

EXTERIOR 450 PERFORMANCE DATA



**Excellent exterior
durability & color
retention**

**Excellent adhesion to
multiple substrates**

**Outstanding water
resistance**

**Wide range of
applications**

General Finishes, 2462 Corporate Circle, East Troy, WI 53120 www.generalfinishes.com
The Country's Finest Full Line Manufacturer of Wood Finishing Products

EXTERIOR 450 PERFORMANCE DATA



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3 Year Exterior Exposure Florida 45° Diagonal South

Substrate **Southern Yellow Pine**

Test Method: **AC-04-35**

Exposure **Florida 45° South**

System: **Exterior 450 High Gloss System**

	Ext. 450	Ext. 450	Competitor	Competitor	Competitor	Competitor
	Untinted	Tinted	A	A	B	B
	Untinted	Tinted	Untinted	Tinted	Untinted	Tinted
Gloss @ 60/20 Initial (*B.E.)	67/14	65/10	75/20	70/12	74/18	72/12
Gloss @ 60/20 Unwashed	7/1	7/1	7/1	7/1	3/1	3/1
Gen Appearance	7	7	7	7	6	7
Dirt Pickup	6	6	7	7	6	6
Mildew	8	8	8	8	7	8
Blistering	10	10	10	10	10	10
Grain Cracking	9	9	9	9	3	9
Flaking	10	10	10	10	10	10
Yellowing	10	10	10	10	2	10
Chalking	5	5	5	5	3	5
Total	65	65	66	66	47	65

*B.E.: Before Exposure

Note: All competitor samples were formulated utilizing suggested competitor starting point formulas. All tinted systems contained 2 oz/gal of Huls 888-7214 Phthalo Blue. All tested samples were formulated at PVC of 17- 18%.

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EXTERIOR 450 PERFORMANCE DATA



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Outdoor Durability Exterior 450 White Pigmented

Starting point formulation C-830

	Initial			1 Year			3 Years			5 Years			8 Years			10 years	12 years
	1 layer	2 layers	3 layers	1 layer	2 layers	3 layers	1 layer	2 layers	3 layers	1 layer	2 layers	3 layers	1 layer	2 layers	3 layers	3 layers	3 layers
Cracking surface	10	10	10	7	9	9	8	9	9	6	8	9	4	8	9	7	7
Cracking edges	10	10	10	8	9	9	8	9	9	4	5	5	2	4	5	4	4
Chalking	10	10	10	10	10	10	10	10	10	9	9	9	-	8	8	7	7
Blistering	10	10	10	10	10	10	10	10	10	10	10	10	-	10	10	10	10
Flaking	10	10	10	10	10	10	10	10	10	8	9	9	-	9	9	8	8
Dirt pick up	10	10	10	6	6	6	6	6	6	6	6	6	-	6	6	5	4
Overall performance	10	10	10	8	9	9	8	9	9	5	7	7	4	6	7	6	6

<u>Key:</u>																	
10 = Excellent																	
0 = Poor																	
<u>Exposure:</u>	Angle:45° (The Netherlands)			3 layers C-485: dry film thickness 100µm													
	Southside			3 layers C-830: dry film thickness 120µm													
	Substrate: pine wood																

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EXTERIOR 450 PERFORMANCE DATA



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Outdoor durability Exterior 450 High Gloss System

Starting point formulation C-485

	Initial			1 Year			3 Years			5 Years			6 Years			8 years	10 years
	1 layer	2 layers	3 layers	1 layer	2 layers	3 layers	1 layer	2 layers	3 layers	1 layer	2 layers	3 layers	1 layer	2 layers	3 layers	3 layers	3 layers
Cracking surface	10	10	10	4	8	10	3	8	10	1	6	9	-	6	8	8	5
Cracking edges	10	10	10	9	9	10	5	9	10	1	2	4	-	1	4	4	3
Blistering	10	10	10	10	10	10	10	10	10	-	10	10	-	10	10	10	8
Flaking	10	10	10	8	10	10	8	10	10	-	9	9	-	9	9	9	8
Dirt pick up	10	10	10	9	9	9	9	9	9	-	9	9	-	9	9	9	9
Overall performance	10	10	10	5	9	10	4	9	10	1	5	7	-	5	7	7	5

