	--	29.2	79	38	17	--	--	--	--
54	2	548	662	--	23.2	88	56	33	--	--	--	--
54	2	534	611	--	25.3	88	60	37	--	--	--	--
54	2	601	643	--	29.6	88	61	38	--	--	--	--
54	3	529	585	591	22.8	90	62	40	26	--	--	--
54	3	556	579	695	25.4	91	69	49	35	--	--	--
54	3	524	632	654	29.7	92	74	56	43	--	--	--
55	1	609	--	--	22.9	7	-1	-1	--	--	--	--
55	1	582	--	--	26.3	6	-3	-4	--	--	--	--
55	1	674	--	--	27.4	6	0	0	--	--	--	--
55	2	736	1079	--	22.9	17	-0	-1	--	--	--	--
55	2	642	952	--	24.6	11	-5	-6	--	--	--	--
55	2	609	852	--	26.7	12	-3	-3	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
55	3	637	999	975	23.2	24	1	-1	--	--	--	--
55	3	686	975	1012	24.6	17	1	-0	--	--	--	--
55	3	686	999	975	26.6	22	2	1	--	--	--	--
56	1	597	--	--	25.7	45	7	2	--	--	--	--
56	1	649	--	--	26.4	47	7	1	--	--	--	--
56	1	731	--	--	29.0	43	6	1	--	--	--	--
56	2	594	925	--	25.6	83	44	22	--	--	--	--
56	2	665	881	--	25.3	83	46	24	--	--	--	--
56	2	681	829	--	29.1	86	54	33	--	--	--	--
56	3	567	799	841	26.0	90	63	41	--	--	--	--
56	3	635	895	841	26.1	89	62	41	--	--	--	--
56	3	677	910	777	28.9	90	66	45	--	--	--	--
57	1	558	--	--	21.3	71	11	-1	--	--	--	--
57	1	623	--	--	25.0	74	24	8	--	--	--	--
57	1	576	--	--	29.1	72	32	17	--	--	--	--
57	2	547	650	--	21.8	86	48	26	--	--	--	--
57	2	552	666	--	24.7	87	53	28	--	--	--	--
57	2	561	697	--	28.3	85	54	34	--	--	--	--
57	3	582	679	802	21.9	89	59	35	--	--	--	--
57	3	609	616	736	25.1	91	65	42	--	--	--	--
57	3	586	666	774	28.4	89	65	45	--	--	--	--
58	1	512	--	--	21.4	85	42	21	--	--	--	--
58	1	578	--	--	24.2	84	49	30	--	--	--	--
58	1	581	--	--	25.4	87	47	21	--	--	--	--
58	2	504	596	--	20.6	93	68	47	--	--	--	--
58	2	522	681	--	24.8	92	70	52	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		Ft ² /gal			Lb/ft ³	Pct						
58	2	554	699	--	24.7	93	71	49	--	--	--	--
58	3	469	722	599	20.9	95	77	60	47	39	--	--
58	3	496	695	645	25.6	94	79	64	54	47	--	--
58	3	495	688	618	23.6	95	78	62	50	41	--	--
59	1	427	--	--	17.3	72	11	-1	--	--	--	--
59	1	424	--	--	22.7	84	37	16	--	--	--	--
59	1	465	--	--	30.0	90	62	39	--	--	--	--
59	2	416	489	--	17.4	91	59	36	23	--	--	--
59	2	443	438	--	22.2	93	70	50	36	--	--	--
59	2	331	514	--	29.2	94	77	61	49	--	--	--
59	3	428	498	456	17.4	94	69	49	36	--	--	--
59	3	473	414	424	22.6	94	77	61	49	--	--	--
59	3	432	511	449	27.8	95	80	66	55	--	--	--
60	1	--	--	--	22.7	90	62	39	--	--	--	--
60	1	--	--	--	24.4	91	66	42	--	--	--	--
60	1	--	--	--	24.7	93	73	51	--	--	--	--
60	2	--	--	--	23.5	94	79	63	52	43	--	--
60	2	--	--	--	23.6	95	82	67	56	46	--	--
60	2	--	--	--	25.0	95	82	66	55	45	--	--
60	3	--	--	--	22.8	95	83	69	59	51	45	--
60	3	--	--	--	24.2	96	86	74	65	57	51	--
60	3	--	--	--	24.9	96	87	76	67	60	54	--
61	1	530	--	--	18.2	77	13	5	--	--	--	--
61	1	535	--	--	22.8	85	34	8	--	--	--	--
61	1	560	--	--	22.3	86	34	7	--	--	--	--
61	2	503	667	--	18.5	94	57	23	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
61	2	563	733	--	22.3	94	65	35	--	--	--	--
61	2	547	715	--	22.8	94	68	38	--	--	--	--
61	3	503	645	747	18.4	95	69	41	18	--	--	--
61	3	471	742	691	21.8	96	78	56	36	--	--	--
61	3	503	738	747	23.3	96	79	57	36	--	--	--
62	1	540	--	--	22.3	78	26	13	--	--	--	--
62	1	483	--	--	24.0	80	28	12	--	--	--	--
62	1	540	--	--	26.8	81	38	20	--	--	--	--
62	2	559	839	--	22.2	88	47	30	--	--	--	--
62	2	519	721	--	24.3	89	52	34	--	--	--	--
62	2	524	738	--	24.8	90	58	40	--	--	--	--
62	3	563	664	961	22.4	91	60	42	--	--	--	--
62	3	570	727	839	24.2	92	62	44	--	--	--	--
62	3	553	705	863	23.5	93	67	50	--	--	--	--
63	1	434	--	--	24.2	92	80	45	29	--	--	--
63	1	402	--	--	25.8	93	71	50	33	--	--	--
63	1	472	--	--	25.9	95	80	64	50	--	--	--
63	2	398	598	--	25.1	98	90	82	74	66	60	39
63	2	425	481	--	26.2	98	90	81	73	65	59	38
63	2	463	516	--	27.2	98	91	83	75	68	62	42
63	3	418	477	495	23.4	98	93	86	81	75	70	55
63	3	419	431	474	25.8	98	93	88	82	77	72	58
63	3	441	493	525	27.6	98	93	87	82	77	72	57
64	1	346	--	--	23.6	94	77	58	42	--	--	--
64	1	353	--	--	25.7	93	74	53	37	--	--	--
64	1	361	--	--	28.1	95	81	66	54	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		Ft ² /gal			Lb/ft ³	Pct						
64	2	308	365	--	23.2	97	90	81	73	66	59	37
64	2	359	372	--	26.1	97	90	82	74	67	60	37
64	2	358	322	--	28.7	97	93	86	80	74	69	51
64	3	363	324	375	23.4	98	93	87	82	77	72	56
64	3	298	368	418	26.4	98	94	88	83	78	73	58
64	3	339	362	369	28.9	98	94	89	85	80	76	62
65	1	462	--	--	17.7	85	33	11	--	--	--	--
65	1	481	--	--	22.5	89	52	29	--	--	--	--
65	1	526	--	--	24.4	90	59	36	--	--	--	--
65	2	441	894	--	17.6	94	68	45	31	--	--	--
65	2	467	861	--	23.0	94	74	56	42	--	--	--
65	2	571	877	--	24.9	95	77	60	47	--	--	--
65	3	396	869	861	18.0	95	76	59	45	35	--	--
65	3	499	987	1053	22.4	96	80	65	52	42	--	--
65	3	535	886	920	25.2	96	83	70	59	50	--	--
66	1	415	--	--	17.2	90	51	25	--	--	--	--
66	1	399	--	--	23.5	88	55	37	--	--	--	--
66	1	471	--	--	25.4	90	61	38	--	--	--	--
66	2	402	881	--	17.0	94	72	53	36	--	--	--
