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**SELF-ETCH ENVIRONMENTALLY
ACCEPTABLE PRIMER TESTING
(SEEAPT)**

Delivery Order 0001

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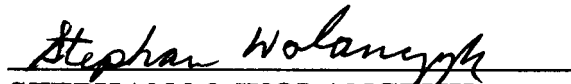
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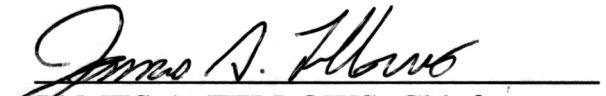
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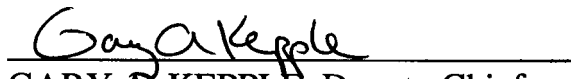
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14. ABSTRACT Self-etching and wash primers have the potential to reduce depot and field flow times and related wasted streams by combining several steps in the coating application process. These materials have been used with limited success. A project was initiated to ascertain the state-of-the-art with these materials. An initial screening was completed with 12 candidate self-etching and wash primers under current MIL-PRF-85285 topcoats. The focus of the testing was on primer properties. Filiform corrosion, salt fog exposure, pencil hardness, crosshatch adhesion, impact testing, and wet tape adhesion testing were conducted on the 12 candidate systems, along with 4 control systems. Six test primer systems performed reasonably compared to the control coating systems. They were down-selected for further testing in final phases of the program.								
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1.0 BACKGROUND

Standard Air Force and industry practice uses a specific process to apply organic coatings (paint) to aluminum substrates. The order of this process is:

1. Clean
2. Rinse
3. Acid Oxidize
4. Rinse
5. Chrome Conversion Coat (CCC)
6. Rinse
7. Apply Primer
8. Apply Topcoat

Although the chrome conversion coat is considered an essential step in the process for its effectiveness in corrosion prevention, it has potentially adverse health effects and contributes to pollution. Significant effort is being devoted to finding other materials and processes providing the corrosion protection of CCC's without the associated hazard and pollution potential.

Recently, the coatings industry has developed a class of materials called "self-etch" primers, a combination of the technology employed by "wash primers" and the standard primers used by the Air Force. These materials are intended to combine the acid de-oxidation and chromate protection functions of the CCC with the adhesion promotion properties of a primer coating.

The use of a "wash primer" coating to provide the acid de-oxidation and chromate protection function is a well-established technology. In wash primer technology, a phosphoric acid component is mixed with a resinous component (typically polyvinyl butyral) containing chromates and other extender pigments. The acid component reacts with surface oxides, forming phosphates typical of an acid de-oxidation process. A thin coating is applied to a freshly cleaned surface as short-term protection from corrosion. The painting process is completed by the application of a standard primer and topcoat.

2.0 OBJECTIVE

This project evaluates self-etching environmentally acceptable (EA) primers for possible replacement of chromate conversion coatings (CCC) surface treatment. The project compares self-etching EA primers to current CCCs and other available surface treatments. The performance of these self-etching primers is evaluated against the MIL-P-23377 specification. The test matrix includes testing to appraise the ease of application, determine dry times, adhesion properties, and fluid resistance. The evaluation of the primers includes corrosion inhibition qualities as part of a complete system. A goal of this project is to field test the best performer on aircraft such as B-1B, A-10, or C-5.

The objective of this project is to identify and evaluate commercially available environmentally acceptable primers or primer systems providing corrosion protection to aluminum substrates that are not prepared for application sufficiently or where pollution prevention standards preclude the use of a CCC. A secondary objective will be to compare the performance of these systems with conventional systems to determine if this technology offers broader opportunities for pollution prevention for typical painting operations by elimination of the waste associated with CCC processes.

Key activities include the identification and coordination with potential users of the technology, identification of commercial candidate materials, preliminary screening of candidates, down selection of screened materials, and more thorough testing of the selected materials.

3.0 STATUS

Product offerings from aerospace coatings companies as well as several non-traditional sources were evaluated and products/technologies were selected for Phase I testing. Materials for Phase I testing were ordered and received. Testing has begun and candidates will be down selected for further testing. Phase 2 testing will be conducted during the first eight months of 2002.

4.0 DATA SUMMARY AND CONCLUSIONS / RECOMMENDATIONS

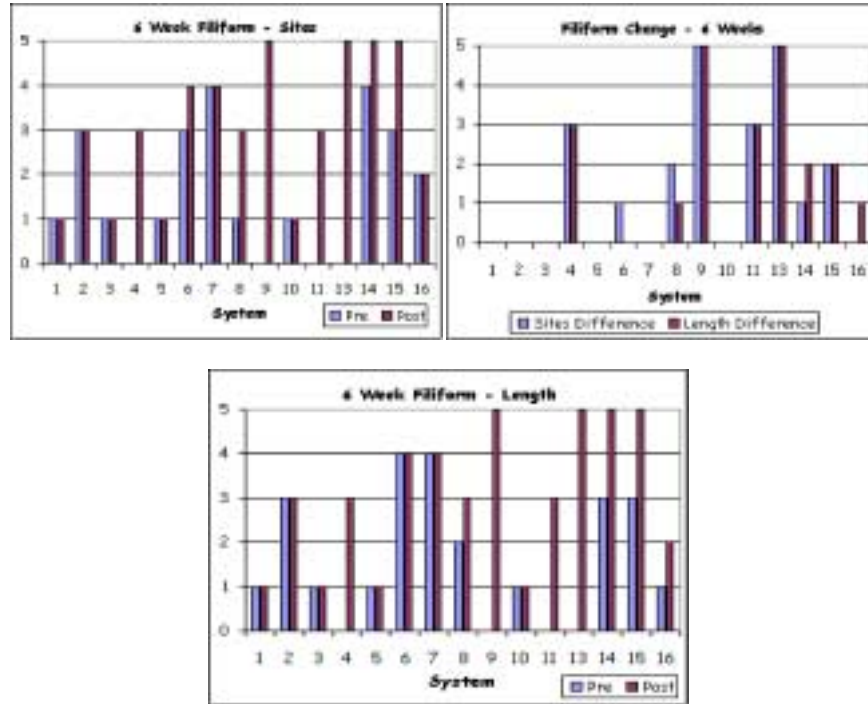
4.1 Filiform Analysis

The filiform corrosion (MIL-P-23377) specification is as follows:

The topcoated primer coating, applied to test panels, shall exhibit no filiform corrosion extending beyond ¼ inch from the scribe when exposed to 12 normal (N) hydrochloric acid (HCl) for one hour and then placed in a humidity cabinet maintained at 40C +/- 1.7C (104F +/- 3F) and relative humidity (RH) of 80% +/- 5% for 1000 hours, in accordance with 4.6.7.2. A majority of the filaments shall be less than 1/8 in. in length.

1000 hours is approximately 6 weeks. The tests were performed for 16 weeks in order to compare the extended performance of the new systems with the extended performance of the current system. The systems that performed the best after the 6-week exposure test are:

- | | |
|--------------------------------------|-----------------------------|
| 1 – Control – Very Good | 8 – US Paint – Fair |
| 2 – Standard Wash Primer – Fair | 10 – US Paint – Very Good |
| 3 – No rinse CCC Control - Very Good | 11 – US Paint / VPPI – Fair |
| 4 – 85582 as a wash primer – Fair | 16 – Lord System B – Good |
| 5 – Waterborne Control – Very Good | |



4.1.1 Example and Explanation of the Filiform Charts

This example is a graphical summary of the 6-week Filiform Corrosion results for all systems.

- **Pre:** This is the rating of the panel **before** any material is stripped off the substrate.
- **Post:** This is the rating of the panel **after** the panel has been stripped.
- **Sites and Length Difference:** This shows the difference in the rating between the **Pre** and **Post** rated panels.

The difference between the Pre and Post evaluations is shown in the third chart. The third chart, if a large difference is shown, is an indication of a type of corrosion that is not typical of filiform corrosion. This type of corrosion needs to be investigated further but is not a part of this study.

4.2 Salt Spray – Primer Only - Analysis

The Salt Spray specification (MIL-P-23377) for Aluminum is as follows:

The primer coating, applied to test panels shall exhibit no blistering, lifting of the coating system, or substrate corrosion after exposure to 5% salt spray for 2000 hours when tested in accordance with 4.6.7.1.2. (2000 Hours is approximately 12 weeks).

Failure was determined when a rating of 2 was reached and sustained. System performance was determined at 1848 Hours. Systems 7, 13 and System 15 failed this test.

4.3 Salt Spray – Full System – Analysis

The same specification (MIL-P-23377) is applied to this test. Systems 9 and 15 failed this test. Systems 3, 4, 6, 7, 8, 10, 11, 13, and 16 are marginal for Corrosion. This test helps to show the effect of the topcoat's barrier properties when applied over the primer.

NOTE: More systems have a rating of 2 (not counting systems 8 – 11) at 1848 hours exposure with topcoat and primer than with primer alone. Performance capability was determined when a rating of 2 was reached and sustained.

Primer		Topcoat	
	1848 Hours		1848 Hours
1	Good	1	C-1
2	C-1	2	C-1
3	C-1	3	C-2
4	C-1	4	C-2
5	C-1	5	C-1
6	C-1	6	C-2
7	C-2	7	C-2
		8	C-2
		9	C-4, U-2, B-4
		10	C-2
		11	C-2
13	C-1, B-1	13	C-2
14	C-1, U-1, B-1	14	C-1
15	C-2, U-1, B-2	15	C-2, U-1, B-3
16	C-1	16	C-2

Rating Scale		
C	U	B
Good	Good	Good
C-1	U-1	B-1
C-2	U-2	B-2
C-3	U-3	B-3
C-4	U-4	B-4
C-5	U-5	B-5
C = corrosion		
U = undercutting		
B = blistering		

4.4 Pencil Hardness

Pencil Hardness was tested on wash primer/conversion coats and on full systems. The only data reported here is on the full systems. The specification calls for no more than 2 pencil hardness **softer** than the initial reading. The specification does not make any determination on the coatings getting harder after the soak test. Systems 1 and 2 dropped by three pencil increments. System 9 dropped four increments.

4.5 Crosshatch Adhesion

Full System panels were tested for their adhesion properties. All systems performed reasonably well (4's and 5's) with the exception of System 1 (Control) with a rating of zero (0) and Systems 3 (No rinse CCC Control), and 9 (US Paint Chrome Free). The control panel that tested zero (0) is under review because this system has been tested many times in the past and has performed well.

4.6 Impact Testing

Impact testing was performed on wash primer only panels over 2024 T-3 Bare Al panels (.032 thick), on topcoated systems over 2024 T-3 Bare Al panels (.032 thick) and on topcoated systems over 2024 T-0 Bare Al panels (.020 thick). **All** topcoat systems, even the control systems, failed the Impact Testing. The elongation specification for Type I topcoats is 40%. Most systems achieved a 20% elongation. For Phase II testing we will be testing the primer panels **and** topcoated panels.

4.7 Wet Tape Adhesion Testing

Wet Tape Adhesion Testing is performed on panels after they have been submerged in DI water for at least 24 hours. The panels are then tested per FED-STD-141, Method 6301 and the topcoat should not peel away from the primer coating. Systems 13 and 14 failed this test.

Wet Tape Adhesion Testing - Full System - Supplemental		
	Rating	Comments
1	5A	Scribing caused coating to be jagged
2	5A	
3	5A	
4	5A	
5	5A	Scribing caused coating to be jagged
6	5A	Scribing caused coating to be jagged
7	5A	
8	5A	
9	5A	Scribing caused coating to be jagged
10	5A	
11	5A	Scribing caused coating to be jagged
13	1A	Pre and Post test photos
14	1A	Pre and Post test photos
15	5A	
16	5A	
All specimens were aluminum		

5.0 CONCLUSIONS

After reviewing all of the test data, reviewing the panels, looking at pictures taken, and talking with the different technicians, the following systems warrant further testing to determine their viability as a coating system that will perform to the military specifications **and** provide a benefit to the military by reducing the amount of hazardous materials used to coat military hardware.

System 1 – Control

- Solvent Wipe with MEK
- Bruhin 815GD and Scotchbrite Clean/Wash
- CTIO Standard de-oxidation
- Alodine 1200S
- No wash prime
- MIL-PRF-23377G Primer
- MIL-PRF-85285 Topcoat

System 2 – Standard Wash Prime

- MEK Wipe Pre-clean
- Bruhin 815GD and Scotchbrite Clean/Wash
- No De-oxidation
- No Conversion Coat
- S-W MIL-C-8514 Wash Primer
- MIL-PRF-23377G Primer
- MIL-PRF-85285 Topcoat

System 3 – No Rinse CCC Control

- MEK Wipe Pre-clean
- Bruhin 815GD and Scotchbrite Clean/Wash
- No De-oxidation
- Alodine 1201
- No wash prime
- MIL-PRF-23377G Primer
- MIL-PRF-85285 Topcoat

System 4 – 85582 as Wash Prime

- MEK Wipe Pre-clean
- Bruhin 815GD and Scotchbrite Clean/Wash
- CTIO Standard de-oxidation
- No Conversion Coat

MIL-PRF-85582 Wash Prime
MIL-PRF-85582G Primer
MIL-PRF-85285 Topcoat

System 5 – Waterborne Control

MEK Wipe Pre-clean
Brulin 815GD and Scotchbrite Clean/Wash
CTIO Standard de-oxidation
Alodine 1200S
No wash prime
MIL-PRF-85582G Primer
MIL-PRF-85285 Topcoat

System 6 – PRC Desoto

MEK Wipe and Scotchbrite Pre-clean
No Clean/Wash
No De-oxidation
No Conversion Coat
P99 Wash Primer
PAC 33 Primer
MIL-PRF-85285 Topcoat

System 8 – US Paint

MEK Wipe and Scotchbrite Pre-clean
No Clean/Wash
No De-oxidation
No Conversion Coat
R4002/3203 Self-Etch Prime
No Primer
MIL-PRF-85285 Topcoat

System 10 – US Paint

MEK Wipe and Scotchbrite Pre-clean
Brulin 815GD and Scotchbrite Clean/Wash
No De-oxidation
No Conversion Coat
R4002/3203 Self-Etch Prime
No Primer
MIL-PRF-85285 Topcoat

System 16 – Lord System B

MEK Wipe and Scotchbrite Pre-clean

No Clean/Wash

No De-oxidation

No Conversion Coat

Lord 9924 Wash Prime

MIL-PRF-23377G Prime

MIL-PRF-85285 Topcoat

DATA SUMMARY AND RECOMMENDATION

		6 Week	1848 Hour	1848 Hour	Supplemental	Supplemental	Supplemental				
		Filiform Full System	Salt Spray Primer	Salt Spray Full System	<i>Salt Spray 3500+ Hours</i>	Pencil Hardness	Cross Hatch Adhesion Full System	GE Impact Full System	Wet Tape Adhesion	Average Rating	
5	Waterborne Control	1	2	1	<i>Fail</i>	2	1	1	1	1.3	Phase II
4	85582 as a wash primer	4	2	5	<i>Pass</i>	2	3	1	1	2.6	Phase II
8	US Paint	8	X	5	<i>Pass</i>	2	3	1	1	3.3	Phase II
3	No rinse CCC Control	2	2	5	<i>Fail</i>	1	13	1	1	3.6	Phase II
2	Standard Wash Primer	10	2	1	<i>Pass</i>	10	1	1	1	3.7	Phase II
6	PRC DeSoto	7	2	5	<i>Pass</i>	8	3	1	1	3.9	Phase II
10	US Paint	4	X	5	<i>Pass</i>	2	3	10	1	4.2	Phase II
16	Lord System B	4	2	5	<i>Fail</i>	10	3	X	1	4.2	Phase II
1	Control	3	1	1	<i>Fail</i>	10	15	1	1	4.6	Phase II
11	US Paint / VPPI	8	X	5	<i>Pass</i>	8	3	10	1	5.8	Eliminate
7	PRC DeSoto Chrome Free	11	10	5	<i>Pass</i>	13	3	1	1	6.3	Eliminate
15	Lord System A	14	11	14	<i>Fail</i>	2	3	1	1	6.6	Eliminate
13	Vapor Phase primer	12	8	5	<i>Fail</i>	2	3	10	13	7.6	Eliminate
14	Cortec Primer	13	9	1	X	15	3	10	13	9.1	Eliminate
9	US Paint - Chrome Free	12	X	15	<i>Fail</i>	13	13	10	13	12.7	Eliminate
12	Dexter 40-P1-6	X	X	X	<i>Pass</i>	X	X	X	X		X

The panels were ranked based on their evaluated performance after each test. Panels rated the same were given the same ranking number, the next “best” panel was given a rating that include all systems that had a better performance (example: If 5 panels received a “1” rating then the next best panel was rated a “6”).

An average ranking of 5 or less was used to determine the systems that would be tested in Phase II. This allows us to test 5 “new” systems along side different control systems.

