

Inspection ReportProject No. 16

Exposure Site: Miami, Florida
Type of Exposure: Total Salt Water
Immersion
Date Exposed: February, 1949
Date Inspected: November 10, 1949
Elapsed Time: 9 Months
Inspected by: George Diehlman

Project No. 17

Exposure Sites: Miami, Florida
Types of Exposure: Land and Tide
Range
Date Exposed: February, 1949
Date Inspected: Nov. 10, 1949
Elapsed Time: 9 Months
Inspected by: George Diehlman

L.I.A. PROJECT NO. 16
 BOTTOM PAINT SYSTEMS EXPOSED
 BY NAVY

Location: Miami, Florida
 Type Exposure: Total Immersion
 Exposure Dates:
 Inspection Dates:

PANEL NO.	Corrosion	Blistering	Peeling	Scaling	Cracking	Fouling	PRETREATMENT		ANTICORROSION			ANTIPOULING		
							WASH PRIMER	NAVY PHOS.	PAINT NO.	NO. OF COATS	DRY FILM THICK. MILS.	PAINT NO.	NO. OF COATS	DRY FILM THICK. MILS.
1A	5	6	6	8	8	5	-	X	33	2	2.5	Navy 105	2	5.5
1B	5	6	6	8	8	5	-	X	33	2	3.0	Navy 105	2	5.5
2A	10	8	10	10	9	8	306	-	33	2	2.75	Navy 105	2	5.25
2B	9	8	10	10	9	8	306	-	33	2	2.75	Navy 105	2	5.25
3A	5	6	8	8	8	6	-	X	35	2	3.0	Navy 105	2	6.0
3B	5	6	8	8	8	6	-	X	35	2	3.25	Navy 105	2	6.25
4A	10	9	10	10	10	9	306	-	35	2	3.0	Navy 105	2	5.5
4B	10	8	10	10	10	9	306	-	35	2	3.0	Navy 105	2	5.0
5A	10	9	9	10	9	8	-	X	327	2	3.5	Navy 105	2	5.0
5B	10	8	9	10	9	8	-	X	327	2	3.5	Navy 105	2	5.0
6A	9	6	10	10	9	9	306	-	327	2	3.5	Navy 105	2	5.5
6B	9	6	8	10	9	7	306	-	327	2	3.0	Navy 105	2	5.5
7A	10	9	10	10	10	9	-	X	328	2	4.0	Navy 105	2	4.5
7B	10	10	10	10	10	9	-	X	328	2	4.5	Navy 105	2	5.5
8A	10	10	10	10	10	10	306	-	328	2	4.5	Navy 105	2	5.5
8B	10	10	10	10	10	10	306	-	328	2	5.0	Navy 105	2	5.0
9A	9	7	7	8	9	9	339	-	328	2	4.5	Navy 105	2	5.5
9B	9	7	7	8	9	9	339	-	328	2	4.5	Navy 105	2	5.5
10A	3	7	6	7	8	9	-	X	338	2	2.5	Navy 105	2	5.0
10B	3	7	6	7	8	9	-	X	338	2	3.5	Navy 105	2	5.5
11A	10	9	10	10	10	10	306	-	338	2	3.0	Navy 105	2	5.5
11B	10	9	10	10	10	9	306	-	338	2	2.75	Navy 105	2	5.0
12A	10	10	10	10	10	9	306	-	336	4	3.25	337	4	5.75
12B	10	10	10	10	10	8	306	-	336	4	3.5	337	4	5.0
13A	10	9	10	10	10	9	339	-	336	4	3.5	337	4	5.5
13B	10	6	10	10	10	9	339	-	336	4	3.0	337	4	6.5
14A	10	8	10	10	10	8	306	-	326	4	3.5	337	4	6.5
14B	10	9	10	10	10	8	306	-	326	4	3.75	337	4	5.0