66	2	389	805	--	23.1	94	77	61	48	--	--	--
66	2	445	819	--	26.2	95	83	70	58	--	--	--
66	3	402	759	953	17.0	96	79	64	49	37	--	--
66	3	434	729	993	23.4	96	82	70	57	47	--	--
66	3	467	784	993	27.1	97	87	77	67	58	--	--
67	1	439	--	--	21.9	92	66	46	34	--	--	--
67	1	433	--	--	24.5	92	69	49	36	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
67	1	414	--	--	24.3	93	73	55	43	--	--	--
67	2	410	686	--	22.7	95	81	68	57	47	39	--
67	2	415	689	--	22.9	96	83	70	59	49	41	--
67	2	414	641	--	26.4	96	85	73	64	55	47	--
67	3	421	598	561	22.8	97	87	77	68	60	53	35
67	3	391	619	504	23.4	97	89	80	72	65	59	42
67	3	378	608	538	26.5	97	90	82	75	68	61	45
68	1	458	--	--	22.3	75	27	12	--	--	--	--
68	1	445	--	--	23.4	80	38	18	--	--	--	--
68	1	494	--	--	26.4	80	39	18	--	--	--	--
68	2	479	577	--	22.1	87	52	32	--	--	--	--
68	2	460	667	--	24.6	88	59	37	--	--	--	--
68	2	429	586	--	26.8	90	64	42	--	--	--	--
68	3	458	663	821	21.8	89	59	38	--	--	--	--
68	3	450	610	675	24.7	92	70	51	--	--	--	--
68	3	466	643	688	27.4	92	71	52	--	--	--	--
69	1	415	--	--	17.7	89	46	17	--	--	--	--
69	1	455	--	--	22.3	95	70	45	--	--	--	--
69	1	435	--	--	25.0	96	77	57	--	--	--	--
69	2	381	--	--	17.7	97	85	73	61	51	42	17
69	2	460	372	--	22.5	98	89	79	70	62	54	31
69	2	391	394	--	24.6	98	90	82	74	67	61	40
69	3	371	372	572	17.9	98	88	79	70	62	55	34
69	3	402	367	553	21.6	98	91	84	76	70	64	45
69	3	427	391	536	23.9	98	92	85	79	73	68	51
70	1	425	--	--	21.8	82	32	13	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
70	1	359	--	--	24.8	86	47	27	--	--	--	--
70	1	330	--	--	24.4	89	55	29	--	--	--	--
70	2	417	491	--	21.8	90	58	35	--	--	--	--
70	2	368	417	--	25.0	92	67	46	--	--	--	--
70	2	287	498	--	24.5	92	69	48	--	--	--	--
70	3	401	479	468	21.8	93	67	46	33	--	--	--
70	3	331	498	502	26.0	93	73	54	42	--	--	--
70	3	464	509	537	25.7	93	75	57	45	--	--	--
71	1	475	--	--	18.6	77	24	8	--	--	--	--
71	1	506	--	--	23.3	83	44	19	--	--	--	--
71	1	549	--	--	26.2	81	36	13	--	--	--	--
71	2	456	902	--	18.9	96	84	71	59	50	40	--
71	2	503	821	--	23.3	97	88	78	69	61	52	--
71	2	414	930	--	25.4	97	90	81	72	65	57	--
71	3	530	959	885	19.1	97	88	78	68	60	52	36
71	3	546	885	991	23.2	98	91	83	75	69	61	45
71	3	463	902	939	26.3	98	93	87	80	75	69	55
72	1	522	--	--	21.7	66	17	6	--	--	--	--
72	1	535	--	--	25.1	75	31	14	--	--	--	--
72	1	566	--	--	26.5	76	32	13	--	--	--	--
72	2	581	741	--	21.9	83	42	21	--	--	--	--
72	2	591	778	--	24.8	85	48	27	--	--	--	--
72	2	543	751	--	26.3	85	54	33	--	--	--	--
72	3	563	711	1050	22.2	55	55	32	--	--	--	--
72	3	572	735	1103	24.3	57	57	36	--	--	--	--
72	3	563	698	1092	26.2	64	64	43	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
73	1	333	--	--	23.4	91	61	38	--	--	--	--
73	1	338	--	--	26.1	92	66	45	--	--	--	--
73	1	318	--	--	28.2	90	60	39	--	--	--	--
73	2	335	437	--	22.6	94	74	57	44	--	--	--
73	2	332	358	--	25.9	95	79	64	53	--	--	--
73	2	362	394	--	26.8	94	78	63	51	--	--	--
73	3	380	366	345	23.5	96	81	68	57	47	--	--
73	3	369	364	370	25.2	96	83	70	60	51	--	--
73	3	361	344	418	26.9	96	84	72	61	53	--	--
74	1	448	--	--	20.0	77	25	9	--	--	--	--
74	1	441	--	--	22.9	82	41	20	--	--	--	--
74	1	490	--	--	25.6	79	40	20	--	--	--	--
74	2	467	663	--	19.7	88	51	26	--	--	--	--
74	2	469	663	--	23.2	90	63	42	--	--	--	--
74	2	448	651	--	26.9	90	67	47	--	--	--	--
74	3	404	696	562	19.7	91	66	44	30	--	--	--
74	3	461	622	583	22.4	92	69	49	34	--	--	--
74	3	496	679	622	27.4	93	75	58	44	--	--	--
75	1	405	--	--	20.0	85	35	12	--	--	--	--
75	1	323	--	--	24.5	91	61	38	--	--	--	--
75	1	437	--	--	26.4	89	58	34	--	--	--	--
75	2	392	455	--	20.1	93	68	45	29	--	--	--
75	2	370	505	--	25.1	95	78	60	47	--	--	--
75	2	394	464	--	25.8	95	79	63	50	--	--	--
75	3	382	439	468	21.4	96	80	65	52	42	--	--
75	3	381	454	522	22.7	96	81	67	55	46	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
75	3	384	455	539	23.8	96	84	70	59	51	--	--
76	1	402	--	--	21.0	1	-7	-6	--	--	--	--
76	1	318	--	--	25.6	14	3	2	--	--	--	--
76	1	303	--	--	29.0	12	0	-1	--	--	--	--
76	2	310	405	--	20.9	16	-4	-3	--	--	--	--
76	2	297	333	--	26.1	32	5	1	--	--	--	--
76	2	302	397	--	29.5	27	4	-1	--	--	--	--
76	3	307	336	394	21.4	28	-1	-4	--	--	--	--
76	3	275	375	375	26.4	43	8	1	--	--	--	--
76	3	288	437	356	29.5	40	8	-1	--	--	--	--
77	1	367	--	--	22.4	79	33	17	--	--	--	--
77	1	466	--	--	24.4	82	41	21	--	--	--	--
77	1	389	--	--	30.6	88	60	37	--	--	--	--
77	2	426	691	--	21.8	90	59	37	--	--	--	--
77	2	424	631	--	25.7	91	67	46	--	--	--	--
77	2	553	676	--	31.2	91	67	47	--	--	--	--
77	3	378	507	594	22.2	93	73	54	40	--	--	--
77	3	389	591	602	25.3	94	77	61	48	--	--	--
77	3	420	699	505	29.7	94	78	61	48	--	--	--
78	1	347	--	--	18.1	91	62	40	26	--	--	--
78	1	384	--	--	23.2	91	73	56	42	--	--	--
78	1	363	--	--	26.0	93	78	62	50	--	--	--
78	2	358	454	--	18.8	95	80	64	52	43	35	--
78	2	365	522	--	23.0	95	85	72	62	54	46	--
78	2	349	542	--	25.5	96	86	75	66	58	51	--
78	3	342	471	516	19.3	96	85	73	63	55	47	27