APPENDIX

A-1 Legend

381 = Project Number Self Etch Primer SEEAPT			
	System Number	Substrate letter	Panel number
381	1	B	01
381	2	B	01
381	3	B	01
381	4	B	01
381	5	B	01
381	6	B	01
381	7	B	01
381	8	B	01
381	9	B	01
381	10	B	01
381	11	B	01
381	12	B	01
381	13	B	01
381	14	B	01
381	15	B	01
381	16	B	01

A 2024 T-3 Bare
B 2024 T-3 Clad
C 2024 T-0 Bare

For Substrate A:
1-8 is wash primer or conversion coat only, for salt spray testing
9-16 is intermediate primer (if used), for salt spray testing
17-32 is complete system

For Substrate B:
1-8 is complete system for filiform corrosion testing

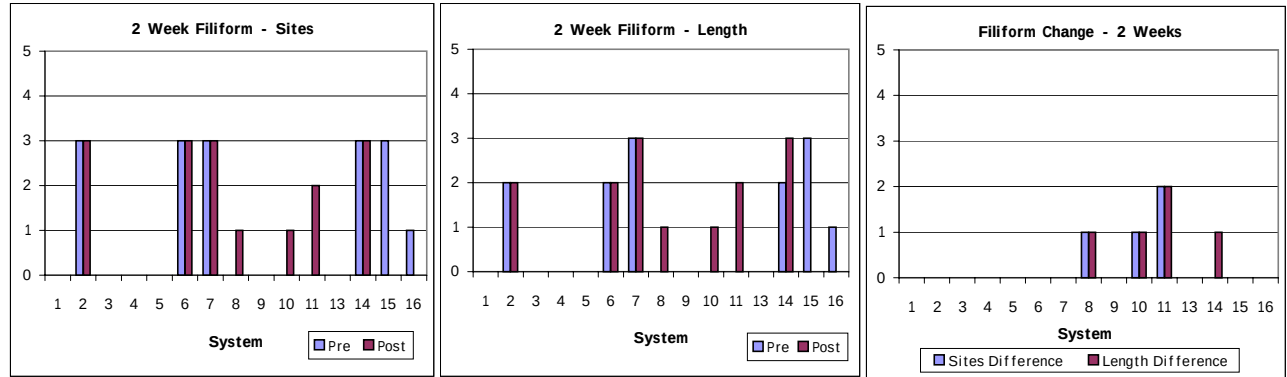
For Substrate C:
1-8 is complete system for flexibility testing

- 1 Control
- 2 Standard Wash Primer
- 3 No rinse CCC Control
- 4 85582 as a wash primer
- 5 Waterborne Control
- 6 PRC DeSoto
- 7 PRC DeSoto - Chrome Free
- 8 US Paint
- 9 US Paint - Chrome Free
- 10 US Paint
- 11 US Paint / VPPI
- 12 Dexter 40-P1-6
- 13 Vapor Phase primer
- 14 Cortec Primer
- 15 Lord System A
- 16 Lord System B

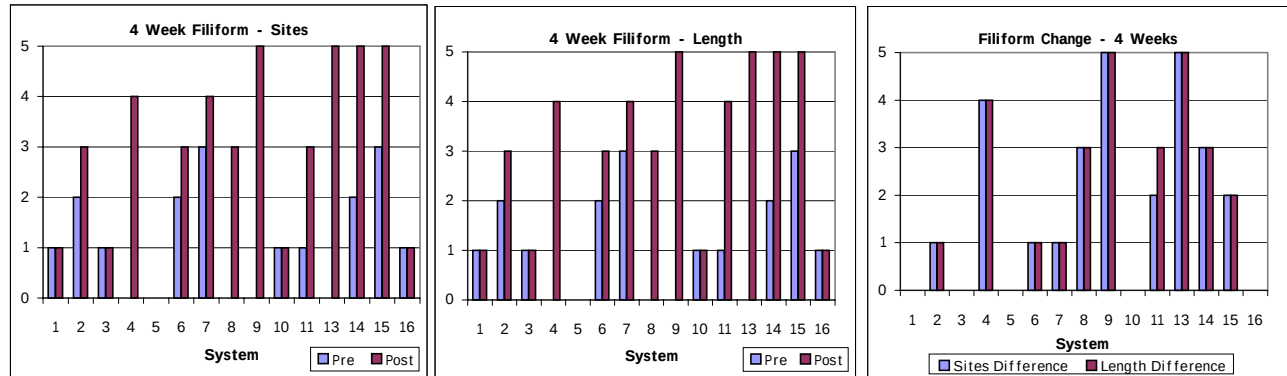
A-2 Filiform Results

2 Weeks			Sites	Length	Sites	Length	Sites	Length
			Pre	Pre	Post	Post		
381	1 B	01	0	0	0	0	0	0
381	2 B	01	3	2	3	2	0	0
381	3 B	01	0	0	0	0	0	0
381	4 B	01	0	0	0	0	0	0
381	5 B	01	0	0	0	0	0	0
381	6 B	01	3	2	3	2	0	0
381	7 B	01	3	3	3	3	0	0
381	8 B	01	0	0	1	1	1	1
381	9 B	01	0	0				
381	10 B	01	0	0	1	1	1	1
381	11 B	01	0	0	2	2	2	2
381	13 B	01	0	0				
381	14 B	01	3	2	3	3	0	1
381	15 B	01	3	3				
381	16 B	01	1	1				

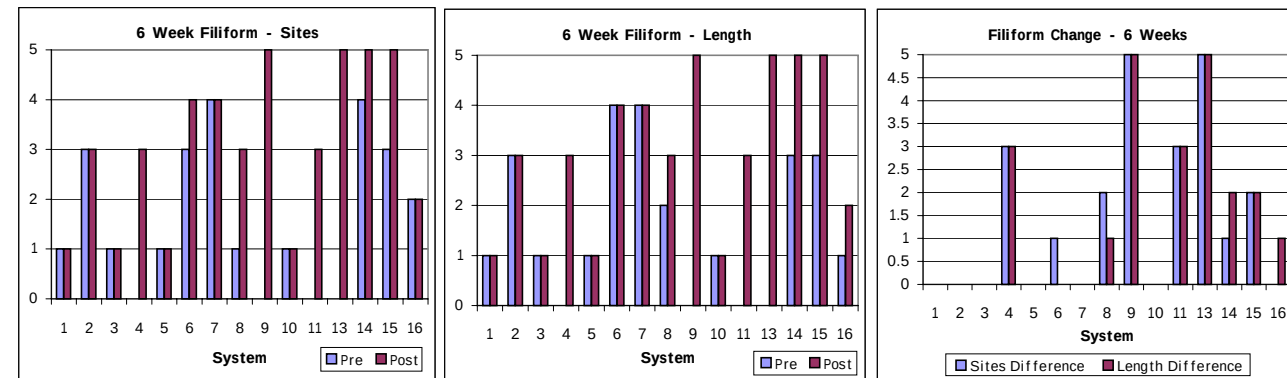
Filiform Summary - Full System



4 Weeks			Sites	Length	Sites	Length	Sites	Length
			Pre	Pre	Post	Post		
381	1 B	02	1	1	1	1	0	0
381	2 B	02	2	2	3	3	1	1
381	3 B	02	1	1	1	1	0	0
381	4 B	02	0	0	4	4	4	4
381	5 B	02	0	0	0	0	0	0
381	6 B	02	2	2	3	3	1	1
381	7 B	02	3	3	4	4	1	1
381	8 B	02	0	0	3	3	3	3
381	9 B	02	0	0	5	5	5	5
381	10 B	02	1	1	1	1	0	0
381	11 B	02	1	1	3	4	2	3
381	13 B	02	0	0	5	5	5	5
381	14 B	02	2	2	5	5	3	3
381	15 B	02	3	3	5	5	2	2
381	16 B	02	1	1	1	1	0	0

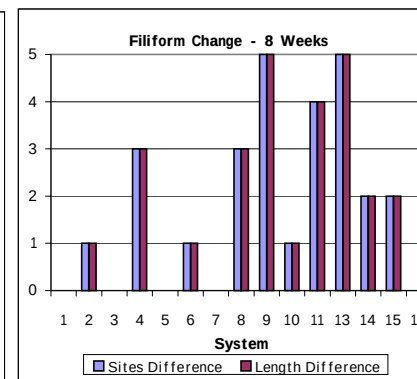
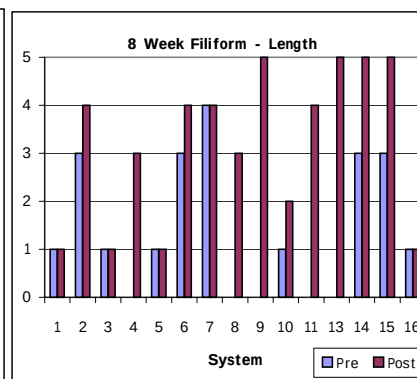
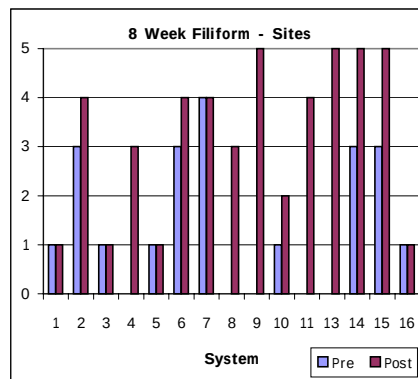


6 Weeks			Sites	Length	Sites	Length	Sites	Length
			Pre	Pre	Post	Post		
381	1 B	03	1	1	1	1	0	0
381	2 B	03	3	3	3	3	0	0
381	3 B	03	1	1	1	1	0	0
381	4 B	03	0	0	3	3	3	3
381	5 B	03	1	1	1	1	0	0
381	6 B	03	3	4	4	4	1	0
381	7 B	03	4	4	4	4	0	0
381	8 B	03	1	2	3	3	2	1
381	9 B	03	0	0	5	5	5	5
381	10 B	03	1	1	1	1	0	0
381	11 B	03	0	0	3	3	3	3
381	13 B	03	0	0	5	5	5	5
381	14 B	03	4	3	5	5	1	2
381	15 B	03	3	3	5	5	2	2
381	16 B	03	2	1	2	2	0	1

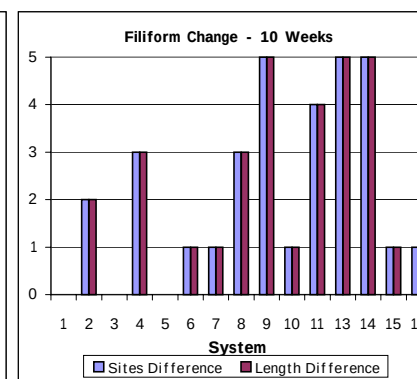
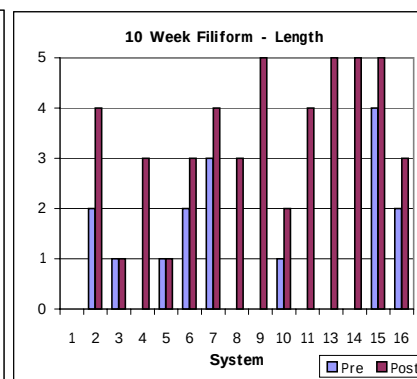
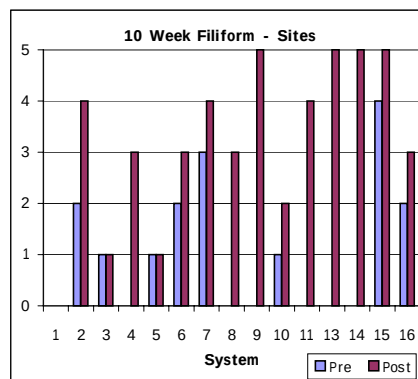


8 Weeks				Sites	Length	Difference	
				Pre	Post	Sites	Length
				Pre	Post	Difference	Difference
381	1	B	04	1	1	0	0
381	2	B	04	3	4	1	1
381	3	B	04	1	1	0	0
381	4	B	04	0	3	3	3
381	5	B	04	1	1	0	0
381	6	B	04	3	4	1	1
381	7	B	04	4	4	0	0
381	8	B	04	0	3	3	3
381	9	B	04	0	5	5	5
381	10	B	04	1	2	1	1
381	11	B	04	0	4	4	4
381	13	B	04	0	5	5	5
381	14	B	04	3	5	2	2
381	15	B	04	3	5	2	2
381	16	B	04	1	1	0	0

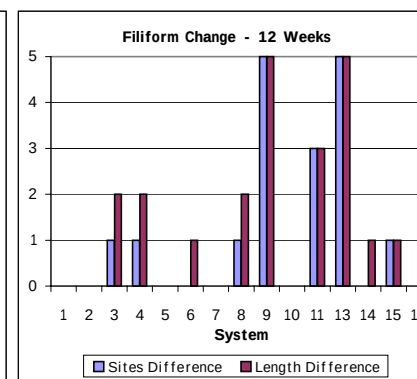
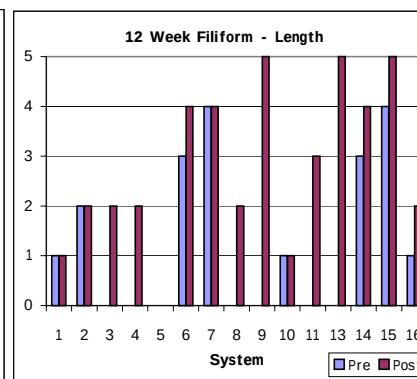
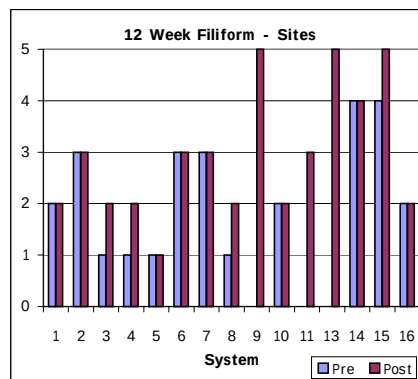
Filiform Summary - Full System



10 Weeks				Sites	Length	Difference	
				Pre	Post	Sites	Length
				Pre	Post	Difference	Difference
381	1	B	05	0	0	0	0
381	2	B	05	2	4	2	2
381	3	B	05	1	1	0	0
381	4	B	05	0	3	3	3
381	5	B	05	1	1	0	0
381	6	B	05	2	3	1	1
381	7	B	05	3	4	1	1
381	8	B	05	0	3	3	3
381	9	B	05	0	5	5	5
381	10	B	05	1	2	1	1
381	11	B	05	0	4	4	4
381	13	B	05	0	5	5	5
381	14	B	05	0	5	5	5
381	15	B	05	4	5	1	1
381	16	B	05	2	3	1	1

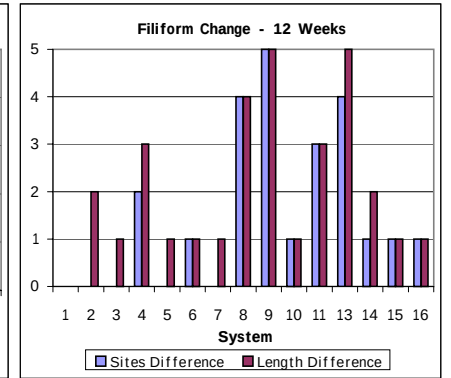
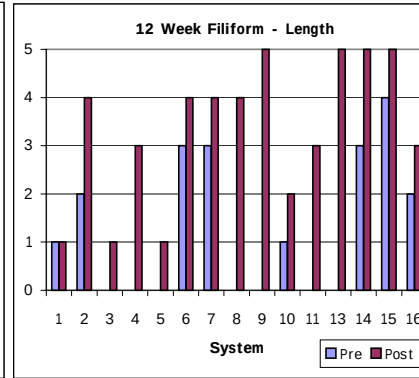
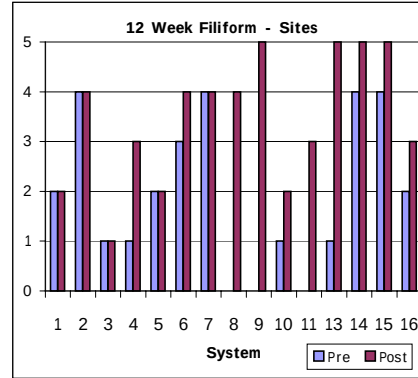


12 Weeks				Sites	Length	Difference	
				Pre	Post	Sites	Length
				Pre	Post	Difference	Difference
381	1	B	06	2	2	0	0
381	2	B	06	3	3	0	0
381	3	B	06	1	2	1	2
381	4	B	06	1	2	1	2
381	5	B	06	1	0	0	0
381	6	B	06	3	3	0	1
381	7	B	06	3	4	0	0
381	8	B	06	1	2	1	2
381	9	B	06	0	5	5	5
381	10	B	06	2	2	0	0
381	11	B	06	0	3	3	3
381	13	B	06	0	5	5	5
381	14	B	06	4	4	0	1
381	15	B	06	4	5	1	1