Key:

10 = Excellent

0 = Poor

Exposure:

Angle: 45°

Southside

Substrate: pine wood

3 layers C-485: dry film thickness 100µm

3 layers C-830: dry film thickness 120µm

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EXTERIOR 450 PERFORMANCE DATA



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PANEL		W LXXV 65A				W LXXV 65B				W LXXV 68A				W LXXV 68B						W LXXV 79A				W LXXV 79B				W LXXV 82A				W LXXV 82B			
SUBSTRATE		Hardie Brd				Hardie Brd				Hardie Brd				Hardie Brd						Hardie Brd				Hardie Brd				Hardie Brd				Hardie Brd			
PIGMENTED		White				White				White				White						Phthalo Blue				Phthalo Blue				Phthalo Blue				Phthalo Blue			
PRIMER		Self Prim ed				Self Prim ed				Self Prim ed				Self Prim ed						Self Prim ed				Self Prim ed				Self Prim ed				Self Prim ed			
TOPCOAT		Exterior 450								Exterior 450										Exterior 450								Exterior 450							
COATS		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
INITIAL																																			
Initial Gloss @ 60		23	41	59	20	45	61	31	45	56	31	54	62	26	44	51	19	34	53	23	40	49	18	38	46										
Initial Gloss @ 20		4	7	17	4	9	18	6	10	12	6	16	17	4	9	11	3	6	13	4	9	10	3	8	11										
24 MONTHS																																			
Gloss @ 60		14	24	37	13	31	32	19	22	28	17	32	33	14	23	28	12	21	27	15	29	28	14	19	27										
Gloss @ 20		3	3	4	2	4	4	3	3	3	3	4	4	2	2	3	2	2	2	2	3	3	2	2	2										
Gen Appearance	1-10	9	9	9	9	9	9	9	9	9	9	9	9	1-10	9	9	9	9	9	9	9	9	9	9	9	9									
Dirt Pickup	1-10	9	9	9	9	9	9	8	8	8	8	8	8	1-10	8	8	8	8	8	8	8	8	8	8	8	8									
Mildew	1-10	10	10	10	10	10	10	10	10	10	9	10	10	1-10	10	10	10	9	10	10	9	10	10	9	10	10									
Blistering	1-10	10	10	10	10	10	10	10	10	10	10	10	10	1-10	10	10	10	10	10	10	10	10	10	10	10	10									
Grain Cracking	1-10	10	10	10	10	10	10	10	10	10	10	10	10	1-10	10	10	10	10	10	10	10	10	10	10	10	10									
Flaking	1-10	8	8	10	8	10	10	9	10	10	9	10	10	1-10	9	10	10	9	10	9	9	8	10	8	10	10									
Yellowing	1-10	10	10	10	10	10	10	10	10	10	10	10	10	1-10	6	6	6	6	6	6	6	6	6	6	6	6									
Chalking	1-10	6	6	6	6	6	6	4	6	6	6	4	5	1-10	10	10	10	10	10	10	10	10	10	10	10	10									
Total		72	72	74	72	74	74	70	73	73	71	71	72	72	73	73	71	73	72	71	71	73	70	73	73										

Exposure Wilmington, MA – 24 Month – 45° South – Hardyboard Pre-Primed

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EXTERIOR 450 PERFORMANCE DATA