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
78	3	379	547	469	23.4	97	89	80	72	65	58	42
78	3	366	552	495	23.6	97	89	80	72	66	59	43
79	1	249	--	--	21.4	38	5	1	--	--	--	--
79	1	253	--	--	24.9	48	11	7	--	--	--	--
79	1	243	--	--	27.6	42	2	-3	--	--	--	--
79	2	230	398	--	21.2	61	11	2	--	--	--	--
79	2	206	340	--	23.6	69	13	-2	--	--	--	--
79	2	217	338	--	28.3	69	19	6	--	--	--	--
79	3	214	298	416	21.2	69	12	1	--	--	--	--
79	3	228	282	375	23.8	73	19	2	--	--	--	--
79	3	266	287	355	31.0	74	29	8	--	--	--	--
80	1	457	--	--	21.9	49	9	4	--	--	--	--
80	1	508	--	--	26.2	48	14	6	--	--	--	--
80	1	520	--	--	26.5	58	13	5	--	--	--	--
80	2	452	613	--	21.9	75	23	9	--	--	--	--
80	2	485	610	--	24.1	76	28	12	--	--	--	--
80	2	476	604	--	27.4	80	33	12	--	--	--	--
80	3	472	527	564	22.0	82	33	14	--	--	--	--
80	3	483	540	574	24.1	83	40	19	--	--	--	--
80	3	--	518	485	27.6	86	44	16	--	--	--	--
81	1	478	--	--	19.1	20	-2	-3	--	--	--	--
81	1	466	--	--	23.4	27	0	-2	--	--	--	--
81	1	395	--	--	26.7	38	4	1	--	--	--	--
81	2	430	709	--	18.6	48	2	-2	--	--	--	--
81	2	447	709	--	24.2	51	10	5	--	--	--	--
81	2	458	672	--	25.8	51	6	2	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE_t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
81	3	403	630	576	18.9	58	8	4	--	--	--	--
81	3	432	649	742	23.7	58	11	3	--	--	--	--
81	3	429	702	672	27.4	61	13	7	--	--	--	--
82	1	384	--	--	18.6	34	-3	-4	--	--	--	--
82	1	469	--	--	24.8	46	6	3	--	--	--	--
82	1	432	--	--	26.6	48	4	0	--	--	--	--
82	2	402	722	--	19.2	52	0	-1	--	--	--	--
82	2	454	657	--	24.0	59	6	0	--	--	--	--
82	2	414	751	--	28.1	49	-2	-8	--	--	--	--
82	3	417	632	671	18.8	59	6	1	--	--	--	--
82	3	488	695	688	23.7	61	10	2	--	--	--	--
82	3	457	635	699	25.9	60	8	2	--	--	--	--
83	1	435	--	--	25.6	7	1	1	--	--	--	--
83	1	481	--	--	26.2	4	-1	-1	--	--	--	--
83	1	449	--	--	27.6	5	-2	-2	--	--	--	--
83	2	427	493	--	25.1	38	4	-1	--	--	--	--
83	2	466	553	--	26.0	35	4	1	--	--	--	--
83	2	487	587	--	26.9	40	4	-0	--	--	--	--
83	3	491	511	566	25.6	50	8	2	--	--	--	--
83	3	505	593	531	26.5	47	4	-3	--	--	--	--
83	3	495	548	550	26.4	53	7	0	--	--	--	--
84	1	345	--	--	19.6	34	2	-1	--	--	--	--
84	1	458	--	--	24.3	27	2	0	--	--	--	--
84	1	441	--	--	26.4	29	4	1	--	--	--	--
84	2	444	531	--	20.1	45	11	5	--	--	--	--
84	2	492	583	--	24.1	49	11	5	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		- - - - Ft ² /gal - - - -			Lb/ft ³	- - - - - Pct - - - - -						
84	2	442	682	--	25.8	49	12	4	--	--	--	--
84	3	413	563	707	20.3	44	12	6	--	--	--	--
84	3	462	624	668	22.8	46	9	3	--	--	--	--
84	3	492	658	682	24.8	46	12	6	--	--	--	--
85	1	309	--	--	22.3	43	3	-0	--	--	--	--
85	1	322	--	--	24.8	51	10	3	--	--	--	--
85	1	334	--	--	29.5	56	16	7	--	--	--	--
85	2	322	377	--	22.2	61	7	-1	--	--	--	--
85	2	324	442	--	25.4	67	21	8	--	--	--	--
85	2	337	460	--	30.2	68	22	7	--	--	--	--
85	3	281	415	415	21.4	70	18	7	--	--	--	--
85	3	298	381	438	25.0	75	28	10	--	--	--	--
85	3	329	485	404	30.6	75	32	14	--	--	--	--
86	1	395	--	--	24.7	30	3	1	--	--	--	--
86	1	471	--	--	26.2	27	2	-1	--	--	--	--
86	1	406	--	--	30.9	31	4	-2	--	--	--	--
86	2	404	591	--	24.3	37	6	2	--	--	--	--
86	2	432	594	--	26.1	37	9	2	--	--	--	--
86	2	410	621	--	30.9	40	9	3	--	--	--	--
86	3	386	580	653	24.6	43	7	1	--	--	--	--
86	3	331	636	562	25.9	46	8	0	--	--	--	--
86	3	406	689	583	31.4	44	10	1	--	--	--	--
87	1	390	--	--	22.3	17	1	1	--	--	--	--
87	1	411	--	--	24.0	31	0	-1	--	--	--	--
87	1	422	--	--	27.0	20	1	-2	--	--	--	--
87	2	385	602	--	21.9	41	4	-0	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
87	2	439	625	--	23.7	50	2	-3	--	--	--	--
87	2	443	634	--	27.2	44	9	1	--	--	--	--
87	3	398	588	580	21.8	48	6	-0	--	--	--	--
87	3	416	549	588	24.5	57	8	2	--	--	--	--
87	3	375	563	565	29.8	41	10	-2	--	--	--	--
88	1	478	--	--	20.5	26	-3	-3	--	--	--	--
88	1	445	--	--	25.0	37	2	-1	--	--	--	--
88	1	472	--	--	29.1	58	17	11	--	--	--	--
88	2	453	545	--	21.0	47	5	1	--	--	--	--
88	2	419	557	--	24.7	52	9	2	--	--	--	--
88	2	455	493	--	29.7	54	13	3	--	--	--	--
88	3	430	513	535	21.5	55	3	-2	--	--	--	--
88	3	460	557	597	25.2	58	11	1	--	--	--	--
88	3	427	554	577	30.1	61	20	7	--	--	--	--
89	1	389	--	--	23.2	33	7	5	--	--	--	--
89	1	419	--	--	23.8	34	-1	-3	--	--	--	--
89	1	411	--	--	30.1	41	2	-5	--	--	--	--
89	2	422	564	--	22.2	39	-1	-4	--	--	--	--
89	2	422	587	--	24.8	47	9	3	--	--	--	--
89	2	455	636	--	30.6	48	8	-1	--	--	--	--
89	3	432	507	569	21.9	47	6	-1	--	--	--	--
89	3	379	557	615	25.0	51	11	2	--	--	--	--
89	3	429	534	649	31.3	46	15	7	--	--	--	--
90	1	320	--	--	17.2	72	18	7	--	--	--	--
90	1	321	--	--	23.6	77	39	21	--	--	--	--
90	1	300	--	--	27.3	85	54	32	--	--	--	--