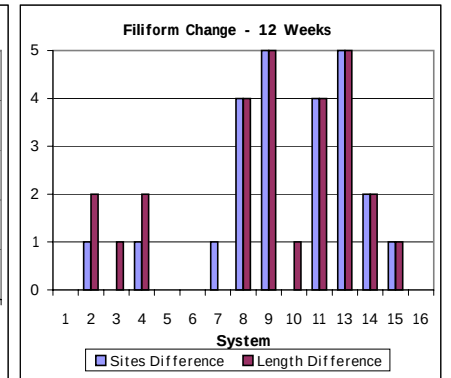
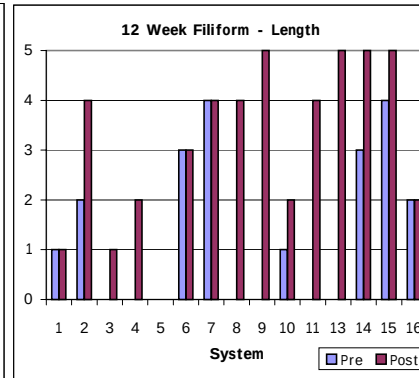
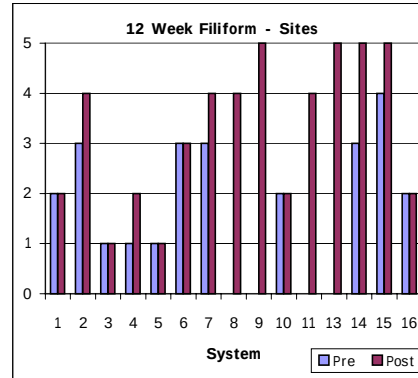


Filiform Summary - Full System

381	16 B	06	2	1	2	2	0	1
14 Weeks			Sites	Length	Sites	Length		
			Pre	Pre	Post	Post	Sites	Length
							Difference	Difference
381	1 B	07	2	1	2	1	0	0
381	2 B	07	4	2	4	4	0	2
381	3 B	07	1	0	1	1	0	1
381	4 B	07	1	0	3	3	2	3
381	5 B	07	2	0	2	1	0	1
381	6 B	07	3	3	4	4	1	1
381	7 B	07	4	3	4	4	0	1
381	8 B	07	0	0	4	4	4	4
381	9 B	07	0	0	5	5	5	5
381	10 B	07	1	1	2	2	1	1
381	11 B	07	0	0	3	3	3	3
381	13 B	07	1	0	5	5	4	5
381	14 B	07	4	3	5	5	1	2
381	15 B	07	4	4	5	5	1	1
381	16 B	07	2	2	3	3	1	1



381	1 B	08	2	1	2	1	0	0
16 Weeks			Sites	Length	Sites	Length		
			Pre	Pre	Post	Post	Sites	Length
							Difference	Difference
381	2 B	08	3	2	4	4	1	2
381	3 B	08	1	0	1	1	0	1
381	4 B	08	1	0	2	2	1	2
381	5 B	08	1	0	1	0	0	0
381	6 B	08	3	3	3	3	0	0
381	7 B	08	3	4	4	4	1	0
381	8 B	08	0	0	4	4	4	4
381	9 B	08	0	0	5	5	5	5
381	10 B	08	2	1	2	2	0	1
381	11 B	08	0	0	4	4	4	4
381	13 B	08	0	0	5	5	5	5
381	14 B	08	3	3	5	5	2	2
381	15 B	08	4	4	5	5	1	1
381	16 B	08	2	2	2	2	0	0



A-3 2-Week Salt Spray – Primer Data

C= Corrosion 0 = None 2 Week Salt Spray-Primer
U=Undercutting 5= Severe
B=Blistering
2 Weeks - Primer

			C	U	B				C	U	B				C	U	B
381	1 A	9	0	0	0	381	2 A	9	0	0	0	381	3 A	9	0	0	0
381	1 A	10	0	0	0	381	2 A	10	0	0	0	381	3 A	10	0	0	0
381	1 A	11	0	0	0	381	2 A	11	0	0	0	381	3 A	11	0	0	0
381	1 A	12	0	0	0	381	2 A	12	0	0	0	381	3 A	12	0	0	0
381	1 A	13	0	0	0	381	2 A	13	0	0	0	381	3 A	13	0	0	0
381	1 A	14	0	0	0	381	2 A	14	0	0	0	381	3 A	14	0	0	0
381	1 A	15	0	0	0	381	2 A	15	0	0	0	381	3 A	15	0	0	0
381	1 A	16	0	0	0	381	2 A	16	0	0	0	381	3 A	16	0	0	0
			C	U	B				C	U	B				C	U	B
381	4 A	9	0	0	0	381	5 A	9	0	0	0	381	6 A	9	0	0	0
381	4 A	10	0	0	0	381	5 A	10	0	0	0	381	6 A	10	0	0	0
381	4 A	11	0	0	0	381	5 A	11	0	0	0	381	6 A	11	0	0	0
381	4 A	12	0	0	0	381	5 A	12	0	0	0	381	6 A	12	0	0	0
381	4 A	13	0	0	0	381	5 A	13	0	0	0	381	6 A	13	0	0	0
381	4 A	14	0	0	0	381	5 A	14	0	0	0	381	6 A	14	0	0	0
381	4 A	15	0	0	0	381	5 A	15	0	0	0	381	6 A	15	0	0	0
381	4 A	16	0	0	0	381	5 A	16	0	0	0	381	6 A	16	0	0	0
			C	U	B				C	U	B				C	U	B
381	7 A	9	1	0	0	381	13 A	9	0	0	0	381	14 A	9	0	0	0
381	7 A	10	1	0	0	381	13 A	10	0	0	0	381	14 A	10	0	0	0
381	7 A	11	1	0	0	381	13 A	11	0	0	0	381	14 A	11	0	0	0
381	7 A	12	1	0	0	381	13 A	12	0	0	0	381	14 A	12	0	0	0
381	7 A	13	1	0	0	381	13 A	13	0	0	0	381	14 A	13	0	0	0
381	7 A	14	1	0	0	381	13 A	14	0	0	0	381	14 A	14	0	0	0
381	7 A	15	1	0	0	381	13 A	15	0	0	0	381	14 A	15	0	0	0
381	7 A	16	1	0	0	381	13 A	16	0	0	0	381	14 A	16	0	0	0
			C	U	B				C	U	B						
381	15 A	9	0	0	0	381	16 A	9	0	0	0						
381	15 A	10	0	0	0	381	16 A	10	0	0	0						
381	15 A	11	0	0	0	381	16 A	11	0	0	0						
381	15 A	12	0	0	0	381	16 A	12	0	0	0						
381	15 A	13	0	0	0	381	16 A	13	0	0	0						
381	15 A	14	0	0	0	381	16 A	14	0	0	0						
381	15 A	15	0	0	0	381	16 A	15	0	0	0						
381	15 A	16	0	0	0	381	16 A	16	0	0	0						

A-4 4-Week Salt Spray – Primer Data

C= Corrosion 0 = None 4 Wk Salt Spray - Primer
U=Undercutting 5= Severe
B=Blistering
4 Week - Primer

			C	U	B				C	U	B				C	U	B
381	1 A	9	0	0	0	381	2 A	9	0	0	0	381	3 A	9	0	0	0
381	1 A	10	0	0	0	381	2 A	10	0	0	0	381	3 A	10	0	0	0
381	1 A	11	0	0	0	381	2 A	11	0	0	0	381	3 A	11	0	0	0
381	1 A	12	0	0	0	381	2 A	12	0	0	0	381	3 A	12	0	0	0
381	1 A	13	0	0	0	381	2 A	13	0	0	0	381	3 A	13	0	0	0
381	1 A	14	0	0	0	381	2 A	14	0	0	0	381	3 A	14	0	0	0
381	1 A	15	0	0	0	381	2 A	15	0	0	0	381	3 A	15	0	0	0
381	1 A	16	x	x	x	381	2 A	16	x	x	x	381	3 A	16	x	x	x
			C	U	B				C	U	B				C	U	B
381	4 A	9	0	0	0	381	5 A	9	0	0	0	381	6 A	9	0	0	0
381	4 A	10	0	0	0	381	5 A	10	0	0	0	381	6 A	10	0	0	0
381	4 A	11	0	0	0	381	5 A	11	0	0	0	381	6 A	11	0	0	0
381	4 A	12	0	0	0	381	5 A	12	0	0	0	381	6 A	12	0	0	0
381	4 A	13	0	0	0	381	5 A	13	0	0	0	381	6 A	13	0	0	0
381	4 A	14	0	0	0	381	5 A	14	0	0	0	381	6 A	14	0	0	0
381	4 A	15	0	0	0	381	5 A	15	0	0	0	381	6 A	15	0	0	0
381	4 A	16	x	x	x	381	5 A	16	x	x	x	381	6 A	16	x	x	x
			C	U	B				C	U	B				C	U	B
381	7 A	9	1	0	0	381	13 A	9	0	0	0	381	14 A	9	1	0	0
381	7 A	10	1	0	0	381	13 A	10	0	0	0	381	14 A	10	1	0	0
381	7 A	11	1	0	0	381	13 A	11	0	0	0	381	14 A	11	1	0	0
381	7 A	12	1	0	0	381	13 A	12	0	0	0	381	14 A	12	1	0	0
381	7 A	13	1	0	0	381	13 A	13	0	0	0	381	14 A	13	1	0	0
381	7 A	14	1	0	0	381	13 A	14	0	0	0	381	14 A	14	1	0	0
381	7 A	15	1	0	0	381	13 A	15	0	0	0	381	14 A	15	1	0	0
381	7 A	16	x	x	x	381	13 A	16	x	x	x	381	14 A	16	1	0	0
			C	U	B				C	U	B				C	U	B
381	16 A	9	1	0	0	381	15 A	9	1	1	1						
381	16 A	10	0	0	0	381	15 A	10	1	1	1						
381	16 A	11	0	0	0	381	15 A	11	1	0	1						
381	16 A	12	1	0	0	381	15 A	12	1	0	2						
381	16 A	13	1	0	0	381	15 A	13	1	0	2						
381	16 A	14	0	0	0	381	15 A	14	1	0	1						
381	16 A	15	1	0	0	381	15 A	15	1	0	1						
381	16 A	16	x	x	x	381	15 A	16	x	x	x						

A-5 6-Week Salt Spray – Primer Data

6 Wk Salt Spray - Primer

C= Corrosion
U=Undercutting
B=Blistering

0 = None
5= Severe

6 Week - Primer

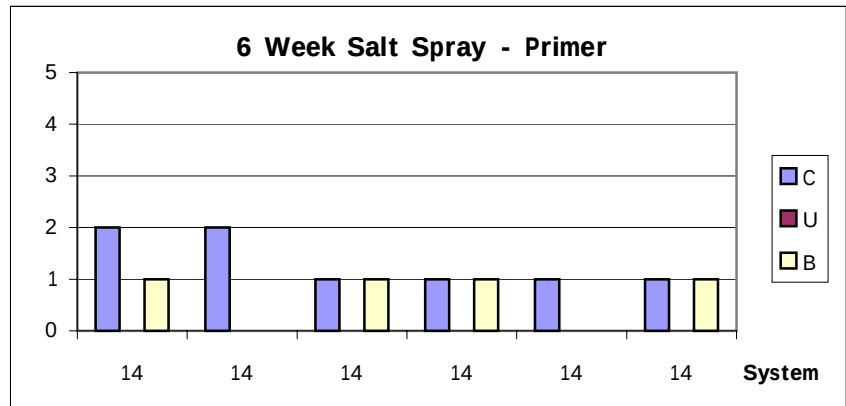
				C	U	B					C	U	B
381	1	A	9	0	0	0	381	2	A	9	0	0	0
381	1	A	10	0	0	0	381	2	A	10	0	0	0
381	1	A	11	0	0	0	381	2	A	11	0	0	0
381	1	A	12	0	0	0	381	2	A	12	0	0	0
381	1	A	13	0	0	0	381	2	A	13	0	0	0
381	1	A	14	0	0	0	381	2	A	14	0	0	0
381	1	A	15	x	x	x	381	2	A	15	x	x	x
381	1	A	16	x	x	x	381	2	A	16	x	x	x
				C	U	B					C	U	B
381	3	A	9	0	0	0	381	4	A	9	0	0	0
381	3	A	10	0	0	0	381	4	A	10	0	0	0
381	3	A	11	0	0	0	381	4	A	11	0	0	0
381	3	A	12	0	0	0	381	4	A	12	0	0	0
381	3	A	13	0	0	0	381	4	A	13	0	0	0
381	3	A	14	0	0	0	381	4	A	14	0	0	0
381	3	A	15	x	x	x	381	4	A	15	x	x	x
381	3	A	16	x	x	x	381	4	A	16	x	x	x
				C	U	B					C	U	B
381	5	A	9	0	0	0	381	6	A	9	0	0	0
381	5	A	10	0	0	0	381	6	A	10	0	0	0
381	5	A	11	0	0	0	381	6	A	11	0	0	0
381	5	A	12	0	0	0	381	6	A	12	0	0	0
381	5	A	13	0	0	0	381	6	A	13	0	0	0
381	5	A	14	0	0	0	381	6	A	14	0	0	0
381	5	A	15	x	x	x	381	6	A	15	x	x	x
381	5	A	16	x	x	x	381	6	A	16	x	x	x

6 Wk Salt Spray - Primer

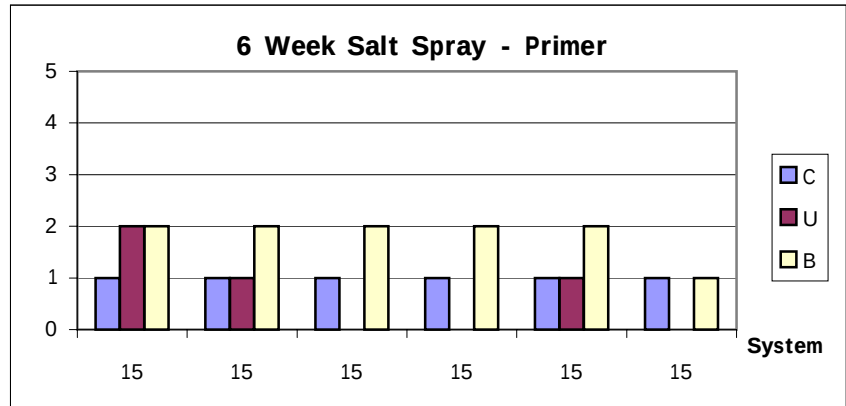
				C	U	B
381	7	A	9	1	0	0
381	7	A	10	1	0	0
381	7	A	11	1	0	0
381	7	A	12	1	0	0
381	7	A	13	1	0	0
381	7	A	14	1	0	0
381	7	A	15	x	x	x
381	7	A	16	x	x	x

				C	U	B
381	13	A	9	0	0	0
381	13	A	10	0	0	0
381	13	A	11	0	0	0
381	13	A	12	0	0	0
381	13	A	13	0	0	0
381	13	A	14	0	0	0
381	13	A	15	x	x	x
381	13	A	16	x	x	x

				C	U	B
381	14	A	9	2	0	1
381	14	A	10	2	0	0
381	14	A	11	1	0	1
381	14	A	12	1	0	1
381	14	A	13	1	0	0
381	14	A	14	1	0	1
381	14	A	15	x	x	x
381	14	A	16	x	x	x



				C	U	B
381	15	A	9	1	2	2
381	15	A	10	1	1	2
381	15	A	11	1	0	2
381	15	A	12	1	0	2
381	15	A	13	1	1	2
381	15	A	14	1	0	1
381	15	A	15	x	x	x
381	15	A	16	x	x	x



				C	U	B
381	16	A	9	1	0	0
381	16	A	10	1	0	0
381	16	A	11	1	0	0
381	16	A	12	1	0	0
381	16	A	13	1	0	0
381	16	A	14	1	0	0
381	16	A	15	x	x	x
381	16	A	16	x	x	x