PANEL NO.	Corrosion	Blistering	Peeling	Sealing	Cracking	Foeling	PRETREATMENT		ANTICORROSIVE			ANTIPOULING		
							WASH PRIMER	NAVY PHOS.	PAINT NO.	NO. OF COATS	DRY FILM THICK. MILS	PAINT NO.	NO. OF COATS	DRY FILM THICK. MILS
15A	10	9	10	10	10	8	339	-	326	4	3.5	337	4	5.5
15B	10	9	10	10	10	8	339	-	326	4	3.5	337	4	5.5
33A	10	10	10	10	7	8	Navy	X	Navy	1	19.0	Navy	2	6.0
33B	10	10	10	10	7	8	M-14	X	7-09A	1	20.0	105	2	6.0
44A	9/	9/	10	9	9/	9/	-	X	Wk. 55-SLA	2	4.5	Navy	2	5.5
44B	9/	9/	10	9	9/	10	-	X	55-SLA	2	4.25	105	- 2	5.75
35A	10	10	10	10	10	9/	-	X	Wk. 147-85	1	24.0	Navy	- 2	6.0
35B	10	10	10	10	10	9/	-	X	147-85	1	20.0	105	- 2	6.0
36A	10	9	10	10	10	7	-	X	Navy	2	3.0	Navy	2	6.5
36B	10	9	10	10	10	9	-	X	14	2	3.5	105	2	6.0
37A	10	10	10	10	10	8	-	X	Navy	2	3.0	Navy	1	22.0
37B	10	10	10	10	10	8	-	X	14	2	3.5	15HP	2	20.0

X - 5% Phosphoric acid wash.

All paints spray applied with each coat given a double pass.

PROJECT NO. 16 - PAINT COMPOSITIONS

INGREDIENTS PERCENT	33	35	326	327	328	336	338	337(A7)
Red Lead (97% Grade)	55.0	54.6	75.3	55.0	47.0	100.0	54.6	-
Zinc Oxide (Lead Free)	10.0	9.9	-	10.0	8.3	-	9.9	-
Zinc Yellow	10.0	9.9	-	-	8.6	-	9.9	-
Siliceous Iron Oxide	6.9	7.0	-	6.0	-	-	7.0	-
Cuprous Oxide	-	-	-	-	-	-	-	100.0
Magnesium Silicate	10.0	10.4	24.7	20.9	27.2	-	10.4	-
Diatomaceous Silica	7.9	8.0	-	-	-	-	8.0	-
Mica	-	-	-	7.7	8.3	-	-	-
Lampblack	-	-	-	-	-	-	-	-
Aluminum Stearate	0.2	0.2	-	0.4	0.4	-	0.2	-
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
VEHICLE								
Alkyd Resin Solution (a)	33.2	-	-	-	-	-	-	-
Alkyd Resin Solution (b)	-	36.9	-	-	-	-	22.1	-
Varnish IV 223 (c)	49.1	-	-	-	1	-	-	-
Varnish IV 257C (d)	-	55.1	-	-	-	-	-	-
Varnish IV 490 (e)	-	-	-	-	-	-	32.4	-
Cumar V-24	-	-	-	7.1	25.4	-	-	-
Cumar F-10	-	-	-	5.9	8.7	-	-	-
Ester Gum	-	-	-	1.3	-	-	-	-
Urochlor #1254	-	-	-	2.7	-	-	-	-
Liquid Coal Tar	-	-	-	-	8.9	-	-	-
Zinc Resinate	-	-	-	-	3.2	-	-	-
Chlorinated Rubber	-	-	-	-	6.3	-	-	-
VASH Vinylite	-	-	19.4	-	0.8	19.4	-	-
VTH Vinylite	-	-	-	-	-	-	-	15.2
Resin	-	-	-	-	-	-	-	15.2
Mineral Spirits	7.4	-	-	-	-	-	-	-
H Flash Naphtha	9.7	7.5	-	-	31.7	-	-	-
Ethyl Cellulose	-	-	-	11.8	-	-	4.5	-
Hydrated Alcohol	-	-	-	-	-	-	2.9	-
Butyl Alcohol	-	-	-	-	-	-	17.8	-
Xylene	-	-	-	-	-	-	20.0	-
Toluene	-	-	29.1	53.3	-	29.1	-	34.6
Ethyl Alcohol (denatured)	-	-	-	17.7	-	-	-	-
Isosol #1	-	-	-	-	15.0	-	-	-
Isobutyl Ketone	-	-	51.5	-	-	51.5	-	15.0
Stabilizer	-	-	-	0.2	-	-	-	-
Lead Naphthenate (24)	0.3	0.3	-	-	-	-	0.3	-
Lead Naphthenate (6)	0.1	0.2	-	-	-	-	0.1	-
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