Table 1--Moisture-excluding effectiveness (MEE_t) of finishes on ponderosa pine sapwood after t days exposure at 90 pct relative humidity--con.

Finish	Number of coats	Coverage			Wood density	MEE _t for--						
		1 coat	2 coats	3 coats		t=1	t=7	t=14	t=21	t=28	t=35	t=60
		<u>Ft²/gal</u>			<u>Lb/ft³</u>	<u>Pct</u>						
90	2	324	417	--	17.1	83	33	14	--	--	--	--
90	2	307	446	--	21.8	86	51	31	--	--	--	--
90	2	304	453	--	24.2	89	59	36	--	--	--	--
90	3	303	440	437	17.1	87	44	20	--	--	--	--
90	3	298	432	401	22.5	87	57	38	--	--	--	--
90	3	312	451	402	24.9	89	63	42	--	--	--	--
91	1	367	--	--	21.6	6	-8	-8	--	--	--	--
91	1	337	--	--	23.4	2	-6	-5	--	--	--	--
91	1	361	--	--	28.5	8	-2	-2	--	--	--	--
91	2	344	502	--	21.1	12	-7	-7	--	--	--	--
91	2	304	382	--	23.4	12	-4	-5	--	--	--	--
91	2	297	436	--	28.3	9	-6	-6	--	--	--	--
91	3	357	410	469	20.8	20	-2	-3	--	--	--	--
91	3	362	433	492	23.8	23	-0	-1	--	--	--	--
91	3	372	425	430	26.8	24	-6	-7	--	--	--	--

Table 2--Moisture-excluding effectiveness (MEE_t) of three finishes on different wood substrates after t days exposure to 90 pct relative humidity

Finish	Substrate	Number of coats	Coverage			MEE_t for--						
			1 coat	2 coats	3 coats	t=1	t=7	t=14	t=21	t=28	t=35	t=60
			Ft ² /gal			Pct						
13	Western redcedar	1	358	--	--	58	18	5	--	--	--	--
13	Western redcedar	2	339	390	--	83	51	28	--	--	--	--
13	Western redcedar	3	313	356	436	88	66	48	--	--	--	--
13	Douglas-fir plywood	1	412	--	--	77	49	29	--	--	--	--
13	Douglas-fir plywood	2	374	498	--	90	75	60	49	--	--	--
13	Douglas-fir plywood	3	378	504	464	93	84	74	65	57	50	--
13	Flakeboard	1	450	--	--	52	25	15	--	--	--	--
13	Flakeboard	2	456	671	--	77	57	43	--	--	--	--
13	Flakeboard	3	481	611	880	85	71	60	50	--	--	--
13	Hardboard	1	314	--	--	88	54	37	--	--	--	--
13	Hardboard	2	324	425	--	93	70	55	46	--	--	--
13	Hardboard	3	307	450	438	94	78	64	55	49	--	--
13	Hard maple	1	361	--	--	89	72	57	47	--	--	--
13	Hard maple	2	357	380	--	94	84	73	65	60	53	35
13	Hard maple	3	428	376	427	95	87	78	71	66	60	44
13	Particleboard	1	307	--	--	61	34	22	--	--	--	--
13	Particleboard	2	317	469	--	77	53	40	--	--	--	--
13	Particleboard	3	294	459	420	89	73	62	54	47	--	--
13	Ponderosa pine	1	484	--	--	65	22	9	--	--	--	--
13	Ponderosa pine	2	458	510	--	88	61	41	--	--	--	--
13	Ponderosa pine	3	473	562	534	91	72	55	41	--	--	--
13	Red oak	1	387	--	--	76	51	38	--	--	--	--
13	Red oak	2	368	397	--	89	75	65	57	50	--	--
13	Red oak	3	363	419	377	92	81	72	65	58	55	37
13	Southern pine	1	575	--	--	75	48	29	--	--	--	--
13	Southern pine	2	543	726	--	92	79	65	54	46	--	--
13	Southern pine	3	577	724	888	94	86	77	69	64	59	50

Table 2--Moisture-excluding effectiveness (MEE_t) of three finishes on different wood substrates after t days exposure to 90 pct relative humidity--con.