A-6 1200 Hour Salt Spray – Primer Data

1200 Hr Salt Spray-Primer

C= Corrosion
U=Undercutting
B=Blistering

0 = None
5= Severe

1200 Hours - Primer

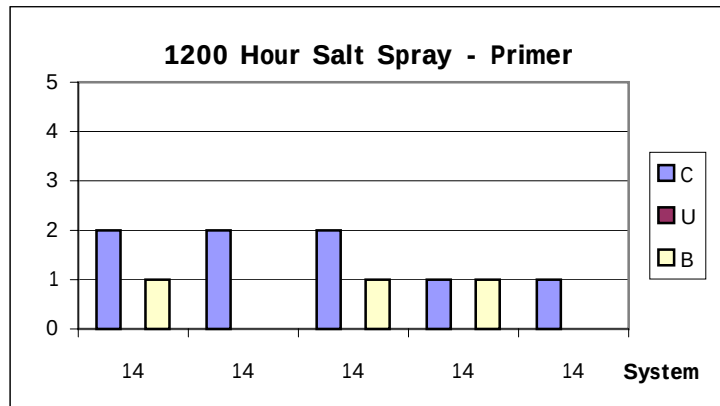
			C	U	B				C	U	B
381	1 A	9	0	0	0	381	2 A	9	0	0	0
381	1 A	10	0	0	0	381	2 A	10	0	0	0
381	1 A	11	0	0	0	381	2 A	11	0	0	0
381	1 A	12	0	0	0	381	2 A	12	0	0	0
381	1 A	13	0	0	0	381	2 A	13	0	0	0
381	1 A	14	x	x	x	381	2 A	14	x	x	x
381	1 A	15	x	x	x	381	2 A	15	x	x	x
381	1 A	16	x	x	x	381	2 A	16	x	x	x
			C	U	B				C	U	B
381	3 A	9	0	0	0	381	4 A	9	0	0	0
381	3 A	10	0	0	0	381	4 A	10	0	0	0
381	3 A	11	0	0	0	381	4 A	11	0	0	0
381	3 A	12	0	0	0	381	4 A	12	0	0	0
381	3 A	13	0	0	0	381	4 A	13	0	0	0
381	3 A	14	x	x	x	381	4 A	14	x	x	x
381	3 A	15	x	x	x	381	4 A	15	x	x	x
381	3 A	16	x	x	x	381	4 A	16	x	x	x
			C	U	B				C	U	B
381	5 A	9	0	0	0	381	6 A	9	0	0	0
381	5 A	10	0	0	0	381	6 A	10	0	0	0
381	5 A	11	0	0	0	381	6 A	11	0	0	0
381	5 A	12	0	0	0	381	6 A	12	0	0	0
381	5 A	13	0	0	0	381	6 A	13	0	0	0
381	5 A	14	x	x	x	381	6 A	14	x	x	x
381	5 A	15	x	x	x	381	6 A	15	x	x	x
381	5 A	16	x	x	x	381	6 A	16	x	x	x

1200 Hr Salt Spray-Primer

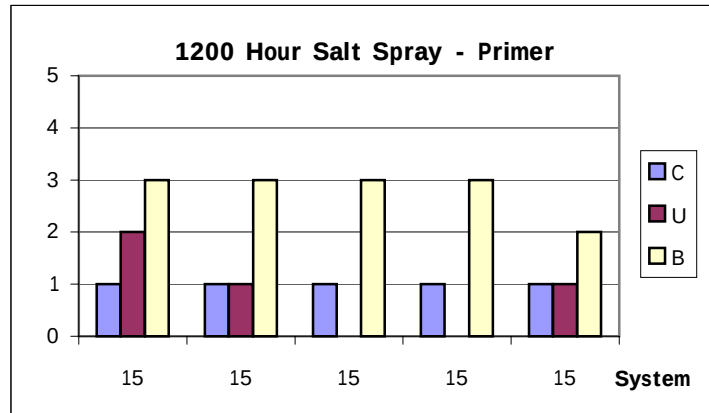
			C	U	B
381	7 A	9	1	0	0
381	7 A	10	1	0	0
381	7 A	11	1	0	0
381	7 A	12	1	0	0
381	7 A	13	1	0	0
381	7 A	14	x	x	x
381	7 A	15	x	x	x
381	7 A	16	x	x	x

			C	U	B
381	13 A	9	0	0	0
381	13 A	10	0	0	0
381	13 A	11	0	0	0
381	13 A	12	0	0	0
381	13 A	13	0	0	0
381	13 A	14	x	x	x
381	13 A	15	x	x	x
381	13 A	16	x	x	x

			C	U	B
381	14 A	9	2	0	1
381	14 A	10	2	0	0
381	14 A	11	2	0	1
381	14 A	12	1	0	1
381	14 A	13	1	0	0
381	14 A	14	x	x	x
381	14 A	15	x	x	x
381	14 A	16	x	x	x



			C	U	B
381	15 A	9	1	2	3
381	15 A	10	1	1	3
381	15 A	11	1	0	3
381	15 A	12	1	0	3
381	15 A	13	1	1	2
381	15 A	14	x	x	x
381	15 A	15	x	x	x
381	15 A	16	x	x	x



			C	U	B
381	16 A	9	1	0	0
381	16 A	10	1	0	0
381	16 A	11	1	0	0
381	16 A	12	1	0	0
381	16 A	13	1	0	0
381	16 A	14	x	x	x
381	16 A	15	x	x	x
381	16 A	16	x	x	x

A-7 10-Week Salt Spray – Primer Data

10 Wk Salt Spray-Primer

C= Corrosion
U=Undercutting
B=Blistering

0 = None
5= Severe

10 Week - Primer

			C	U	B
381	1 A	9	0	0	0
381	1 A	10	0	0	0
381	1 A	11	0	0	0
381	1 A	12	0	0	0
381	1 A	13	x	x	x
381	1 A	14	x	x	x
381	1 A	15	x	x	x
381	1 A	16	x	x	x

			C	U	B
381	2 A	9	0	0	0
381	2 A	10	0	0	0
381	2 A	11	0	0	0
381	2 A	12	0	0	0
381	2 A	13	x	x	x
381	2 A	14	x	x	x
381	2 A	15	x	x	x
381	2 A	16	x	x	x

			C	U	B
381	3 A	9	0	0	0
381	3 A	10	0	0	0
381	3 A	11	0	0	0
381	3 A	12	0	0	0
381	3 A	13	x	x	x
381	3 A	14	x	x	x
381	3 A	15	x	x	x
381	3 A	16	x	x	x

			C	U	B
381	4 A	9	0	0	0
381	4 A	10	0	0	0
381	4 A	11	0	0	0
381	4 A	12	0	0	0
381	4 A	13	x	x	x
381	4 A	14	x	x	x
381	4 A	15	x	x	x
381	4 A	16	x	x	x

			C	U	B
381	5 A	9	0	0	0
381	5 A	10	0	0	0
381	5 A	11	0	0	0
381	5 A	12	0	0	0
381	5 A	13	x	x	x
381	5 A	14	x	x	x
381	5 A	15	x	x	x
381	5 A	16	x	x	x

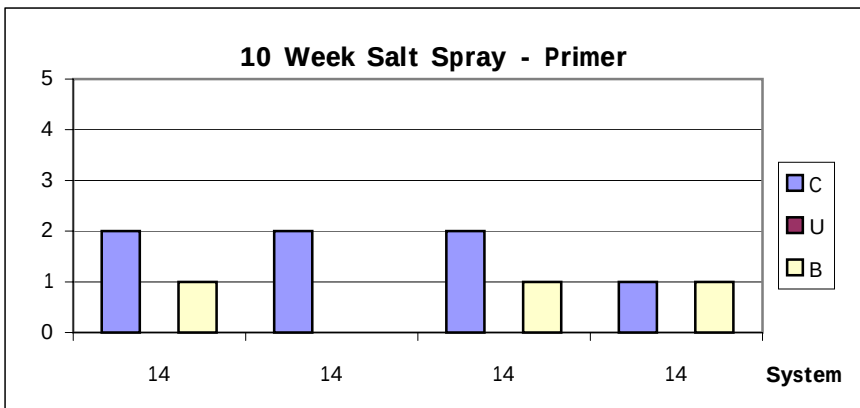
			C	U	B
381	6 A	9	0	0	0
381	6 A	10	0	0	0
381	6 A	11	0	0	0
381	6 A	12	0	0	0
381	6 A	13	x	x	x
381	6 A	14	x	x	x
381	6 A	15	x	x	x
381	6 A	16	x	x	x

10 Wk Salt Spray-Primer

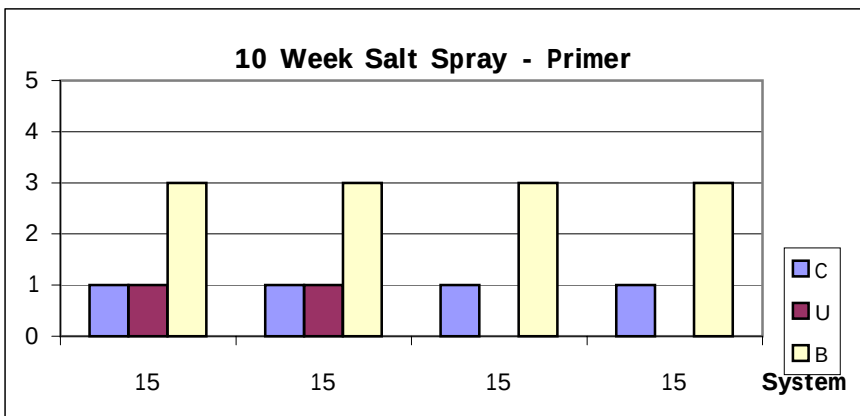
			C	U	B
381	7 A	9	1	0	0
381	7 A	10	1	0	0
381	7 A	11	1	0	0
381	7 A	12	1	0	0
381	7 A	13	x	x	x
381	7 A	14	x	x	x
381	7 A	15	x	x	x
381	7 A	16	x	x	x

			C	U	B
381	13 A	9	0	0	0
381	13 A	10	0	0	0
381	13 A	11	0	0	0
381	13 A	12	0	0	0
381	13 A	13	x	x	x
381	13 A	14	x	x	x
381	13 A	15	x	x	x
381	13 A	16	x	x	x

			C	U	B
381	14 A	9	2	0	1
381	14 A	10	2	0	0
381	14 A	11	2	0	1
381	14 A	12	1	0	1
381	14 A	13	x	x	x
381	14 A	14	x	x	x
381	14 A	15	x	x	x
381	14 A	16	x	x	x



			C	U	B
381	15 A	9	1	1	3
381	15 A	10	1	1	3
381	15 A	11	1	0	3
381	15 A	12	1	0	3
381	15 A	13	x	x	x
381	15 A	14	x	x	x
381	15 A	15	x	x	x
381	15 A	16	x	x	x



			C	U	B
381	16 A	9	1	0	0
381	16 A	10	1	0	0
381	16 A	11	1	0	0
381	16 A	12	1	0	0
381	16 A	13	x	x	x
381	16 A	14	x	x	x
381	16 A	15	x	x	x
381	16 A	16	x	x	x

A-8 1848 Hour Salt Spray – Primer Data

1848 Hr Salt Spray-Primer

C= Corrosion
U=Undercutting
B=Blistering
0 = None
5= Severe

1848 Hours - Primer

			C	U	B
381	1 A	9	0	0	0
381	1 A	10	0	0	0
381	1 A	11	0	0	0
381	1 A	12	x	x	x
381	1 A	13	x	x	x
381	1 A	14	x	x	x
381	1 A	15	x	x	x
381	1 A	16	x	x	x

			C	U	B
381	2 A	9	0	0	0
381	2 A	10	0	0	0
381	2 A	11	1	0	0
381	2 A	12	x	x	x
381	2 A	13	x	x	x
381	2 A	14	x	x	x
381	2 A	15	x	x	x
381	2 A	16	x	x	x

			C	U	B
381	3 A	9	1	0	0
381	3 A	10	1	0	0
381	3 A	11	1	0	0
381	3 A	12	x	x	x
381	3 A	13	x	x	x
381	3 A	14	x	x	x
381	3 A	15	x	x	x
381	3 A	16	x	x	x

			C	U	B
381	4 A	9	0	0	0
381	4 A	10	0	0	0
381	4 A	11	1	0	0
381	4 A	12	x	x	x
381	4 A	13	x	x	x
381	4 A	14	x	x	x
381	4 A	15	x	x	x
381	4 A	16	x	x	x

			C	U	B
381	5 A	9	1	0	0
381	5 A	10	1	0	0
381	5 A	11	0	0	0
381	5 A	12	x	x	x
381	5 A	13	x	x	x
381	5 A	14	x	x	x
381	5 A	15	x	x	x
381	5 A	16	x	x	x

			C	U	B
381	6 A	9	1	0	0
381	6 A	10	1	0	0
381	6 A	11	1	0	0
381	6 A	12	x	x	x
381	6 A	13	x	x	x
381	6 A	14	x	x	x
381	6 A	15	x	x	x
381	6 A	16	x	x	x

1848 Hr Salt Spray-Primer

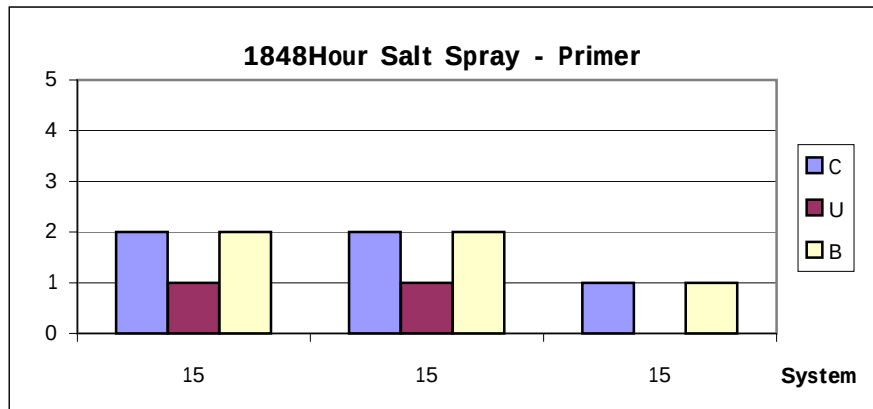
			C	U	B
381	7 A	9	1	0	0
381	7 A	10	1	0	0
381	7 A	11	2	0	0
381	7 A	12	x	x	x
381	7 A	13	x	x	x
381	7 A	14	x	x	x
381	7 A	15	x	x	x
381	7 A	16	x	x	x

			C	U	B
381	13 A	9	1	0	1
381	13 A	10	1	0	1
381	13 A	11	1	0	0
381	13 A	12	x	x	x
381	13 A	13	x	x	x
381	13 A	14	x	x	x
381	13 A	15	x	x	x
381	13 A	16	x	x	x

			C	U	B
381	14 A	9	1	0	1
381	14 A	10	1	0	1
381	14 A	11	1	1	0
381	14 A	12	x	x	x
381	14 A	13	x	x	x
381	14 A	14	x	x	x
381	14 A	15	x	x	x
381	14 A	16	x	x	x

			C	U	B
381	16 A	9	1	0	0
381	16 A	10	1	0	0
381	16 A	11	1	0	0
381	16 A	12	x	x	x
381	16 A	13	x	x	x
381	16 A	14	x	x	x
381	16 A	15	x	x	x
381	16 A	16	x	x	x

			C	U	B
381	15 A	9	2	1	2
381	15 A	10	2	1	2
381	15 A	11	1	0	1
381	15 A	12	x	x	x
381	15 A	13	x	x	x
381	15 A	14	x	x	x
381	15 A	15	x	x	x
381	15 A	16	x	x	x



A-9 2420 Hour Salt Spray – Primer Data

2420 Hr Salt Spray-Primer

C= Corrosion
U=Undercutting
B=Blistering

0 = None
5= Severe

2420 Hours - Primer

				C	U	B
381	1 A	9	1	0	0	
381	1 A	10	x	x	x	
381	1 A	11	x	x	x	
381	1 A	12	x	x	x	
381	1 A	13	x	x	x	
381	1 A	14	x	x	x	
381	1 A	15	x	x	x	
381	1 A	16	x	x	x	

				C	U	B
381	2 A	9	1	0	0	
381	2 A	10	x	x	x	
381	2 A	11	x	x	x	
381	2 A	12	x	x	x	
381	2 A	13	x	x	x	
381	2 A	14	x	x	x	
381	2 A	15	x	x	x	
381	2 A	16	x	x	x	

				C	U	B
381	3 A	9	1	0	0	
381	3 A	10	x	x	x	
381	3 A	11	x	x	x	
381	3 A	12	x	x	x	
381	3 A	13	x	x	x	
381	3 A	14	x	x	x	
381	3 A	15	x	x	x	
381	3 A	16	x	x	x	

				C	U	B
381	4 A	9	0	0	0	
381	4 A	10	x	x	x	
381	4 A	11	x	x	x	
381	4 A	12	x	x	x	
381	4 A	13	x	x	x	
381	4 A	14	x	x	x	
381	4 A	15	x	x	x	
381	4 A	16	x	x	x	

				C	U	B
381	5 A	9	1	0	0	
381	5 A	10	x	x	x	
381	5 A	11	x	x	x	
381	5 A	12	x	x	x	
381	5 A	13	x	x	x	
381	5 A	14	x	x	x	
381	5 A	15	x	x	x	
381	5 A	16	x	x	x	

				C	U	B
381	6 A	9	1	0	0	
381	6 A	10	x	x	x	
381	6 A	11	x	x	x	
381	6 A	12	x	x	x	
381	6 A	13	x	x	x	
381	6 A	14	x	x	x	
381	6 A	15	x	x	x	
381	6 A	16	x	x	x	

2420 Hr Salt Spray-Primer

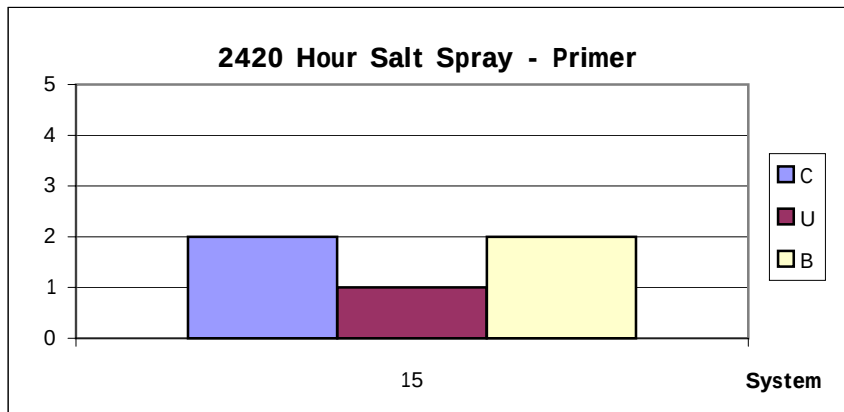
			C	U	B
381	7 A	9	2	0	0
381	7 A	10	x	x	x
381	7 A	11	x	x	x
381	7 A	12	x	x	x
381	7 A	13	x	x	x
381	7 A	14	x	x	x
381	7 A	15	x	x	x
381	7 A	16	x	x	x