- (a) Linseed Oil Modified
 (b) OR 2454 - a linseed oil alkyd
 (c) 10 gal. BR 9432 (5 Linseed Oil - 5 castor oil)
 (d) A 6 gallon-linseed oil (22) - 50% Cumar V-24-50% BR9432
 (e) A 6 gal. cumar, BR 9432, zinc resinate vehicle

PROJECT NO. 17 - PAINT COMPOSITIONS

INGREDIENTS	317	318	319	320	321	322	323	324	325
PIGMENT									
Red Lead (97% Grade)	53.0	53.0	52.3	45.0	53.5	52.7	55.2	53.0	45.0
Iron Oxide Yellow	-	-	-	15.0	-	-	-	-	-
Iron Yellow	9.8	10.0	10.2	7.0	10.1	10.0	10.4	10.0	10.0
Iron Oxide	8.0	8.0	9.0	8.0	8.0	7.9	-	8.0	10.0
Titanium Dioxide	-	-	-	-	-	-	-	-	10.0
Raw Sienna	3.9	4.0	3.8	-	4.0	4.0	4.2	4.0	-
Graphitic Mica	15.2	15.0	14.5	15.0	14.7	15.1	15.6	15.0	15.0
Magnesium Silicate	9.8	9.7	9.8	10.0	9.4	10.0	14.3	9.7	10.0
Aluminum Stearate	.3	0.3	.4	-	.3	.3	.3	.3	-
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
VEHICLE									
Raw Linseed Oil	-	-	-	-	-	-	23.5	7.1	-
Vehicle 27 (Castor Oil Alkyd)	69.3	25.4	-	25.5	42.4	-	-	29.6	-
Alkyd Solution (Navy 52-R-13a, Type I)	-	43.3	-	43.4	-	-	45.8	-	64.9
Alkyd Solution (Maritime Com. 52-MC-501, Type I)	-	-	29.7	-	-	-	-	-	-
Alkyd Resin Solution (a)	-	-	-	-	-	-	-	42.3	-
Vehicle No. 5 (Long Oil Modified Phenolic Varnish)	-	-	36.5	-	-	61.8	-	-	-
SAH Vinylite	-	-	-	-	4.7	-	-	-	-
Aromatic Mineral Spirits	29.5	-	12.5	-	-	17.1	-	-	-
Mineral Spirits	-	29.3	-	47.0	-	-	22.7	18.9	32.9
Hi-Flash Naphtha	-	-	-	-	17.3	-	-	-	-
Ethyl Butyl Ketone	-	-	-	-	35.0	-	-	-	-
Lead Naphthenate (2% Pb)	.9	1.4	.8	1.5	.5	.7	2.1	1.5	1.5
Cobalt Naphthenate (1% Co)	.1	.2	.1	.2	.1	.1	.1	.2	0.2
Manganese Naphthenate (6% Mn)	.2	.2	.2	.2	.1	.1	.1	.2	0.1
Anti-Skinning Agent	.2	.2	.2	.2	.1	.2	.1	.2	0.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Linseed alkyd (34% Phthalic Anhydride)