Finish	Substrate	Number of coats	Coverage			MEE_t for--						
			1 coat	2 coats	3 coats	t=1	t=7	t=14	t=21	t=28	t=35	t=60
			Ft ² /gal			Pct						
67	Western redcedar	1	564	--	--	86	58	37	--	--	--	--
67	Western redcedar	2	507	851	--	93	75	58	46	--	--	--
67	Western redcedar	3	547	787	918	94	80	65	54	45	--	--
67	Douglas-fir plywood	1	342	--	--	94	84	74	63	54	46	--
67	Douglas-fir plywood	2	344	525	--	96	90	83	77	71	65	45
67	Douglas-fir plywood	3	348	504	471	97	93	88	84	79	75	62
67	Flakeboard	1	486	--	--	88	75	65	56	46	--	--
67	Flakeboard	2	498	787	--	92	83	76	69	62	56	37
67	Flakeboard	3	449	712	819	94	87	82	77	72	67	53
67	Hardboard	1	391	--	--	95	79	64	54	46	--	--
67	Hardboard	2	347	523	--	97	86	76	68	61	55	41
67	Hardboard	3	360	513	498	97	89	81	75	69	63	50
67	Hard maple	1	585	--	--	91	76	63	54	46	--	--
67	Hard maple	2	548	797	--	95	86	78	71	65	60	45
67	Hard maple	3	513	815	747	96	90	84	78	73	69	57
67	Particleboard	1	328	--	--	93	79	67	58	50	--	--
67	Particleboard	2	316	468	--	95	87	79	73	68	63	49
67	Particleboard	3	320	474	430	97	91	85	80	76	72	60
67	Ponderosa pine	1	411	--	--	93	74	56	41	--	--	--
67	Ponderosa pine	2	382	463	--	97	87	77	67	61	54	38
67	Ponderosa pine	3	366	378	444	98	91	85	78	73	67	54
67	Red oak	1	498	--	--	85	65	52	43	--	--	--
67	Red oak	2	513	711	--	92	79	70	62	54	48	--
67	Red oak	3	483	760	830	94	84	76	69	62	57	43
67	Southern pine	1	560	--	--	93	79	62	39	--	--	--
67	Southern pine	2	512	845	--	96	89	81	74	67	61	35
67	Southern pine	3	497	853	776	97	92	87	82	77	73	62

Table 2--Moisture-excluding effectiveness (MEE_t) of three finishes on different wood substrates after t days exposure to 90 pct relative humidity--con.

Finish	Substrate	Number o f coats	Coverage			MEE_t for--						
			1 coat	2 coats	3 coats	t=1	t=7	t=14	t=21	t=28	t=35	t=60
			- - - - Ft^2/gal - - - -			- - - - - Pct - - - - -						
30	Western redcedar	1	272	--	--	99	94	89	91	88	75	63
30	Douglas-fir plywood	1	291	--	--	83	59	42	--	--	--	--
30	Flakeboard	1	192	--	--	87	75	65	57	49	--	--
30	Hardboard	1	169	--	--	97	93	89	85	82	79	66
30	Hard maple	1	169	--	--	100	99	99	98	97	96	92
30	Particleboard	1	92	--	--	80	53	53	45	--	--	--
30	Ponderosa pine	1	448	--	--	100	97	94	92	90	87	79
30	Red oak	1	87	--	--	95	88	82	76	72	67	54
30	Southern pine	1	292	--	--	99	95	90	84	78	71	48

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹

Finish	Description	Composition by weight
		<u>Pct</u>
	EXTERIOR, UNPIGMENTED, NONAQUEOUS	
1	Brolite Z-Spar Linear Polyurethane, Clear LP-300 (Koppers Co.) 2-component.	
	Component A Polyester resin	33.6
	Ester solvents	66.3
	Additives	0.1
	Component B Polyfunctional aliphatic isocyanates	35.7
	Ester solvents	58.3
	Aromatic hydrocarbons	6.0
2	Brolite Z-Spar Wood Sealer, Clear S-120 (Koppers Co.)	
	Oil-soluble phenol-formaldehyde resin	10.4
	Linseed-tung oil	12.1
	Aliphatic and aromatic hydrocarbons	77.5
3	FPL Water Repellent	
	Exterior urethane varnish (50 pct solids)	20.0
	Paraffin wax	1.0
	Mineral spirits	79.0
4	Polymeric Roofing (U.S. Polycoat, Inc.)	
	Resins and plasticizers	26.2
	Pigments	6.9
	Reinforcing agents	5.3
	Volatile solvents	61.6

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
COMBINATION EXTERIOR/INTERIOR, UNPIGMENTED, NONAQUEOUS		
5	Anakar "M"	
	Modified butyl acrylo styro epoxy resin	--
	Chlorinated solvents	--
	Phenolic resins	--
6	Chem-Tech Sheathing Epoxy L-26, 2-component	
	Component A Epoxy resin	50.0
	Component B Hardener	50.0
7	Flecto Varathane Liquid Plastic, Clear Gloss, No. 90	
	Polyhydric alcohol partially esterified with linolenic, linoleic, oleic, palmitic and stearic acids and modified with tolylene diisocyanate	47.5
	Aliphatic hydrocarbons and driers	52.5
8	Hope's Pure Tung Oil	
	Tung oil	100
9	Iso-Flex, Polyurethane No. 611 (Harry S. Peterson Co.) 2-component	
	Component A Aromatic isocyanate prepolymer	42.0
	Xylene	29.0
	Cellosolve acetate	29.0
	Component B Hydroxyl compound	38.0
	Xylene	31.0
	Cellosolve acetate	31.0