			C	U	B
381	13 A	9	1	0	1
381	13 A	10	x	x	x
381	13 A	11	x	x	x
381	13 A	12	x	x	x
381	13 A	13	x	x	x
381	13 A	14	x	x	x
381	13 A	15	x	x	x
381	13 A	16	x	x	x

			C	U	B
381	14 A	9	2	0	1
381	14 A	10	x	x	x
381	14 A	11	x	x	x
381	14 A	12	x	x	x
381	14 A	13	x	x	x
381	14 A	14	x	x	x
381	14 A	15	x	x	x
381	14 A	16	x	x	x

			C	U	B
381	16 A	9	1	0	0
381	16 A	10	x	x	x
381	16 A	11	x	x	x
381	16 A	12	x	x	x
381	16 A	13	x	x	x
381	16 A	14	x	x	x
381	16 A	15	x	x	x
381	16 A	16	x	x	x

			C	U	B
381	15 A	9	2	1	2
381	15 A	10	x	x	x
381	15 A	11	x	x	x
381	15 A	12	x	x	x
381	15 A	13	x	x	x
381	15 A	14	x	x	x
381	15 A	15	x	x	x
381	15 A	16	x	x	x



A-10 Salt Spray – Primer Summary

Salt Spray-Primer Summary

C=Corrosion, U=Undercutting, B=Blister

Good = C-0, U-0, B-0

			2 Week	4 Week	6 Week	1200 Hours	10 Week	1848 Hours	2420 Hours		1848 Hours
381	1	A	Good	Good	Good	Good	Good	Good	C-1	1	Good
381	2	A	Good	Good	Good	Good	Good	C-1	C-1	2	C-1
381	3	A	Good	Good	Good	Good	Good	C-1	C-1	3	C-1
381	4	A	Good	Good	Good	Good	Good	C-1	Good	4	C-1
381	5	A	Good	Good	Good	Good	Good	C-1	C-1	5	C-1
381	6	A	Good	Good	Good	Good	Good	C-1	C-1	6	C-1
381	7	A	C-1	C-1	C-1	C-1	C-1	C-2	C-2	7	C-2
381	13	A	Good	Good	Good	Good	Good	C-1,B-1	C-1,B-1	13	C-1,B-1
381	14	A	Good	C-1	C-2,B-1	C-2,B-1	C-2,B-1	C-1,U-1,B-1	C-2,B-1	14	C-1,U-1,B-1
381	15	A	Good	C-1	C-1,U-2,B-2	C-1,U-2,B-3	C-1,U-1,B-3	C-2,U-1,B-2	C-2,U-1,B-2	15	C-2,U-1,B-2
381	16	A	Good	C-1,U-1,B-2	C-1	C-1	C-1	C-1	C-1	16	C-1

Primer Summary:

Based on the results shown on the prior pages and summarized above, all of the Primer Systems show potential to be a viable Self-Etch Primer. Systems 7,14, and 15 show the least favorable results but could have better or worse results after the Full System (Self-Etch + Topcoat) tests are run. Some Self-Etch systems require a pre-treatment prior to the application of the Self-Etch Primer.

A-11 2-Week Salt Spray – Full System

2 Week Salt Spray - Full

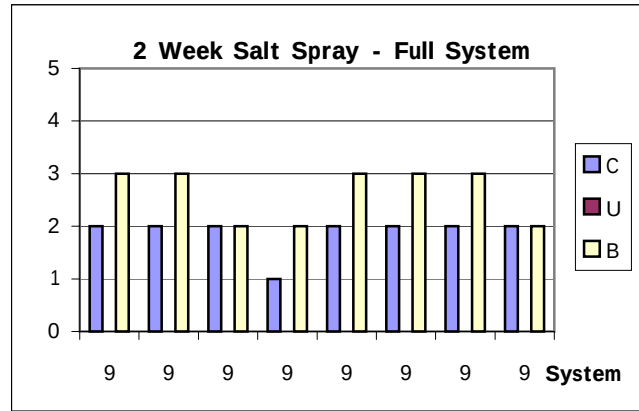
C= Corrosion 0 = None
 U=Undercutting 5= Severe
 B=Blistering

2 Week - Full System

			C	U	B				C	U	B				C	U	B
381	1 A	17	0	0	0	381	2 A	17	0	0	0	381	3 A	17	0	0	0
381	1 A	18	0	0	0	381	2 A	18	0	0	0	381	3 A	18	0	0	0
381	1 A	19	0	0	0	381	2 A	19	0	0	0	381	3 A	19	0	0	0
381	1 A	20	0	0	0	381	2 A	20	0	0	0	381	3 A	20	0	0	0
381	1 A	21	0	0	0	381	2 A	21	0	0	0	381	3 A	21	0	0	0
381	1 A	22	0	0	0	381	2 A	22	0	0	0	381	3 A	22	0	0	0
381	1 A	23	0	0	0	381	2 A	23	0	0	0	381	3 A	23	0	0	0
381	1 A	24	0	0	0	381	2 A	24	0	0	0	381	3 A	24	0	0	0
			C	U	B				C	U	B				C	U	B
381	4 A	17	0	0	0	381	5 A	17	0	0	0	381	6 A	17	0	0	0
381	4 A	18	0	0	0	381	5 A	18	0	0	0	381	6 A	18	0	0	0
381	4 A	19	0	0	0	381	5 A	19	0	0	0	381	6 A	19	0	0	0
381	4 A	20	0	0	0	381	5 A	20	0	0	0	381	6 A	20	0	0	0
381	4 A	21	0	0	0	381	5 A	21	0	0	0	381	6 A	21	0	0	0
381	4 A	22	0	0	0	381	5 A	22	0	0	0	381	6 A	22	0	0	0
381	4 A	23	0	0	0	381	5 A	23	0	0	0	381	6 A	23	0	0	0
381	4 A	24	0	0	0	381	5 A	24	0	0	0	381	6 A	24	0	0	0
			C	U	B				C	U	B				C	U	B
381	7 A	17	0	0	0	381	8 A	17	0	0	0						
381	7 A	18	0	0	0	381	8 A	18	0	0	0						
381	7 A	19	0	0	0	381	8 A	19	0	0	0						
381	7 A	20	0	0	0	381	8 A	20	0	0	0						
381	7 A	21	0	0	0	381	8 A	21	0	0	0						
381	7 A	22	0	0	0	381	8 A	22	0	0	0						
381	7 A	23	0	0	0	381	8 A	23	0	0	0						
381	7 A	24	0	0	0	381	8 A	24	0	0	0						

2 Week Salt Spray - Full

			C	U	B
381	9 A	17	2	0	3
381	9 A	18	2	0	3
381	9 A	19	2	0	2
381	9 A	20	1	0	2
381	9 A	21	2	0	3
381	9 A	22	2	0	3
381	9 A	23	2	0	3
381	9 A	24	2	0	2



			C	U	B
381	10 A	17	0	0	0
381	10 A	18	0	0	0
381	10 A	19	0	0	0
381	10 A	20	0	0	0
381	10 A	21	0	0	0
381	10 A	22	0	0	0
381	10 A	23	0	0	0
381	10 A	24	0	0	0

			C	U	B
381	11 A	17	0	0	0
381	11 A	18	0	0	0
381	11 A	19	0	0	0
381	11 A	20	0	0	0
381	11 A	21	0	0	0
381	11 A	22	0	0	0
381	11 A	23	0	0	0
381	11 A	24	0	0	0

			C	U	B
381	13 A	17	0	0	0
381	13 A	18	1	0	0
381	13 A	19	0	0	0
381	13 A	20	0	0	0
381	13 A	21	0	0	0
381	13 A	22	0	0	0
381	13 A	23	0	0	0
381	13 A	24	0	0	0

			C	U	B
381	14 A	17	0	0	0
381	14 A	18	0	0	0
381	14 A	19	0	0	0
381	14 A	20	1	0	0
381	14 A	21	0	0	0
381	14 A	22	0	0	0
381	14 A	23	0	0	0
381	14 A	24	0	0	0

			C	U	B
381	15 A	17	1	0	0
381	15 A	18	1	0	0
381	15 A	19	0	0	0
381	15 A	20	0	0	0
381	15 A	21	0	0	0
381	15 A	22	0	0	0
381	15 A	23	0	0	0
381	15 A	24	0	0	0

			C	U	B
381	16 A	17	0	0	0
381	16 A	18	0	0	0
381	16 A	19	0	0	0
381	16 A	20	0	0	0
381	16 A	21	0	0	0
381	16 A	22	0	0	0
381	16 A	23	0	0	0
381	16 A	24	0	0	0

A-12 4-Week Salt Spray – Full System

C= Corrosion
U=Undercutting
B=Blistering

0 = None
5= Severe

4 Week Salt Spray - Full

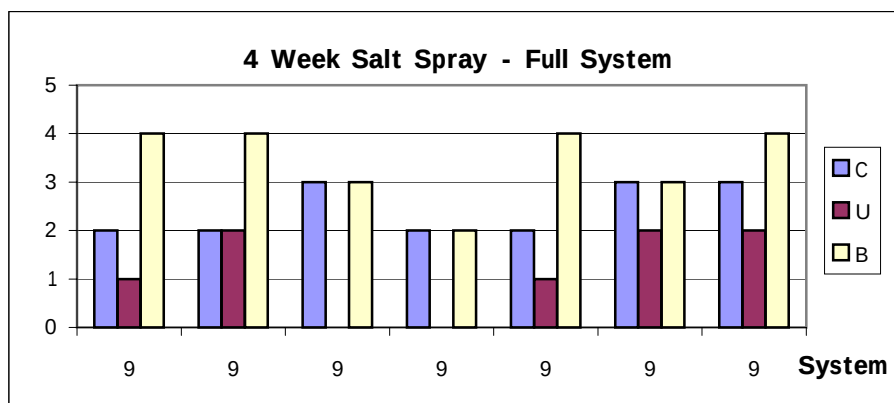
4 Week - Full System

			C	U	B				C	U	B				C	U	B
381	1 A	17	1	0	0	381	2 A	17	0	0	0	381	3 A	17	0	0	0
381	1 A	18	0	0	0	381	2 A	18	1	0	0	381	3 A	18	1	0	0
381	1 A	19	1	0	0	381	2 A	19	0	0	0	381	3 A	19	1	0	0
381	1 A	20	0	0	0	381	2 A	20	0	0	0	381	3 A	20	0	0	0
381	1 A	21	0	0	0	381	2 A	21	0	0	0	381	3 A	21	0	0	0
381	1 A	22	1	0	0	381	2 A	22	1	0	0	381	3 A	22	0	0	0
381	1 A	23	1	0	0	381	2 A	23	1	0	0	381	3 A	23	1	0	0
381	1 A	24	x	x	x	381	2 A	24	x	x	x	381	3 A	24	x	x	x

			C	U	B				C	U	B				C	U	B
381	4 A	17	0	0	0	381	5 A	17	0	0	0	381	6 A	17	0	0	0
381	4 A	18	0	0	0	381	5 A	18	0	0	0	381	6 A	18	0	0	0
381	4 A	19	0	0	0	381	5 A	19	1	0	0	381	6 A	19	0	0	0
381	4 A	20	1	0	0	381	5 A	20	0	0	0	381	6 A	20	0	0	0
381	4 A	21	0	0	0	381	5 A	21	1	0	0	381	6 A	21	0	0	0
381	4 A	22	1	0	0	381	5 A	22	1	0	0	381	6 A	22	0	0	0
381	4 A	23	1	0	0	381	5 A	23	0	0	0	381	6 A	23	0	0	0
381	4 A	24	x	x	x	381	5 A	24	x	x	x	381	6 A	24	x	x	x

			C	U	B				C	U	B				C	U	B
381	7 A	17	0	0	0	381	8 A	17	0	0	0	381	10 A	17	1	0	0
381	7 A	18	1	0	0	381	8 A	18	1	0	0	381	10 A	18	0	0	0
381	7 A	19	0	0	0	381	8 A	19	1	0	0	381	10 A	19	0	0	0
381	7 A	20	0	0	0	381	8 A	20	1	0	0	381	10 A	20	1	0	0
381	7 A	21	0	0	0	381	8 A	21	0	0	0	381	10 A	21	0	0	0
381	7 A	22	0	0	0	381	8 A	22	0	0	0	381	10 A	22	0	0	0
381	7 A	23	1	0	0	381	8 A	23	0	0	0	381	10 A	23	1	0	0
381	7 A	24	x	x	x	381	8 A	24	x	x	x	381	10 A	24	x	x	x

			C	U	B
381	9 A	17	2	1	4
381	9 A	18	2	2	4
381	9 A	19	3	0	3
381	9 A	20	2	0	2
381	9 A	21	2	1	4
381	9 A	22	3	2	3
381	9 A	23	3	2	4
381	9 A	24	x	x	x



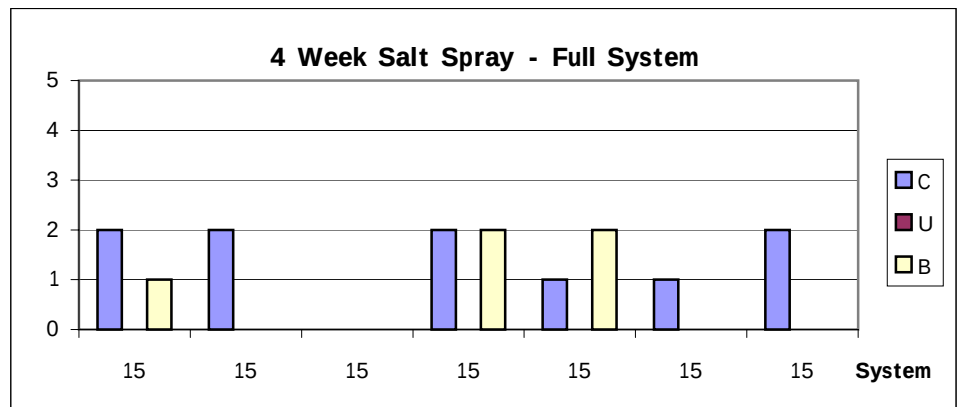
4 Week Salt Spray - Full

			C	U	B
381	11 A	17	0	0	0
381	11 A	18	0	0	0
381	11 A	19	0	0	0
381	11 A	20	0	0	0
381	11 A	21	0	0	0
381	11 A	22	0	0	0
381	11 A	23	0	0	0
381	11 A	24	x	x	x

			C	U	B
381	13 A	17	1	0	0
381	13 A	18	1	0	0
381	13 A	19	0	0	0
381	13 A	20	0	0	0
381	13 A	21	1	0	0
381	13 A	22	0	0	0
381	13 A	23	0	0	0
381	13 A	24	x	x	x

			C	U	B
381	14 A	17	1	0	0
381	14 A	18	1	0	0
381	14 A	19	0	0	0
381	14 A	20	1	0	0
381	14 A	21	0	0	0
381	14 A	22	1	0	0
381	14 A	23	1	0	0
381	14 A	24	x	x	x

			C	U	B
381	15 A	17	2	0	1
381	15 A	18	2	0	0
381	15 A	19	0	0	0
381	15 A	20	2	0	2
381	15 A	21	1	0	2
381	15 A	22	1	0	0
381	15 A	23	2	0	0
381	15 A	24	x	x	x



			C	U	B
381	16 A	17			
381	16 A	18	1	0	0
381	16 A	19	0	0	0
381	16 A	20	1	0	0
381	16 A	21	1	0	0
381	16 A	22	0	0	0
381	16 A	23	0	0	0
381	16 A	24	x	x	x

A-13 6-Week Salt Spray – Full System

6 Week Salt Spray - Full

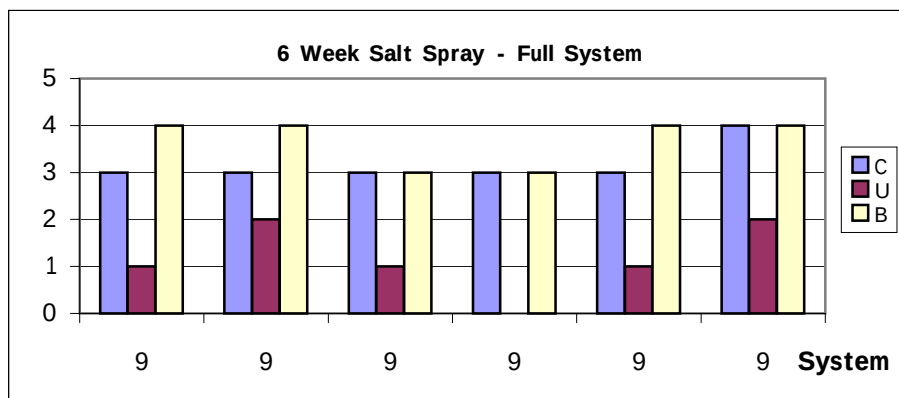
C= Corrosion
U=Undercutting
B=Blistering
6 Week - Full System