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PANEL		FLXXV 65A			FLXXV 65B			FLXXV 68A			FLXXV 68B				FLXXV 79A			FLXXV 79B			FLXXV 82A			FLXXV 82B		
SUBSTRATE		Hardie Brd			Hardie Brd			Hardie Brd			Hardie Brd				Hardie Brd			Hardie Brd			Hardie Brd			Hardie Brd		
PIGMENTED		White			White			White			White				Phthalo Blue			Phthalo Blue			Phthalo Blue			Phthalo Blue		
PRIMER		Self Primed			Self Primed			Self Primed			Self Primed				Self Primed			Self Primed			Self Primed			Self Primed		
TOPCOAT		Exterior 450						Exterior 450							Exterior 450						Exterior 450					
COATS		1	2	3	1	2	3	1	2	3	1	2	3		1	2	3	1	2	3	1	2	3	1	2	3
INITIAL																										
Initial Gloss @ 60		20	47	57	24	48	53	31	49	49	25	44	60		16	34	50	16	41	53	22	38	47	25	43	46
Initial Gloss @ 20		4	11	16	4	12	13	6	11	11	4	11	16		3	7	13	3	8	14	3	8	9	4	9	8
24 MONTHS (9/24/03)																										
Gloss @ 60		8	10	8	8	12	11	-	-	-	-	-	-		4	5	8	8	9	7	6	7	7	6	6	7
Gloss @ 20		1	1	1	1	2	2	-	-	-	-	-	-		1	1	1	1	1	1	1	1	1	1	1	1
Gen Appearance	1-10	9	9	9	9	9	9	-	-	-	-	-	-	1-10	9	9	9	9	9	9	8	8	8	8	8	8
Dirt Pickup	1-10	7	6	6	6	6	6	-	-	-	-	-	-	1-10	5	5	5	5	5	5	5	5	5	5	5	5
Mildew	1-10	10	10	10	10	10	10	-	-	-	-	-	-	1-10	9	10	10	9	10	10	9	10	10	9	10	10
Blistering	1-10	10	10	10	10	10	10	-	-	-	-	-	-	1-10	10	10	10	10	10	10	10	10	10	10	10	10
Grain Cracking	1-10	10	10	10	10	10	10	-	-	-	-	-	-	1-10	10	10	10	10	10	10	10	10	10	10	10	10
Flaking	1-10	10	10	10	10	10	10	-	-	-	-	-	-	1-10	10	10	10	10	10	10	10	10	10	10	10	10
Yellowing	1-10	10	10	10	10	10	10	-	-	-	-	-	-	1-10	8	6	6	8	6	6	4	4	4	4	4	4
Chalking	1-10	7	4	4	7	4	4	-	-	-	-	-	-	1-10	10	10	10	10	10	10	10	10	10	10	10	10
Total		73	69	69	72	69	69	Board Lost				71	70	70	71	70	70	66	67	67	66	67	67	66	67	67

Exposure FLORIDA – 24 Month – 45° South – Hardyboard Pre-Primed

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EXTERIOR 450 PERFORMANCE DATA



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Pressure Treated Pine								
	51S-27A		51S-27B		51S-28C		51S-28D	
	WB-4176 Neutral		WB-4176 Neutral		WB-4176 Neutral		WB-4176 Neutral	
	1 coat		1 coat		2 coats		2 coats	
	Un-Primed	Primed	Un-Primed	Primed	Un-Primed	Primed	Un-Primed	Primed
	51s-15 Red	51s-15 Red						
	<u>Initial</u>		<u>Initial</u>		<u>Initial</u>		<u>Initial</u>	
Gloss @ 60	5	10	8	11	10	13	10	12
Gloss @ 85	8	17	14	16	18	24	15	22
Adhesion	5A	5A	5A	5A	5A	3A	5A	4A
	1.5 yrs.		1.5 yrs.		1.5 yrs.		1.5 yrs.	
Gloss @ 60	6	6	6	5	7	7	6	7
Gloss @ 85	11	13	14	16	14	15	11	16
Adhesion	5A	5A	5A	5A	5A	5A	5A	5A
	4.5 yrs.		4.5 yrs.		4.5 yrs.		4.5 yrs.	
Gloss @ 60	4.9	6.1	3.4	2.9	5	5.3	6.6	7
Gloss @ 85	8.6	13.8	6.5	7.3	12.4	13	15.4	17.5
Adhesion	5A	5A	5A	5A	5A	5A	5A	5A

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EXTERIOR 450 PERFORMANCE DATA



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Solid Base 4.5 yrs. Exposure Pressure Treated Pine