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
10	Iso-Flex, Polyurethane, No. 611-A (Harry S. Peterson Co.) 2-component	
	Component A Aliphatic isocyanate prepolymer	42.0
	Xylene	29.0
	Cellosolve acetate	29.0
	Component B Hydroxyl compound	38.0
	Xylene	31.0
	Cellosolve acetate	31.0
11	Linseed Oil, (Hydrite Chem. Co.) Boiled	
	Linseed oil	100.0
12	Linseed Oil - Mineral Spirits	
	Linseed oil	50.0
	Mineral spirits	50.0
13	Mautz Exterior/Interior, Gloss V1-Ray Polyurethane, Clear, No. V-200	
	Oil-modified urethane resins	49.0
	Benzophenone	0.5
	Aromatic hydrocarbons	11.5
	Aliphatic hydrocarbons and driers	39.0
14	Mautz Spar Varnish, No. V-11	
	Soya alkyd resin	43.9
	Phenolic resin	3.7
	Tung oil	6.7
	Thinner and driers	45.7

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
15	Old Masters Polyurethane, Gloss (Darworth Co.)	
	Polyhydric alcohol esterified with linolenic, linoleic, oleic, palmitic and stearic fatty acids, modified with tolylene diisocyanate and inerts	45.3
	Aliphatic hydrocarbons	54.4
	Additives	0.3
16	Gloss ZAR Polyurethane Coating (United Gilsonite Labs)	
	Non-volatile-polyhydric alcohol partially esterified with linolenic, oleic, linoleic, palmitic and stearic acids, and modified with tolylene diisocyanate	52.0
	Volatile-aliphatic hydrocarbons	48.0
	INTERIOR, UNPIGMENTED, NONAQUEOUS	
17	City's Furniture Polish with Lemon Oil and Silicone	
	Spray polish	--
18	Deft Clear Wood Finish, Semi-Gloss	
	Nonvolatile nitrocellulose, coconut oil, alkyd stearates	21.5
	Volatile esters, glycol ethers, alcohols, aliphatic and aromatic hydrocarbons	78.5
19	Flecto Varathane Liquid Plastic, Clear, Satin, No. 91	
	Polyhydric alcohol partially esterified with linoleic, linolenic, oleic, palmitic and stearic acids modified with tolylene diisocyanate	44.8
	Driers and aliphatic hydrocarbons	55.2

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
20	Fuller-O'Brien Pen-Chrome Wood Finishes, Interior Clear, No. 650-00, Hi-Lustre	
	Soya alkyd resin	34.1
	Maleic resin	4.4
	China wood oil	1.8
	Aromatic hydrocarbons	5.8
	Mineral spirits and driers	53.9
21	Fuller-O'Brien, Pen-Chrome Wood Finishes, Interior, Clear, No. 650-01, Satin	
	Magnesium carbonate, silica, sterates	8.0
	Linseed alkyd resin	21.5
	Maleic resin	6.9
	China wood oil	2.7
	Mineral Spirits and Driers	60.9
22	Haeuser Pure Orange Shellac	
	Shellac	30.7
	Denatured alcohol	69.3
23	Haeuser Pure White Shellac	
	Shellac	30.7
	Denatured alcohol	69.3
24	Mautz Deluxe Epon Varnish, V-100	
	Epoxy ester resin	39.6
	Volatile thinner	59.2
	Concentrated driers	1.2

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
25	Mautz Floor Seal, Tung Oil Base, V-55	
	Phenolic resins	13.3
	Tung oil	20.3
	Aromatic hydrocarbons	3.2
	Aliphatic hydrocarbons and driers	62.2
26	Mautz Gym Seal V-65	
	Linseed oil	7.2
	Phenolic resins and tung oil	32.9
	Ester gum	8.2
	Mineral spirits and driers	51.7
27	Mautz Gloss Wood Finish, Clear V-103	
	Soya alkyd resin	41.5
	Thinners and driers	58.5
28	Mautz Satin Wood Finish, Clear, V-104	
	Pigmented flatting base	7.6
	Alkyd resins	21.9
	Thinners and driers	70.5
29	Old English Furniture Polish	
	Contains lemon creme, wax, and silicone (Spray polish)	--
30	Paraffin Wax (Gulfwax Co.)	
	Paraffin	100.0

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
31	Reliable Wallpaper Sealer, No. 8900, Clear	--
32	Trewax (Paste Wax)	
	No. 1 Brazilian Carnauba Wax (50 pct of solid wax content)	--
33	Valspar Val-Speed Epoxy Floor and Trim Sealer/Finish, No. 16, Clear, Gloss	
	Soya epoxy ester resin	30.0
	Aliphatic hydrocarbons	68.8
	Driers	1.5
34	Satin Zar Polyurethane Coating (United Gilsonite Labs.)	
	Non-volatile polyhydric alcohol, partially esterified with linolenic, oleic, linoleic, palmitic and stearic acids modified with tolylene diisocyanate	43.0
	Colloidal silica	2.0
	Volatile aliphatic hydrocarbons	55.0
35	Zynolyte Speed-E-Lac, Clear No. 0728	
	Nitrocellulose	9.9
	Oil modified alkyd resin	8.4
	Oil-free alcohol-derived alkyd resin	7.1
	Dialkyl phthalate	3.1
	Oxidized vegetable oil	2.5
	Esters, ketonic, and glycol ethers	31.1
	Alcohols	13.1
	Aromatic hydrocarbons	24.8

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
INTERIOR, UNPIGMENTED, AQUEOUS		
36	Aquakleer, Water-based Clear Finish, Gloss (Benjamin Moore and Co.) No. A-430 00-F	
	Acrylic resin	28.2
	Water and other solvents	71.8
37	Aquakleer, Water-based Clear Finish, Satin (Benjamin Moore and Co.) No. A-431 00-G	
	Acrylic resin	28.0
	Silica	1.5
	Water and other solvents	70.5
38	Aquathane (Foy-Johnston, Inc.) No. 3126	
	Silica and/or silicates	4.0
	Alkyd resin and driers	40.0
	Preservative (Phenyl/mercury acetate)	0.02
	Water	56.0
39	Deft Interior Acrylic Wood Armor, Clear Wood Finish, Gloss	
	Acrylic resin	33.0
	Wetting agents, etc.	1.0
	Coalescent	3.0
	Ethylene glycol and water	63.0
EXTERIOR, PIGMENTED, NONAQUEOUS		
40	Aluminum-Pigmented Varnish-1	
	Alcoa aluminum paste No. 6201	19.0
	Exterior urethane varnish, Mautz V-200	81.0