0 = None
5= Severe

			C	U	B				C	U	B				C	U	B
381	1 A	17	1	0	0	381	2 A	17	0	0	0	381	2 A	17	0	0	0
381	1 A	18	1	0	0	381	2 A	18	1	0	0	381	2 A	18	1	0	0
381	1 A	19	1	0	0	381	2 A	19	0	0	0	381	2 A	19	0	0	0
381	1 A	20	1	0	0	381	2 A	20	0	0	0	381	2 A	20	0	0	0
381	1 A	21	1	0	0	381	2 A	21	0	0	0	381	2 A	21	0	0	0
381	1 A	22	1	0	0	381	2 A	22	1	0	0	381	2 A	22	1	0	0
381	1 A	23	x	x	x	381	2 A	23	x	x	x	381	2 A	23	x	x	x
381	1 A	24	x	x	x	381	2 A	24	x	x	x	381	2 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	3 A	17	1	0	0	381	4 A	17	1	0	0	381	5 A	17	0	0	0
381	3 A	18	1	0	0	381	4 A	18	1	0	0	381	5 A	18	0	0	0
381	3 A	19	1	0	0	381	4 A	19	1	0	0	381	5 A	19	1	0	0
381	3 A	20	1	0	0	381	4 A	20	1	0	0	381	5 A	20	0	0	0
381	3 A	21	0	0	0	381	4 A	21	1	0	0	381	5 A	21	1	0	0
381	3 A	22	0	0	0	381	4 A	22	1	0	0	381	5 A	22	1	0	0
381	3 A	23	x	x	x	381	4 A	23	x	x	x	381	5 A	23	x	x	x
381	3 A	24	x	x	x	381	4 A	24	x	x	x	381	5 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	6 A	17	0	0	0	381	7 A	17	0	0	0	381	8 A	17	0	0	0
381	6 A	18	0	0	0	381	7 A	18	1	0	0	381	8 A	18	1	0	0
381	6 A	19	0	0	0	381	7 A	19	0	0	0	381	8 A	19	1	0	0
381	6 A	20	0	0	0	381	7 A	20	0	0	0	381	8 A	20	1	0	0
381	6 A	21	0	0	0	381	7 A	21	0	0	0	381	8 A	21	0	0	0
381	6 A	22	0	0	0	381	7 A	22	0	0	0	381	8 A	22	0	0	0
381	6 A	23	x	x	x	381	7 A	23	x	x	x	381	8 A	23	x	x	x
381	6 A	24	x	x	x	381	7 A	24	x	x	x	381	8 A	24	x	x	x

6 Week Salt Spray - Full

			C	U	B
381	9 A	17	3	1	4
381	9 A	18	3	2	4
381	9 A	19	3	1	3
381	9 A	20	3	0	3
381	9 A	21	3	1	4
381	9 A	22	4	2	4
381	9 A	23	x	x	x
381	9 A	24	x	x	x

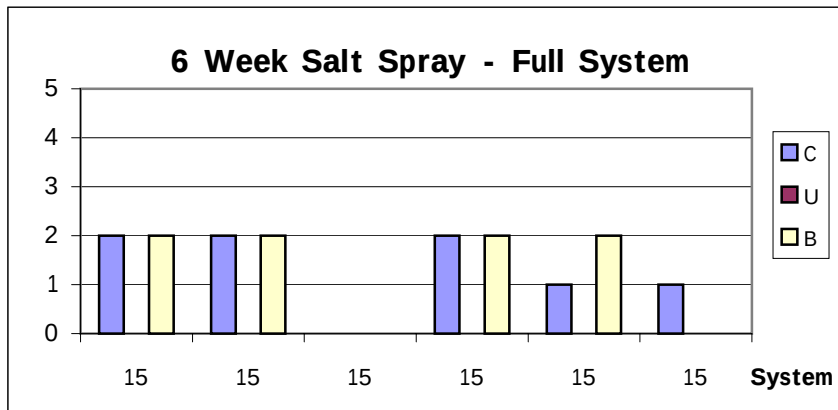


			C	U	B
381	10 A	17	1	0	0
381	10 A	18	1	0	0
381	10 A	19	0	0	0
381	10 A	20	1	0	0
381	10 A	21	0	0	0
381	10 A	22	1	0	0
381	10 A	23	x	x	x
381	10 A	24	x	x	x

			C	U	B
381	11 A	17	1	0	0
381	11 A	18	1	0	0
381	11 A	19	0	0	0
381	11 A	20	0	0	0
381	11 A	21	0	0	0
381	11 A	22	0	0	0
381	11 A	23	x	x	x
381	11 A	24	x	x	x

			C	U	B
381	13 A	17	1	0	0
381	13 A	18	1	0	0
381	13 A	19	1	0	0
381	13 A	20	1	0	0
381	13 A	21	1	0	0
381	13 A	22	1	0	0
381	13 A	23	x	x	x
381	13 A	24	x	x	x

			C	U	B
381	15 A	17	2	0	2
381	15 A	18	2	0	2
381	15 A	19	0	0	0
381	15 A	20	2	0	2
381	15 A	21	1	0	2
381	15 A	22	1	0	0
381	15 A	23	x	x	x
381	15 A	24	x	x	x



			C	U	B
381	14 A	17	1	0	0
381	14 A	18	1	0	0
381	14 A	19	0	0	0
381	14 A	20	1	0	0
381	14 A	21	0	0	0
381	14 A	22	1	0	0
381	14 A	23	x	x	x
381	14 A	24	x	x	x

			C	U	B
381	16 A	17			
381	16 A	18	1	0	0
381	16 A	19	0	0	0
381	16 A	20	1	0	0
381	16 A	21	1	0	0
381	16 A	22	0	0	0
381	16 A	23	x	x	x
381	16 A	24	x	x	x

A-14 1200 Hour Salt Spray – Full System

1200 Hr Salt Spray - Full

C= Corrosion
U=Undercutting
B=Blistering
1200 Hour - Full System

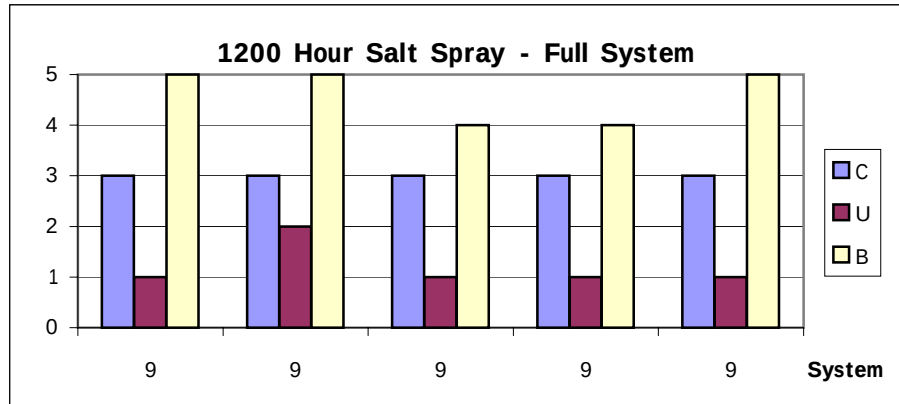
0 = None

5= Severe

			C	U	B				C	U	B				C	U	B
381	1 A	17	1	0	0	381	2 A	17	0	0	0	381	3 A	17	1	0	0
381	1 A	18	1	0	0	381	2 A	18	1	0	0	381	3 A	18	1	0	0
381	1 A	19	1	0	0	381	2 A	19	0	0	0	381	3 A	19	1	0	0
381	1 A	20	1	0	0	381	2 A	20	0	0	0	381	3 A	20	1	0	0
381	1 A	21	1	0	0	381	2 A	21	1	0	0	381	3 A	21	0	0	0
381	1 A	22	x	x	x	381	2 A	22	x	x	x	381	3 A	22	x	x	x
381	1 A	23	x	x	x	381	2 A	23	x	x	x	381	3 A	23	x	x	x
381	1 A	24	x	x	x	381	2 A	24	x	x	x	381	3 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	4 A	17	1	0	0	381	5 A	17	0	0	0	381	6 A	17	0	0	0
381	4 A	18	1	0	0	381	5 A	18	1	0	0	381	6 A	18	1	0	0
381	4 A	19	1	0	0	381	5 A	19	1	0	0	381	6 A	19	0	0	0
381	4 A	20	1	0	0	381	5 A	20	0	0	0	381	6 A	20	0	0	0
381	4 A	21	1	0	0	381	5 A	21	1	0	0	381	6 A	21	0	0	0
381	4 A	22	x	x	x	381	5 A	22	x	x	x	381	6 A	22	x	x	x
381	4 A	23	x	x	x	381	5 A	23	x	x	x	381	6 A	23	x	x	x
381	4 A	24	x	x	x	381	5 A	24	x	x	x	381	6 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	7 A	17	0	0	0	381	8 A	17	1	0	0	381	10 A	17	1	0	0
381	7 A	18	1	0	0	381	8 A	18	1	0	0	381	10 A	18	1	0	0
381	7 A	19	0	0	0	381	8 A	19	1	0	0	381	10 A	19	0	0	0
381	7 A	20	0	0	0	381	8 A	20	1	0	0	381	10 A	20	1	0	0
381	7 A	21	0	0	0	381	8 A	21	0	0	0	381	10 A	21	0	0	0
381	7 A	22	x	x	x	381	8 A	22	x	x	x	381	10 A	22	x	x	x
381	7 A	23	x	x	x	381	8 A	23	x	x	x	381	10 A	23	x	x	x
381	7 A	24	x	x	x	381	8 A	24	x	x	x	381	10 A	24	x	x	x

1200 Hr Salt Spray - Full

			C	U	B
381	9 A	17	3	1	5
381	9 A	18	3	2	5
381	9 A	19	3	1	4
381	9 A	20	3	1	4
381	9 A	21	3	1	5
381	9 A	22	x	x	x
381	9 A	23	x	x	x
381	9 A	24	x	x	x

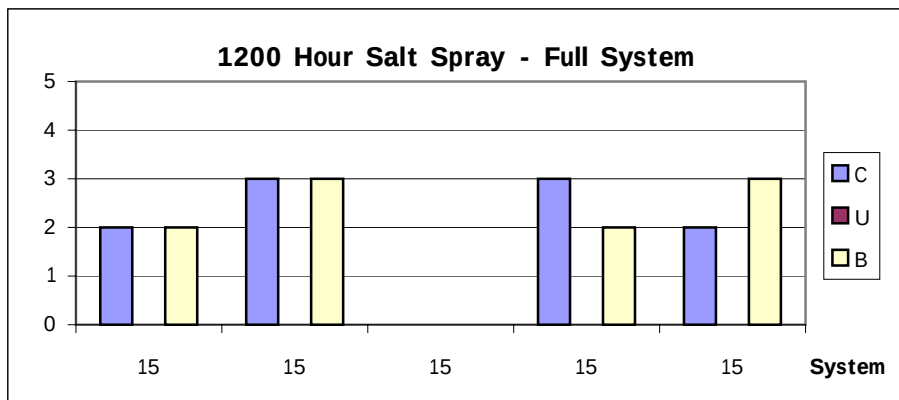


			C	U	B
381	11 A	17	1	0	0
381	11 A	18	1	0	0
381	11 A	19	0	0	0
381	11 A	20	0	0	0
381	11 A	21	0	0	0
381	11 A	22	x	x	x
381	11 A	23	x	x	x
381	11 A	24	x	x	x

			C	U	B
381	13 A	17	1	0	0
381	13 A	18	2	0	0
381	13 A	19	1	0	0
381	13 A	20	1	0	0
381	13 A	21	1	0	0
381	13 A	22	x	x	x
381	13 A	23	x	x	x
381	13 A	24	x	x	x

			C	U	B
381	14 A	17	1	0	0
381	14 A	18	1	0	0
381	14 A	19	0	0	0
381	14 A	20	1	0	0
381	14 A	21	0	0	0
381	14 A	22	x	x	x
381	14 A	23	x	x	x
381	14 A	24	x	x	x

			C	U	B
381	15 A	17	2	0	2
381	15 A	18	3	0	3
381	15 A	19	0	0	0
381	15 A	20	3	0	2
381	15 A	21	2	0	3
381	15 A	22	x	x	x
381	15 A	23	x	x	x
381	15 A	24	x	x	x



			C	U	B
381	16 A	17			
381	16 A	18	1	0	0
381	16 A	19	0	0	0
381	16 A	20	1	0	0
381	16 A	21	1	0	0
381	16 A	22	x	x	x
381	16 A	23	x	x	x
381	16 A	24	x	x	x

A-15 10-Week Salt Spray – Full System

10 Week Salt Spray - Full

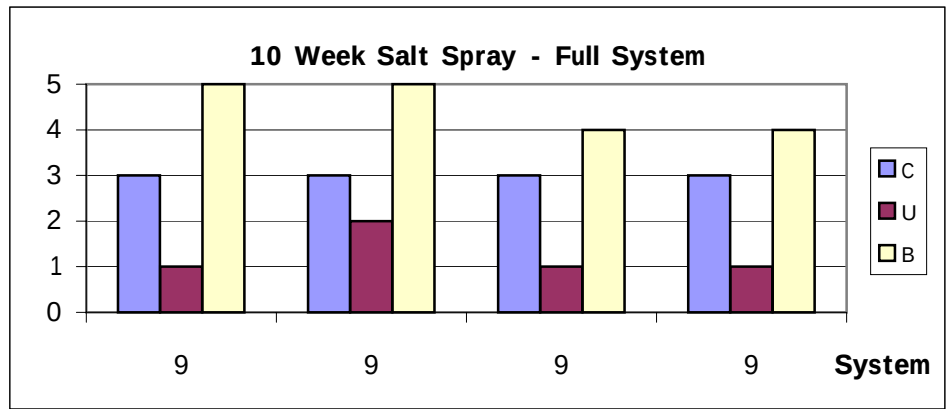
C= Corrosion
U=Undercutting
B=Blistering
0 = None
5= Severe

10 Week - Full System

			C	U	B				C	U	B				C	U	B
381	1 A	17	1	0	0	381	2 A	17	0	0	0	381	3 A	17	1	0	0
381	1 A	18	1	0	0	381	2 A	18	1	0	0	381	3 A	18	1	0	0
381	1 A	19	1	0	0	381	2 A	19	0	0	0	381	3 A	19	1	0	0
381	1 A	20	1	0	0	381	2 A	20	0	0	0	381	3 A	20	1	0	0
381	1 A	21	x	x	x	381	2 A	21	x	x	x	381	3 A	21	x	x	x
381	1 A	22	x	x	x	381	2 A	22	x	x	x	381	3 A	22	x	x	x
381	1 A	23	x	x	x	381	2 A	23	x	x	x	381	3 A	23	x	x	x
381	1 A	24	x	x	x	381	2 A	24	x	x	x	381	3 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	4 A	17	1	0	0	381	5 A	17	0	0	0	381	6 A	17	0	0	0
381	4 A	18	1	0	0	381	5 A	18	1	0	0	381	6 A	18	1	0	0
381	4 A	19	1	0	0	381	5 A	19	1	0	0	381	6 A	19	0	0	0
381	4 A	20	1	0	0	381	5 A	20	0	0	0	381	6 A	20	0	0	0
381	4 A	21	x	x	x	381	5 A	21	x	x	x	381	6 A	21	x	x	x
381	4 A	22	x	x	x	381	5 A	22	x	x	x	381	6 A	22	x	x	x
381	4 A	23	x	x	x	381	5 A	23	x	x	x	381	6 A	23	x	x	x
381	4 A	24	x	x	x	381	5 A	24	x	x	x	381	6 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	7 A	17	0	0	0	381	8 A	17	1	0	0	381	10 A	17	1	0	0
381	7 A	18	1	0	0	381	8 A	18	1	0	0	381	10 A	18	1	0	0
381	7 A	19	0	0	0	381	8 A	19	1	0	0	381	10 A	19	0	0	0
381	7 A	20	0	0	0	381	8 A	20	1	0	0	381	10 A	20	1	0	0
381	7 A	21	x	x	x	381	8 A	21	x	x	x	381	10 A	21	x	x	x
381	7 A	22	x	x	x	381	8 A	22	x	x	x	381	10 A	22	x	x	x
381	7 A	23	x	x	x	381	8 A	23	x	x	x	381	10 A	23	x	x	x
381	7 A	24	x	x	x	381	8 A	24	x	x	x	381	10 A	24	x	x	x