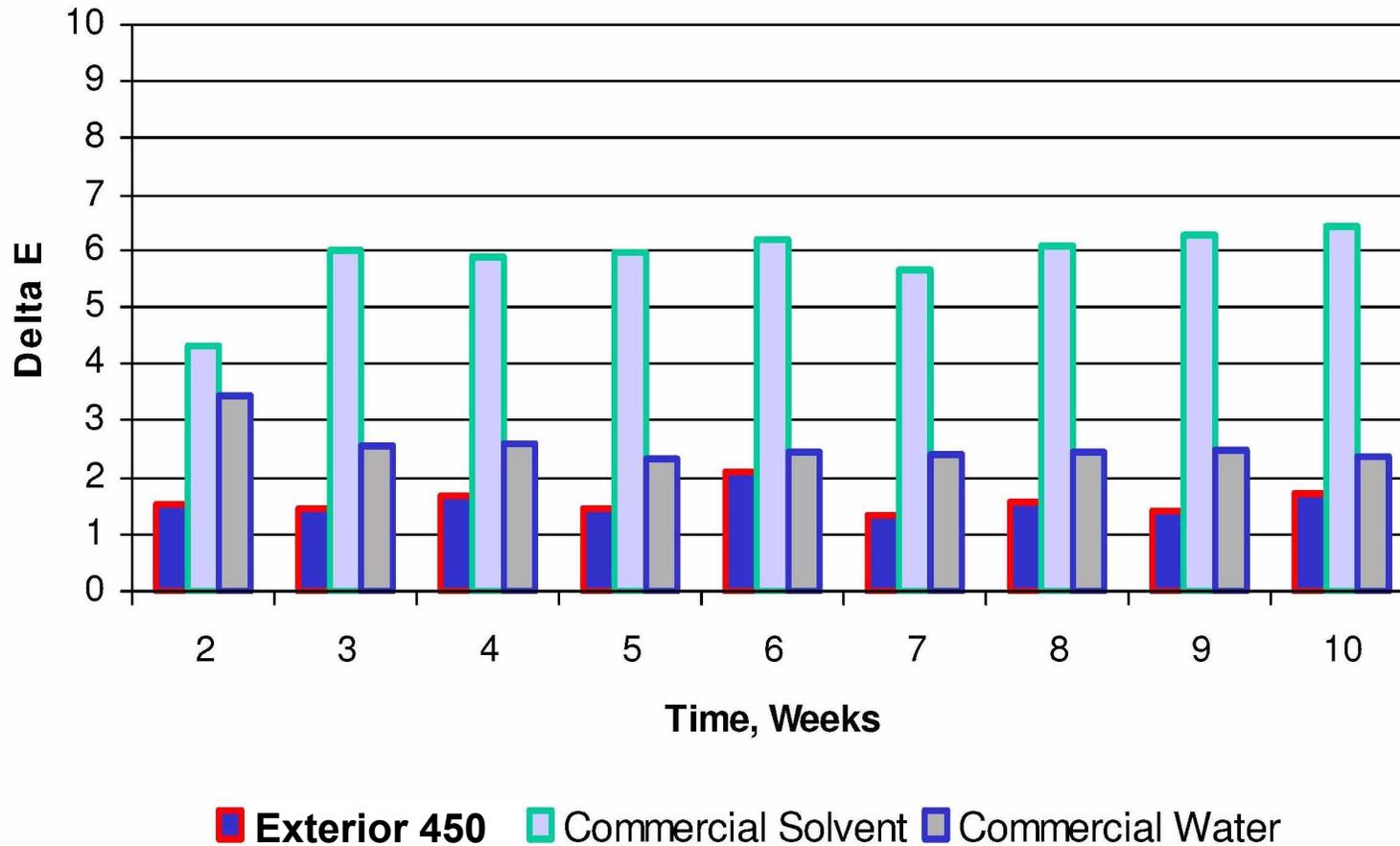
	51S-25A WB-4177 Solid		51S-25B WB-4177 Solid		51S-26C WB-4177 Solid		51S-26D WB-4177 Solid	
	1 coat		1 coat		2 coats		2 coats	
	Self-Primed 51s-19 Dusk	Primed 51s-19 Dusk						
	<u>Initial</u>		<u>Initial</u>		<u>Initial</u>		<u>Initial</u>	
Gloss @ 60	8	10	7	9	10	12	11	11
Gloss @ 85	14	18			22	25	23	25
Adhesion	5A	5A	5A	5A	5a	5a	5A	5A
	1.5 yrs.		1.5 yrs.		1.5 yrs.		1.5 yrs.	
Gloss @ 60	4	7	3	4	5	4	4	5
Gloss @ 85	13	16			17	15	13	17
Adhesion	5A	5A	5A	5A	5A	5A	5A	5A
			4.5 yrs.		4.5 yrs.			
Gloss @ 60	Board Lost		4	6	5	6	Board Lost	
Gloss @ 85			14	20	20	23		
Adhesion			5A	5A	5A	5A		