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
41	Aluminum-Pigmented Varnish-2	
	Alcoa aluminum paste No. 6205	20.8
	Exterior urethane varnish, Mautz V-200	79.2
42	Aluminum-Pigmented Varnish-3	
	Alcoa aluminum paste No. 6211	20.8
	Exterior urethane varnish, Mautz V-200	79.2
43	Aluminum-Pigmented Varnish-4	
	Alcoa aluminum paste No. 6230	20.3
	Exterior urethane varnish, Mautz V-200	79.7
44	Brolite Z-Spar Linear Polyurethane, Off-white LP-14393, (Koppers Co.), 2-component	
	Component A	
	Titanium dioxide	44.2
	Tinting colors	0.1
	Silicates	0.8
	Polyester resin	23.2
	Ester solvents	29.4
	Ketone solvents	2.2
	Additives	0.1
	Component B	
	Polyfunctional aliphatic isocyanates	35.7
	Ester solvents	58.3
	Aromatic hydrocarbons	6.0
45	Brolite Z-Spar Flat, Marine Enamel, No. 104 (Koppers Co.), White	
	Titanium dioxide	21.3
	Silicates	20.8
	Soya alkyd resin	19.1
	Driers	0.2
	Aliphatic hydrocarbons	35.6
	Aromatic hydrocarbons	3.0

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
46	Brolite Z-Spar Gloss Marine Enamel, No. 100 (Koppers Co.), White	
	Titanium dioxide, Type II	28.6
	Soya alkyd resin	36.7
	Metal driers	0.4
	Aliphatic hydrocarbons	34.3
47	Brolite Z-Spar Gloss Marine Enamel, No. 101 (Koppers Co.), White	
	Titanium dioxide, Type II	27.5
	Calcium carbonate	13.0
	Soya alkyd resin	29.4
	Metal driers	0.4
	Aliphatic hydrocarbons	29.8
48	Brolite Z-Spar Monopoxy, Gloss Enamel, Brilliant White, MO-200 (Koppers Co.)	
	Titanium dioxide	30.0
	Alkyd resin	29.2
	Additives	1.9
	Aromatic solvents	7.6
	Aliphatic solvents	31.3
49	Brolite Z-Spar Undercoat, No. 105, (Koppers Co.), White,	
	Titanium dioxide, Type II	16.0
	Zinc oxide	2.8
	Silicates	33.9
	Soya-linseed alkyd resin	14.1
	Hydrocarbon resin	2.5
	Driers	1.6
	Aliphatic hydrocarbons	26.9
	Aromatic hydrocarbons	2.2

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight <u>Pct</u>
50	FPL Natural Finish, Cedar Brown	
	Boiled linseed oil	61.0
	Pentachlorophenol	5.0
	Paraffin wax	1.3
	Pigments	8.4
	Mineral spirits	24.3
51	Lindsay Cedar Brown Stain	
	Manufactured according to the recommended formula for FPL natural finish (No. 50)	
52	Mautz Ranch Tone, No. 270, White	
	Titanium dioxide	20.2
	Calcium carbonate	7.3
	Mica	3.7
	Silica and silicates	11.0
	Soya alkyd resin	13.5
	Linseed oil	6.4
	Mineral spirits and driers	37.9
53	Mautz Universal Exterior Primer, No. 21-25, White	
	Titanium dioxide	16.0
	Silica and silicates	28.0
	Soya alkyd resin	19.7
	Mineral spirits and driers	36.3
54	Moore's Polysilicone High Gloss Enamel, No. 120-01, White	
	Titanium dioxide	25.6
	Soya-silicone alkyd	36.1
	Drier	0.8
	Mineral spirits and driers	37.5

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
55	Olympic Semi-transparent Stain No. 713 Linseed oil base plus pigments in petroleum solvents	--
56	Olympic Solid Color Oil Stain, Oxford Brown Linseed oil base plus pigments in petroleum solvents	--
57	Sherwin-Williams Gloss oil-base paint, House and Trim No. 101-1840, ADW24, Perma White	
	Titanium dioxide	22.0
	Silicates	4.0
	Tall alkyd resin	24.0
	Soya alkyd resin	14.0
	2,4,5,6-tetrachloroisophthalonitrile	1.0
	Mineral spirits	35.0
58	Sherwin-Williams Exterior Wood Primer Y24 W16, White	
	Titanium dioxide	10.0
	Silicates	35.0
	Tall maleic alkyd resin	25.0
	Soya alkyd resin	3.0
	Preservatives	1.0
	Mineral spirits	26.0
	COMBINATION EXTERIOR/INTERIOR, PIGMENTED, NONAQUEOUS	
59	Derusto Epoxy Enamel (Master Bronze Powder Co.) No. E-411, Intense White	
	Titanium dioxide	17.6
	Magnesium silicate	0.5
	High molecular weight epoxy resin	23.0
	Glycol ethers, ketones and aromatic hydrocarbons	58.9

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)1--con.

Finish	Description	Composition by weight
		<u>Pct</u>
60	Fuller O'Brien Ful-Hide Pigmented Shellac, No. 2-7870, White	
	Titanium pigments	25.0
	Inert pigments	6.7
	Non-volatile vehicle (shellac)	21.5
	Volatile vehicle	46.8
61	Kilz Universal Sealer-Primer-Stain Killer (Masterchem Industries)	
	Titanium dioxide	15.2
	Selected clays	7.6
	Magnesium silicates	17.2
	Resins	30.0
	Aliphatic hydrocarbons	28.8
	Driers and additives	1.2
62	Lindsay Interior-Exterior Floor and Deck Enamel, Deck Gray	
	Titanium dioxide	24.0
	Phenolic alkyd	59.4
	Thinner and drier	16.6
63	Lindsay Epoxy Kote-Gloss (2-component)	
	Titanium dioxide	28.3
	Epoxy solids	18.0
	Polyamide solids	14.7
	Solvents and additives	39.0
64	Lindsay Epoxy Kote-Stain (2-component)	
	Titanium dioxide	28.3
	Flatting pigments	4.0
	Epoxy solids	18.0
	Polyamide solids	14.7
	Solvents and additives	35.0

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
65	Mautz Aluminum Paint for Metal and Masonry, No. 1300	
	Aluminum pigment	19.3
	Ester gum resin	4.8
	Vegetable oil	35.1
	Mineral spirits and driers	40.8
66	Mautz Utility Aluminum Paint, No. 1350	
	Aluminum pigment	14.4
	Petroleum resin	43.0
	Mineral spirits and driers	42.6
67	Mautz Deluxe Enamel Satin Finish, No. E-725, White	
	Titanium dioxide	26.3
	Zinc oxide	0.5
	Calcium carbonate	15.3
	Silica and silicates	8.7
	Soya tung alkyd resin	23.1
	Mineral spirits and driers	26.1
68	Mautz Floor and Deck Enamel, No. 1600, Gloss, White	
	Titanium dioxide	19.9
	Calcium carbonate	5.0
	Soya-linseed alkyd resin	31.5
	Mineral spirits and driers	43.6