10 Week Salt Spray - Full

			C	U	B
381	9 A	17	3	1	5
381	9 A	18	3	2	5
381	9 A	19	3	1	4
381	9 A	20	3	1	4
381	9 A	21	x	x	x
381	9 A	22	x	x	x
381	9 A	23	x	x	x
381	9 A	24	x	x	x

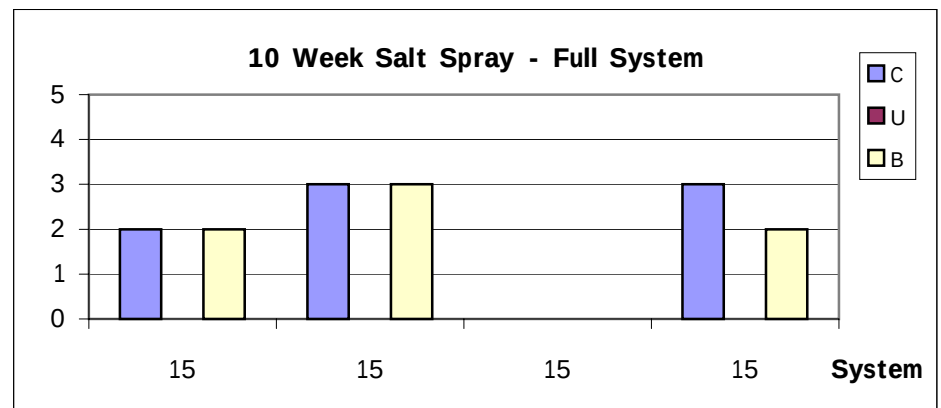


			C	U	B
381	11 A	17	1	0	0
381	11 A	18	1	0	0
381	11 A	19	0	0	0
381	11 A	20	0	0	0
381	11 A	21	x	x	x
381	11 A	22	x	x	x
381	11 A	23	x	x	x
381	11 A	24	x	x	x

			C	U	B
381	13 A	17	1	0	0
381	13 A	18	2	0	0
381	13 A	19	1	0	0
381	13 A	20	1	0	0
381	13 A	21	x	x	x
381	13 A	22	x	x	x
381	13 A	23	x	x	x
381	13 A	24	x	x	x

			C	U	B
381	14 A	17	1	0	0
381	14 A	18	1	0	0
381	14 A	19	0	0	0
381	14 A	20	1	0	0
381	14 A	21	x	x	x
381	14 A	22	x	x	x
381	14 A	23	x	x	x
381	14 A	24	x	x	x

			C	U	B
381	15 A	17	2	0	2
381	15 A	18	3	0	3
381	15 A	19	0	0	0
381	15 A	20	3	0	2
381	15 A	21	x	x	x
381	15 A	22	x	x	x
381	15 A	23	x	x	x
381	15 A	24	x	x	x



			C	U	B
381	16 A	17			
381	16 A	18	1	0	0
381	16 A	19	0	0	0
381	16 A	20	1	0	0
381	16 A	21	x	x	x
381	16 A	22	x	x	x
381	16 A	23	x	x	x
381	16 A	24	x	x	x

A-16 1848 Hour Salt Spray – Full System

1848 Hr Salt Spray - Full

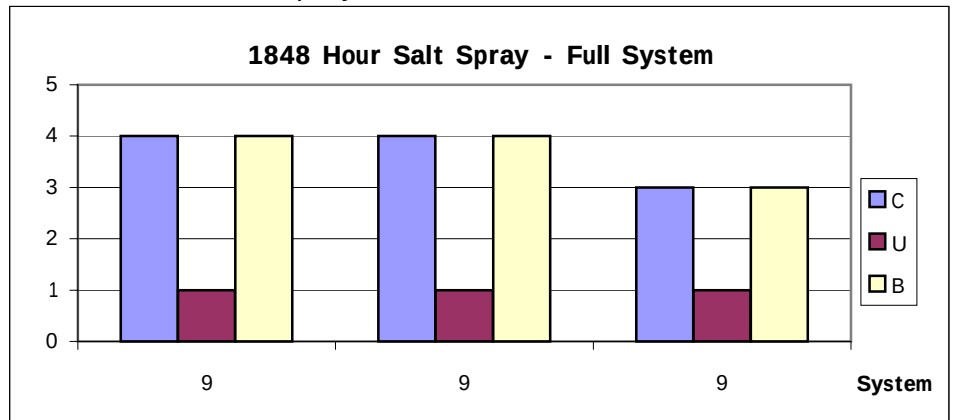
C= Corrosion
U=Undercutting
B=Blistering
0 = None
5= Severe

1848 Hours - Full System

			C	U	B				C	U	B				C	U	B
381	1 A	17	1	0	0	381	2 A	17	1	0	0	381	3 A	17	1	0	0
381	1 A	18	1	0	0	381	2 A	18	1	0	0	381	3 A	18	1	0	0
381	1 A	19	1	0	0	381	2 A	19	1	0	0	381	3 A	19	2	0	0
381	1 A	20	x	x	x	381	2 A	20	x	x	x	381	3 A	20	x	x	x
381	1 A	21	x	x	x	381	2 A	21	x	x	x	381	3 A	21	x	x	x
381	1 A	22	x	x	x	381	2 A	22	x	x	x	381	3 A	22	x	x	x
381	1 A	23	x	x	x	381	2 A	23	x	x	x	381	3 A	23	x	x	x
381	1 A	24	x	x	x	381	2 A	24	x	x	x	381	3 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	4 A	17	1	0	0	381	5 A	17	1	0	0	381	6 A	17	1	0	0
381	4 A	18	2	0	0	381	5 A	18	1	0	0	381	6 A	18	2	0	0
381	4 A	19	2	0	0	381	5 A	19	1	0	0	381	6 A	19	1	0	0
381	4 A	20	x	x	x	381	5 A	20	x	x	x	381	6 A	20	x	x	x
381	4 A	21	x	x	x	381	5 A	21	x	x	x	381	6 A	21	x	x	x
381	4 A	22	x	x	x	381	5 A	22	x	x	x	381	6 A	22	x	x	x
381	4 A	23	x	x	x	381	5 A	23	x	x	x	381	6 A	23	x	x	x
381	4 A	24	x	x	x	381	5 A	24	x	x	x	381	6 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	7 A	17	1	0	0	381	8 A	17	2	0	0	381	10 A	17	1	0	0
381	7 A	18	2	0	0	381	8 A	18	1	0	0	381	10 A	18	1	0	0
381	7 A	19	1	0	0	381	8 A	19	1	0	0	381	10 A	19	1	0	0
381	7 A	20	x	x	x	381	8 A	20	x	x	x	381	10 A	20	x	x	x
381	7 A	21	x	x	x	381	8 A	21	x	x	x	381	10 A	21	x	x	x
381	7 A	22	x	x	x	381	8 A	22	x	x	x	381	10 A	22	x	x	x
381	7 A	23	x	x	x	381	8 A	23	x	x	x	381	10 A	23	x	x	x
381	7 A	24	x	x	x	381	8 A	24	x	x	x	381	10 A	24	x	x	x

1848 Hr Salt Spray - Full

			C	U	B
381	9 A	17	4	1	4
381	9 A	18	4	1	4
381	9 A	19	3	1	3
381	9 A	20	x	x	x
381	9 A	21	x	x	x
381	9 A	22	x	x	x
381	9 A	23	x	x	x
381	9 A	24	x	x	x

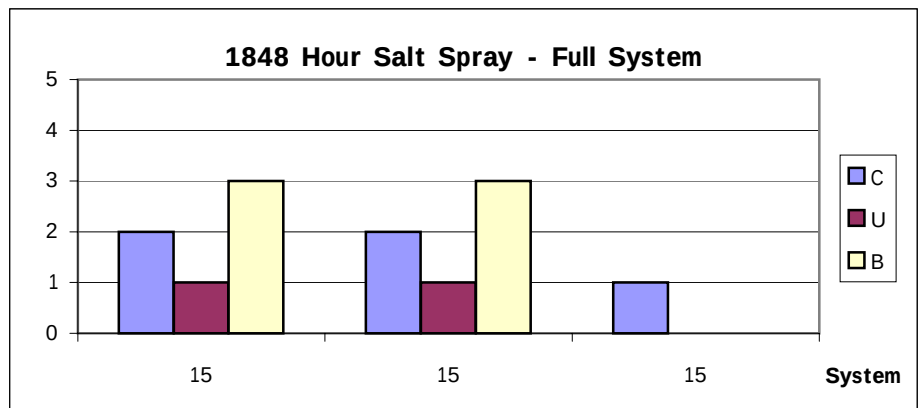


			C	U	B
381	11 A	17	1	0	0
381	11 A	18	2	0	0
381	11 A	19	1	0	0
381	11 A	20	x	x	x
381	11 A	21	x	x	x
381	11 A	22	x	x	x
381	11 A	23	x	x	x
381	11 A	24	x	x	x

			C	U	B
381	13 A	17	1	0	0
381	13 A	18	2	0	0
381	13 A	19	1	0	0
381	13 A	20	x	x	x
381	13 A	21	x	x	x
381	13 A	22	x	x	x
381	13 A	23	x	x	x
381	13 A	24	x	x	x

			C	U	B
381	14 A	17	1	0	0
381	14 A	18	1	0	0
381	14 A	19	1	0	0
381	14 A	20	x	x	x
381	14 A	21	x	x	x
381	14 A	22	x	x	x
381	14 A	23	x	x	x
381	14 A	24	x	x	x

			C	U	B
381	15 A	17	2	1	3
381	15 A	18	2	1	3
381	15 A	19	1	0	0
381	15 A	20	x	x	x
381	15 A	21	x	x	x
381	15 A	22	x	x	x
381	15 A	23	x	x	x
381	15 A	24	x	x	x



			C	U	B
381	16 A	17	2	0	0
381	16 A	18	2	0	0
381	16 A	19	1	0	0
381	16 A	20	x	x	x
381	16 A	21	x	x	x
381	16 A	22	x	x	x
381	16 A	23	x	x	x
381	16 A	24	x	x	x

A-17 2420 Hour Salt Spray – Full System

2420 Hr Salt Spray - Full

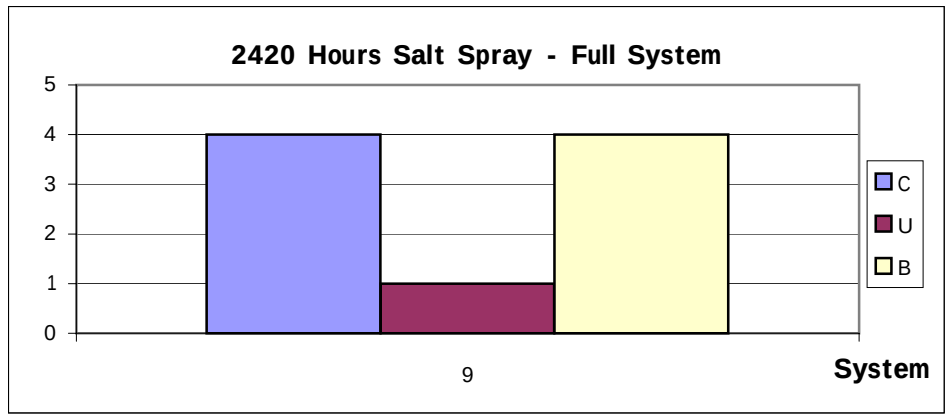
C= Corrosion 0 = None
 U=Undercutting 5= Severe
 B=Blistering

2420 Hours - Full System

			C	U	B				C	U	B				C	U	B
381	1 A	17	1	0	0	381	2 A	17	1	0	0	381	3 A	17	1	0	0
381	1 A	18	x	x	x	381	2 A	18	x	x	x	381	3 A	18	x	x	x
381	1 A	19	x	x	x	381	2 A	19	x	x	x	381	3 A	19	x	x	x
381	1 A	20	x	x	x	381	2 A	20	x	x	x	381	3 A	20	x	x	x
381	1 A	21	x	x	x	381	2 A	21	x	x	x	381	3 A	21	x	x	x
381	1 A	22	x	x	x	381	2 A	22	x	x	x	381	3 A	22	x	x	x
381	1 A	23	x	x	x	381	2 A	23	x	x	x	381	3 A	23	x	x	x
381	1 A	24	x	x	x	381	2 A	24	x	x	x	381	3 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	4 A	17	1	0	0	381	5 A	17	1	0	0	381	6 A	17	1	0	0
381	4 A	18	x	x	x	381	5 A	18	x	x	x	381	6 A	18	x	x	x
381	4 A	19	x	x	x	381	5 A	19	x	x	x	381	6 A	19	x	x	x
381	4 A	20	x	x	x	381	5 A	20	x	x	x	381	6 A	20	x	x	x
381	4 A	21	x	x	x	381	5 A	21	x	x	x	381	6 A	21	x	x	x
381	4 A	22	x	x	x	381	5 A	22	x	x	x	381	6 A	22	x	x	x
381	4 A	23	x	x	x	381	5 A	23	x	x	x	381	6 A	23	x	x	x
381	4 A	24	x	x	x	381	5 A	24	x	x	x	381	6 A	24	x	x	x
			C	U	B				C	U	B				C	U	B
381	7 A	17	1	0	0	381	8 A	17	2	0	0	381	10 A	17	1	0	0
381	7 A	18	x	x	x	381	8 A	18	x	x	x	381	10 A	18	x	x	x
381	7 A	19	x	x	x	381	8 A	19	x	x	x	381	10 A	19	x	x	x
381	7 A	20	x	x	x	381	8 A	20	x	x	x	381	10 A	20	x	x	x
381	7 A	21	x	x	x	381	8 A	21	x	x	x	381	10 A	21	x	x	x
381	7 A	22	x	x	x	381	8 A	22	x	x	x	381	10 A	22	x	x	x
381	7 A	23	x	x	x	381	8 A	23	x	x	x	381	10 A	23	x	x	x
381	7 A	24	x	x	x	381	8 A	24	x	x	x	381	10 A	24	x	x	x

2420 Hr Salt Spray - Full

			C	U	B
381	9 A	17	4	1	4
381	9 A	18	x	x	x
381	9 A	19	x	x	x
381	9 A	20	x	x	x
381	9 A	21	x	x	x
381	9 A	22	x	x	x
381	9 A	23	x	x	x
381	9 A	24	x	x	x

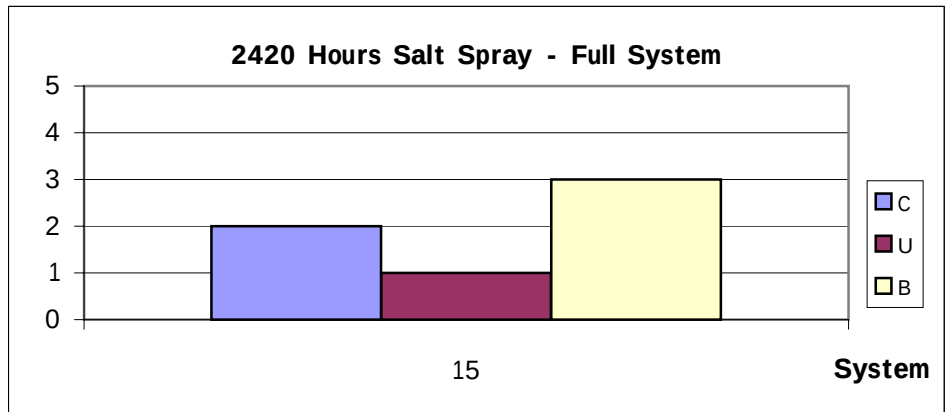


			C	U	B
381	11 A	17	2	0	0
381	11 A	18	x	x	x
381	11 A	19	x	x	x
381	11 A	20	x	x	x
381	11 A	21	x	x	x
381	11 A	22	x	x	x
381	11 A	23	x	x	x
381	11 A	24	x	x	x

			C	U	B
381	13 A	17	1	0	0
381	13 A	18	x	x	x
381	13 A	19	x	x	x
381	13 A	20	x	x	x
381	13 A	21	x	x	x
381	13 A	22	x	x	x
381	13 A	23	x	x	x
381	13 A	24	x	x	x

			C	U	B
381	14 A	17	1	0	0
381	14 A	18	x	x	x
381	14 A	19	x	x	x
381	14 A	20	x	x	x
381	14 A	21	x	x	x
381	14 A	22	x	x	x
381	14 A	23	x	x	x
381	14 A	24	x	x	x

			C	U	B
381	15 A	17	2	1	3
381	15 A	18	x	x	x
381	15 A	19	x	x	x
381	15 A	20	x	x	x
381	15 A	21	x	x	x
381	15 A	22	x	x	x
381	15 A	23	x	x	x
381	15 A	24	x	x	x



			C	U	B
381	16 A	17			
381	16 A	18	x	x	x
381	16 A	19	x	x	x
381	16 A	20	x	x	x
381	16 A	21	x	x	x
381	16 A	22	x	x	x
381	16 A	23	x	x	x
381	16 A	24	x	x	x

Not rated

A-18 Salt Spray – Full System Summary

18.0 Salt Spray - Full System Summary

C=Corrosion, U=Undercutting, B=Blister

Good = C-0, U-0, B-0

			2 Week	4 Week	6 Week	1200 Hours	10 Week	1848 Hours	2420 Hours
381	1	A	Good	C-1	C-1	C-1	C-1	C-1	C-1
381	2	A	Good	C-1	C-1	C-1	C-1	C-1	C-1
381	3	A	Good	C-1	C-1	C-1	C-1	C-2	C-1
381	4	A	Good	C-1	C-1	C-1	C-1	C-2	C-1
381	5	A	Good	C-1	C-1	C-1	C-1	C-1	C-1
381	6	A	Good	Good	Good	C-1	C-1	C-2	C-1
381	7	A	Good	C-1	C-1	C-1	C-1	C-2	C-1
381	8	A	Good	C-1	C-1	C-1	C-1	C-2	C-2
381	9	A	C-2,B-3	C-3,U-2,B-4	C-3,U-2,B-4	C-3,U-2,B-5	C-3,U-2,B-5	C-4,U-2,B-4	C-4,U-1,B-4
381	10	A	Good	C-1	C-1	C-1	C-1	C-2	C-1
381	11	A	Good	Good	C-1	C-1	C-1	C-2	C-2
381	13	A	C-1	C-1	C-1	C-2	C-2	C-2	C-1
381	14	A	C-1	C-1	C-1	C-1	C-1	C-1	C-1
381	15	A	C-1	C-2,B-2	C-2,B-2	C-3,B-3	C-3,B-3	C-2,U-1,B-3	C-2,U-1,B-3
381	16	A	Good	C-1	C-1	C-1	C-1	C-2	

Full System Summary:

Based on the results shown on the prior pages and summarized above, Systems 9 and 15 can be eliminated.