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Exterior 450 Deck Stain, Color Retention, QUV Exposure



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EXTERIOR 450 PERFORMANCE DATA



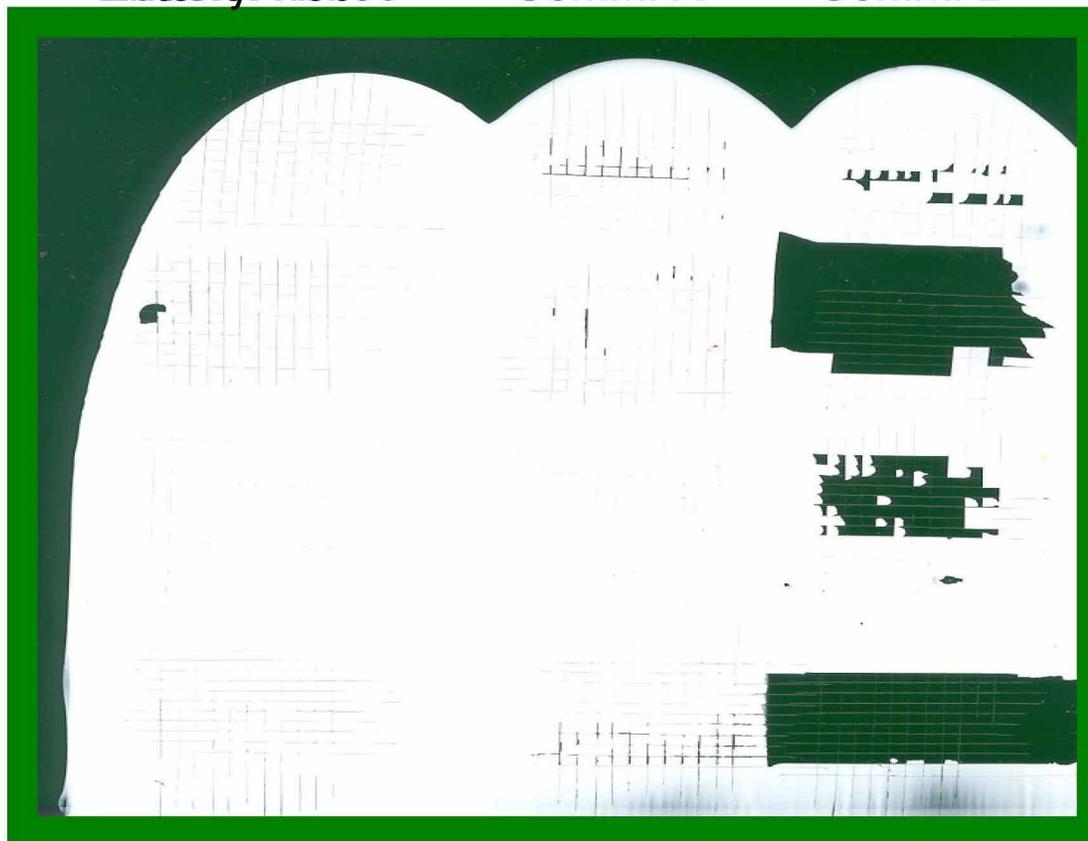
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Adhesion to Aged Alkyd

Exterior 450

Comm. A

Comm. B



24 Hour Dry

24 Hour Wet

7 Day Dry

7 Day Wet

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EXTERIOR 450 PERFORMANCE DATA



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Adhesion to Trexx (Plastic Composite Decking)

	Exterior 450	Olympic	Commercial B	Commercial C
24 Hours Dry				
24 Hours Wet				
7 Days Dry				
7 Days Wet				

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EXTERIOR 450 PERFORMANCE DATA



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WDMA (Window & Door Manufacturers Association) Specs

- Boiling Water Adhesion **PASS**
- Water Soak Adhesion **PASS**
- Dry Adhesion **PASS**
- Block Resistance **PASS**
- Muriatic Acid Resistance **PASS**
- Mortar Resistance **PASS**

EXTERIOR 450 PERFORMANCE DATA



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FOR YOU PROTECTION

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