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
69	Mautz Gloss Finish Epoxy Enamel, No. 920, C-920, White, 2-component	
	Component A, No. C-920	Epoxy resin 46.0 Aromatic hydrocarbons 15.5 Alcohols 12.0 Glycol ether 26.5
	Component B, No. 920	Titanium dioxide 48.2 Polyamide resin 22.5 Aromatic hydrocarbons 22.0 Alcohol 7.3
70	Parks Quick Drying Sealer-Primer Pigmented Shellac, White	
	Titanium dioxide	20.1
	Silicates	13.9
	Resins, shellac	19.4
	Alcohols	47.6
71	Rust-Oleum Ready-mixed Aluminum Paint, No. 470	
	Aluminum paste, Type 2, Class B	13.0
	Linseed phenolic and menhaden phenolic resin	36.3
	Petroleum distillate	49.3
	Aromatic hydrocarbon	1.4
72	Rust-Oleum High Gloss, No. 2766, White	
	Titanium dioxide, Type II	26.7
	Linseed-menhaden alkyd resin	34.2
	Petroleum distillate	39.1
73	Rust-O-Thane, Polyurethane Enamel, No. 9492, 9401, White, 2-component	
	A polyurethane containing aliphatic polyisocyanate, ketones, esters, and glycol ether acetate	--

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
74	Valspar Heavy Duty Alkyd Gloss Enamel, No. 1286, White	
	Titanium dioxide, Type III	26.9
	Soya alkyd resin solids	34.6
	Aliphatic hydrocarbons and driers	38.5
75	X.I.M. Instant Spot Primer and Sealer	
	Unknown contents	--
	INTERIOR, PIGMENTED, NONAQUEOUS	
76	Mautz Alkyd Low-Odor One-Coat Flat	
	Titanium dioxide	12.2
	Calcium carbonate	42.7
	Silica and silicates	6.6
	Soya alkyd resin	7.7
	Mineral spirits and driers	30.8
77	Mautz Deluxe Enamel Gloss Finish, No. 725, White	
	Titanium dioxide	32.3
	Zinc oxide	2.3
	Soya alkyd resin	34.9
	Mineral spirits and driers	30.5
78	Mautz Semi-Gloss Enamel, No. 400, White	
	Titanium dioxide	20.1
	Zinc oxide	2.0
	Calcium carbonate	20.1
	Silica and silicates	4.0
	Soya-linseed alkyd resin	22.8
	Mineral spirits and driers	31.0

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
EXTERIOR, PIGMENTED, AQUEOUS		
79	Lucite Latex Wood Primer (DuPont Co.), No. 51C, White	
	Titanium dioxide, Type IV	15.0
	Zinc oxide	3.0
	Silica	3.0
	Acrylic resin	28.0
	Additives	2.0
	Ethylene glycol	4.0
	Water	45.0
80	Lucite Latex Wood Topcoat (DuPont Co.), No. 50C, White	
	Titanium dioxide, Type IV	14.0
	Titanium dioxide, Type I	3.0
	Silicates	12.0
	Acrylic resin	19.0
	Additives	2.0
	Water	50.0
81	Mautz Latex House Paint Non-Chalking, No. 21-10, White	
	Titanium dioxide	15.4
	Calcium carbonate	17.6
	Mica	2.6
	Acrylic resin	21.6
	Water and dispersants	42.8
82	Mautz Self-Cleaning Latex House Paint, No. 21-00, White	
	Titanium dioxide	20.6
	Silica and silicates	14.4
	Mica	2.4
	Acrylic resin	20.1
	Water and dispersants	42.5

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
83	Olympic Solid Color Latex Stain, Oxford Brown	
	Acrylic latex base in water dispersant	--
84	Sherwin-Williams Latex House Paint, A-100 Perma-white, 100-4050, A6W1	
	Titanium dioxide	18.0
	Zinc oxide	4.0
	Silicates	11.0
	Acrylic resin	15.0
	Soya alkyd resin	2.0
	Water	50.0
	COMBINATION, EXTERIOR/INTERIOR, PIGMENTED, AQUEOUS	
85	Luminall Epoxy Latex Concrete Floor Paint No. 23325 Birch Gray	
	Titanium dioxide	16.3
	Mica	2.3
	Calcium carbonate	9.3
	Acrylic resin	19.2
	Epoxy ester resin	2.3
	Water	50.6
86	Parks Pigmented latex Shellac, First Coat Primer	
	Titanium dioxide	16.3
	Silicates	13.3
	Shellac acrylic resin	20.4
	Water	50.0

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
INTERIOR, PIGMENTED, AQUEOUS		
87	Elliotts' Best Vinyl Acrylic All-Purpose Primer Latex Enamel Undercoat and Stain Kill, No. F90-747, White	
	Titanium dioxide, Type III	12.7
	Lithopone	8.2
	Silicates	20.4
	Vinyl acetate-acrylic resin	14.4
	Water	44.3
88	Fuller O'Brien Ful-Flo Latex Satin Enamel No. 614-00, White	
	Titanium dioxide, Type II	22.2
	Barium sulfate	4.4
	Acrylic resin	22.6
	Glycols	15.3
	Water	35.5
89	Fuller-O'Brien, Ful-Shield Latex Flat Enamel, No. 603-00, White	
	Titanium dioxide, Type II	12.5
	Titanium dioxide, Type III	9.9
	Silicates	5.8
	Acrylic resin	19.8
	Glycols	0.9
	Methyl cellulose	<0.1
	Water	51.0
90	Insul-Aid Vapor Barrier Latex Primer-Sealer (Glidden Paint Co.)	
	Titanium dioxide, Type III	8.8
	Barium sulfate	4.6
	Silica and silicates	18.5
	Butadiene-styrene resin	23.1
	Additives	2.0
	Water	43.0

Table 3.--Description and composition of each of 91 wood finishes. (This is information as supplied by the manufacturer, being obtained usually from a label on the container)¹--con.

Finish	Description	Composition by weight
		<u>Pct</u>
91	Mautz Rubber Satin, No. 100, White	
	Titanium dioxide	16.5
	Silica and silicates	8.6
	Calcium carbonate	12.9
	Vinyl acrylic resin	11.5
	Water and dispersants	50.5

¹The use of trade and company names is for the benefit of the reader; such use does not constitute an official endorsement or approval of any service or product by the U.S. Department of Agriculture to the exclusion of others that may be suitable.