Source or Mfr.	Mfr. Code	Type of Surface	Wp-1 Yes or No	Land (7L)		Tide Range (PT)		
				P-150	P-150	P-150	P-150	P-150
L.I.A.	317	Reg.	No	1	5	2	3	4
do	318	do	do	6	7	8	9	10
do	319	do	do	12	15	11	13	14
do	320	do	do	17	19	16	18	20
do	321	do	do	21	22	23	24	25
do	322	do	do	26	27	28	29	30
do	323	do	do	33	35	31	32	34
do	323	W.B.	do	36	37	38	39	40
do	323	P.R.S.	do	81	82	83	84	85
do	324	Reg.	do	41	44	42	43	45
do	325	do	do	48	50	46	47	49
Ind. Test Lab.								
Phila. Navy Yard	84/47	do	do	51	52	53	54	55
do	84/47	W.B.	do	56	57	58	59	60
do	84/47	P.R.S.	do	59	60	66	67	68
do	84/47	S.B.	Yes	91	92	93	94	95
do	84/47	Reg.	do	178	179	176	177	180
do	84/47	S.B.	No	191	182	193	184	185
Nat'l Lead	M-6318	Reg.	do	64	65	61	62	63
do	do	S.B.	Yes	77	78	76	78	80
do	M-6319	Reg.	No	68	69	66	67	70
do	do	S.B.	Yes	71	72	73	74	75
do	52-WC-201	Reg.	No	116	120	117	118	119
Ind. Test Lab.	52-P-13							
Phila. Navy Yard	(52-V-20)	do	do	163	169	166	167	170
do	52-P-18							
do	(52-Y-21)	do	do	173	174	171	172	175
Nat'l Lead	P-10	do	Yes	249	250	246	247	248
do	P-10	S.B.	do	254	255	251	252	253
Drexel finishes	P-21	Reg.	do	259	259	256	257	260
do	P-21	S.B.	do	263	264	261	262	265
E.-P.e	600	Reg.	No	98	99	96	97	100
doe	461	do	do	103	105	101	102	104
doe	462	do	do	108	108	107	109	110
doe	467	do	do	111	112	113	114	115
doe	84/47	Reg.	do	329	330	326	327	328
doe	84/47	P.R.S.	do	339	340	336	337	338
doe	84/47	Reg.	Yes	343	344	341	342	345
doe	84/47	S.B.	No	331	332	333	334	335
doe	52-P-18	Reg.	No	301	302	303	304	305
doe	52-P-18	S.B.	No	306	307	308	309	310
doee	460	Reg.	No	792	795	791	793	794
doee	do	Reg.	Yes	796	798	797	799	800
doee	461	Reg.	No	811	813	812	814	815
doee	do	Reg.	Yes	818	819	816	817	820

Source or Mfr.	Mfr. Code	Type of Surface	W-L Yes or No	Land (FL)		Tide Range (FT)		
				P-158	P-158	P-158	P-158	P-158
doee	L62	Reg.	No	833	834	831	832	835
doee	do	Reg.	Yes	837	839	836	838	840
doee	L67	Reg.	No	851	852	853	854	855
doee	do	Reg.	Yes	856	858	857	859	860
doee	84/47	Reg.	No	871	872	873	874	875
doee	do	Reg.	Yes	876	880	877	878	879

Key to symbols under Type of Surface:

Reg. - regular Navy procedure, acid pickled-phosphate treated steel.

W.B. - wire brushed.

P.R.S. - partially rusted steels

NOTE: All panel numbers contain the prefix P-158, designating the Navy project number.

All panel numbers contain the suffix FL or FT to designate Florida Land or Florida Tide Range, respectively. Example: The first panel exposed on land containing L.I.A. Paint No. 117 should be marked: P-158-L-FL.

oThese panels were exposed approximately one month after the L.I.A. panels.
oThese panels were exposed approximately two months after the L.I.A. panels.