The remaining systems, based on the Salt Spray information, can be determined to be viable systems and subject to further testing. The systems showing the best performance are 1,2,5, and 14. The systems that show performance worth testing further are 1,2,3,4,5,6,7,8,10,11,13,14, and 16.

A-19 Supplemental Salt Spray – 3000+Hours

A-19.1 Corrosion

19.1 Supplemental Salt Spray - Corrosion

C= Corrosion

0 = None

U=Undercutting

5= Severe

B=Blistering

Supplemental Test

Corrosion - Wash Primer or CC Only

Panel ID				168	336	504	672	1008	1344	1680	2016	2640	3000	3000+
381	1	A	4	1	1	1	1	2	3	2	2	4	4	4
381	2	A	4	0	1	1	1	1	1	1	1	1	2	2
381	3	A	4	2	2	3	3	3	4	3	4	5	5	5
381	4	A	4	1	1	1	1	1	1	1	1	2	2	2
381	5	A	4	1	1	2	2	2	3	2	3	4	3	3
381	6	A	4	1	1	1	1	1	1	1	1	1	1	1
381	7	A	4	1	1	1	1	1	1	1	1	0	1	1
381	8	A	4	1	1	1	1	1	1	1	1	0	1	1
381	9	A	4	1	2	2	2	2	2	2	2	2	2	2
381	10	A	4	1	1	1	1	1	1	1	1	0	2	2
381	11	A	4	1	1	1	1	1	1	1	1	1	1	1
381	12	A	4	1	1	1	1	1	1	1	1	1	1	1
381	13	A	4	2	2	2	2	2	2	2	2	2	2	2
381	15	A	4	1	2	2	2	2	2	2	2	3	2	2
381	16	A	4	1	1	1	1	1	1	1	2	3	2	2

A-19.2 Undercutting

19.2 Supplemental Salt Spray -Undercutting

C= Corrosion

0 = None

U=Undercutting

5= Severe

B=Blistering

Supplemental Test

Undercutting - Wash Prime or CC Only

Panel ID				168	336	504	672	1008	1344	1680	2016	2640	3000	3000+
381	1	A	4	0	0	0	0	1	1	1	1	0	1	1
381	2	A	4	0	0	0	0	0	0	0	0	0	1	1
381	3	A	4	0	0	0	1	2	2	2	2	0	0	0
381	4	A	4	0	0	0	0	0	0	0	0	0	1	1
381	5	A	4	0	0	0	0	1	1	1	1	0	1	1
381	6	A	4	0	0	0	0	0	0	0	0	0	0	0
381	7	A	4	0	0	0	0	0	0	0	0	0	0	0
381	8	A	4	0	0	0	0	0	0	0	0	0	0	0
381	9	A	4	0	0	1	1	1	1	1	1	2	1	1
381	10	A	4	0	0	0	0	0	0	0	0	0	0	0
381	11	A	4	0	0	0	0	0	0	0	0	0	0	0
381	12	A	4	0	0	0	0	0	0	0	0	0	0	0
381	13	A	4	0	0	0	0	0	0	0	0	2	0	0
381	15	A	4	0	0	1	1	1	1	1	1	2	1	1
381	16	A	4	0	0	0	0	1	1	1	1	0	1	1

A-19.3 Blistering

19.3 Supplemental Salt Spray - Blistering

C= Corrosion

0 = None

U=Undercutting

5= Severe

B=Blistering

Supplemental Test

Blistering - Wash Prime or CC Only

Panel ID				168	336	504	672	1008	1344	1680	2016	2640	3000	3000+
381	1	A	4	0	0	0	0	0	0	0	0	0	0	3
381	2	A	4	0	0	0	0	0	0	0	0	0	0	0
381	3	A	4	0	0	0	0	0	0	0	0	0	0	0
381	4	A	4	0	0	0	0	0	0	0	0	1	0	0
381	5	A	4	0	0	0	0	0	0	0	0	0	0	0
381	6	A	4	0	0	0	0	0	0	0	0	0	0	0
381	7	A	4	0	0	0	0	0	0	0	0	0	0	0
381	8	A	4	0	0	0	0	0	0	0	0	0	0	0
381	9	A	4	0	2	2	2	2	3	2	3	4	4	4
381	10	A	4	0	0	0	0	0	0	0	0	0	0	0
381	11	A	4	0	0	0	0	0	0	0	0	0	0	0
381	12	A	4	0	0	0	0	0	0	0	0	0	0	0
381	13	A	4	0	1	2	2	2	2	2	2	3	3	3
381	15	A	4	0	2	2	2	2	2	2	2	2	2	2
381	16	A	4	0	1	1	1	1	1	1	1	1	1	1

A-20 Pencil Hardness and Cross Hatch Adhesion

Pencil Hardness-Crosshatch

Pre test on Impact Panels and Post Test on Fluid Immersion Panels

Initial ratings done on 26July2001.

Post Reading for panel #6 done on 31July2001.

Soft	Hard
Pencil Hardness - 6B,5B,4B,3B,2B,HB,F,H,2H,3H,4H,5H,6H,7H,8H,9H	

△ - Specification is not more than 2 units softer than the original reading.

Cross Hatch Adhesion - 5=100% Adhesion	0=Complete Failure
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07/26/01								07/31/01								Supplemental Test Plan								07/26/01				08/29/01				08/29/01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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381	1	A	5/6	8H+	/	8H+	5	381	1	A	30/29	2H	/	HB	-3	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

A-21 Impact Flexibility Data

GE Impact on 2024 T-3

Performed on 27July2001

Impact Flexibility Data

Durometer sample should read 74.6 +/- 1.0. Actual reading 73.2

Durometer reading of rubber pad = 60.4.

Drop heights were determined using .032 2024-T3 Bare.

"A" Side of the impact anvil dropped at 43.5 inches (the highest point) and will not leave an impression.

The "B" Side of the impact anvil was determined to be 30 inches.

				B4	B3	B2	B1	A4	A3	A2	A1
Wash Prime or CC				0.50%	1%	2%	5%	10%	20%	40%	60%
381	1	A	5								P
381	2	A	5					P	P	F	F
381	3	A	5							P	AI crack
381	4	A	5								P
381	5	A	5							P	AI crack
381	6	A	5				P	P	F	F	F
381	7	A	5				P	P	F	F	F
381	8	A	5		p	F	F	F	F	F	F
381	9	A	5		p	p	F	F	F	F	F
381	10	A	5			p	F	F			
381	11	A	5			p	F	F			
381	12	A	5							P	F
381	13	A	5		? Fails Elcometer 204					P	P?
381	14	A	5								
381	15	A	5					P	F		
381	16	A	5					P	F		

Performed on 30July2001 22C and 54%RH

				B4	B3	B2	B1	A4	A3	A2	A1
Full System				0.50%	1%	2%	5%	10%	20%	40%	60%
381	1	C	1					P	F		
381	2	C	1					P	F		
381	3	C	1					P	F		
381	4	C	1					P	F		
381	5	C	1					P	F		
381	6	C	1				P	F			
381	7	C	1				P	F			
381	8	C	1					P	F		
381	9	C	1					P	F		
381	10	C	1					P	F		
381	11	C	1					P	F		
381	13	C	1					P	F		
381	14	C	1					P	F		
381	15	C	1				P	F			

				B4	B3	B2	B1	A4	A3	A2	A1
Full System				0.50%	1%	2%	5%	10%	20%	40%	60%
381	1	A	30						P	F	
381	2	A	30						P	F	
381	3	A	30						P	F	
381	4	A	30					P	F	F	
381	5	A	30						P	F	
381	6	A	30					P	F		
381	7	A	30			P	F	F	F		
381	8	A	30						P	F	
381	9	A	30						P	F	
381	10	A	30						P	F	
381	11	A	30					P	F		
381	13	A	30						P	F	
381	14	A	30						P	F	
381	15	A	30						P	F	
381	16	A	30						P	F	

A-22 Impact Flexibility Summary

Impact Flexibility Summary

Durometer Summary

Wash Prime or CC				Rating
381	1	A	5	60%
381	2	A	5	20%
381	3	A	5	40%
381	4	A	5	60%
381	5	A	5	40%
381	6	A	5	10%
381	7	A	5	10%
381	8	A	5	1%
381	9	A	5	2%
381	10	A	5	2%
381	11	A	5	2%
381	12	A	5	40%
381	13	A	5	40%
381	14	A	5	
381	15	A	5	10%
381	16	A	5	10%

Full System				Rating
381	1	A	30	20%
381	2	A	30	20%
381	3	A	30	20%
381	4	A	30	10%
381	5	A	30	20%
381	6	A	30	10%
381	7	A	30	2%
381	8	A	30	20%
381	9	A	30	20%
381	10	A	30	20%
381	11	A	30	10%
381	13	A	30	20%
381	14	A	30	20%
381	15	A	30	20%
381	16	A	30	20%

Full System				Rating
381	1	C	1	10%
381	2	C	1	10%
381	3	C	1	10%
381	4	C	1	10%
381	5	C	1	10%
381	6	C	1	5%
381	7	C	1	5%
381	8	C	1	5%
381	9	C	1	10%
381	10	C	1	10%
381	11	C	1	10%
381	13	C	1	10%
381	14	C	1	10%
381	15	C	1	5%

Durometer Summary - Supplemental

Wash Prime or CC				Rating
381	1	A	5	60%
381	2	A	5	20%
381	3	A	5	40%
381	4	A	5	60%
381	5	A	5	40%
381	6	A	5	10%
381	7	A	5	10%
381	8	A	5	1%
381	9	A	5	2%
381	10	A	5	2%
381	11	A	5	2%
381	12	A	5	40%
381	13	A	5	40%
381	14	A	5	
381	15	A	5	10%
381	16	A	5	10%

Full System				Rating
381	1	A	30	20%
381	2	A	30	20%
381	3	A	30	20%
381	4	A	30	10%
381	5	A	30	20%
381	6	A	30	10%
381	7	A	30	2%
381	8	A	30	20%
381	9	A	30	20%
381	10	A	30	20%
381	11	A	30	10%
381	13	A	30	20%
381	14	A	30	20%
381	15	A	30	20%
381	16	A	30	20%

Full System				Rating
381	1	C	30	10%
381	2	C	30	10%
381	3	C	30	10%
381	4	C	30	10%
381	5	C	30	10%
381	6	C	30	5%
381	7	C	30	10%
381	8	C	30	10%
381	9	C	30	10%
381	10	C	30	10%
381	11	C	30	10%
381	13	C	30	10%
381	14	C	30	10%
381	15	C	30	10%
381	16	C	30	5%

A-23 Wet Tape Adhesion

Wet Tape Adhesion

Wet Tape Adhesion Testing - Full System - Supplemental

			Rating	Comments
1	A	32	5A	Scribing caused coating to be jagged
2	A	32	5A	
3	A	32	5A	
4	A	32	5A	
5	A	32	5A	Scribing caused coating to be jagged
6	A	32	5A	Scribing caused coating to be jagged
7	A	32	5A	
8	A	32	5A	
9	A	32	5A	Scribing caused coating to be jagged
10	A	32	5A	
11	A	32	5A	Scribing caused coating to be jagged
13	A	32	1A	Pre and Post test photos
14	A	32	1A	Pre and Post test photos
15	A	32	5A	
16	A	32	5A	

A-24 Final Analysis

A-24.1 Data Analysis

SYSTEM #	DESCRIPTION	PRECLEANING	CLEAN/WASH	ACID DEOXIDIZE	CONVERSION COAT	WASH PRIMER	PRIMER	TOPCOAT
1	Control	Solvent wipe with MEK	Burulin alkaline cleaner, Scotchbrite	CTIO standard	Alodine 1200S	None	MIL-PRF-23377G	MIL-PRF-85285
2	Std wash primer	Solvent wipe with MEK	Burulin alkaline cleaner, Scotchbrite	None	None	S-W MIL-C-8514	MIL-PRF-23377G	MIL-PRF-85285
3	No rinse ccc control	Solvent wipe with MEK	Burulin alkaline cleaner, Scotchbrite	None	Alodine 1201	None	MIL-PRF-23377G	MIL-PRF-85285
4	85582 as a wash primer	Solvent wipe with MEK	Burulin alkaline cleaner, Scotchbrite	CTIO standard	None	MIL-PRF-85582 as a wash primer	MIL-PRF-85582G	MIL-PRF-85285
5	Waterborne Control	Solvent wipe with MEK	Burulin alkaline cleaner, Scotchbrite	CTIO standard	Alodine 1200S	None	MIL-PRF-85582G	MIL-PRF-85285
6	PRC DeSoto System	Solvent wipe with MEK, Scotchbrite	none	None	None	P99	PAC 33	MIL-PRF-85285
7	PRC DeSoto System chrome free	Solvent wipe with MEK, Scotchbrite	None	None	None	P99	PAC 33 CF	MIL-PRF-85285
8	U.S. Paint	solvent wipe with MEK, Scotchbrite	None	None	None	R4002/3203	None	MIL-PRF-85285
9	U.S. Paint chrome free	Solvent wipe with MEK, Scotchbrite	None	None	None	R1203/3203	None	MIL-PRF-85285
10	U.S. Paint	Solvent wipe with MEK	Burulin alkaline cleaner, Scotchbrite	None	None	R4002/3203	None	MIL-PRF-85285
11	U.S. Paint/VPPI	Solvent wipe with MEK	VPPI 1310, Scotchbrite	None	None	R4002/3203	None	MIL-PRF-85285
12	Dexter 40-P1-6	Solvent wipe with MEK, Scotchbrite	None	None	None	Dexter 40-P1-6	Dexter 20-P-123	MIL-PRF-85285
13	Vapor Phase primer	Solvent wipe with MEK	VPPI 1310, Scotchbrite	None	None	Vapor Phase 1018	MIL-PRF-23377G	MIL-PRF-85285
14	Cortec Primer	Solvent wipe with MEK	Burulin alkaline cleaner, Scotchbrite	None	None	Cortec VCI 373	MIL-PRF-23377G	MIL-PRF-85285
15	Lord System A	Solvent wipe with MEK, Scotchbrite	None	None	None	Lord 9947	MIL-PRF-23377G	MIL-PRF-85285
16	Lord System B Chromated	Solvent wipe with MEK, Scotchbrite	None	None	None	Lord 9924	MIL-PRF-23377G	MIL-PRF-85285

Self Etch Primer Systems evaluated under Phase I testing.

DATA SUMMARY AND RECOMMENDATION

		6 Week	1848 Hour	1848 Hour	Supplemental	Supplemental	Supplemental				
		Filiform - Full System	Salt Spray Primer	Salt Spray Full System	<i>Salt Spray 3500+ Hours</i>	Pencil Hardness	Cross Hatch Adhesion Full System	GE Impact Full System	Wet Tape Adhesion	Average	Recommendation
1	Control	3	1	1	<i>Fail</i>	10	15	1	1	4.6	Phase II
2	Standard Wash Primer	10	2	1	<i>Pass</i>	10	1	1	1	3.7	Phase II
3	No rinse CCC Control	2	2	5	<i>Fail</i>	1	13	1	1	3.6	Phase II
4	85582 as a wash primer	4	2	5	<i>Pass</i>	2	3	1	1	2.6	Phase II
5	Waterborne Control	1	2	1	<i>Fail</i>	2	1	1	1	1.3	Phase II
6	PRC DeSoto	7	2	5	<i>Pass</i>	8	3	1	1	3.9	Phase II
7	PRC DeSoto - Chrome Free	11	10	5	<i>Pass</i>	13	3	1	1	6.3	Eliminate
8	US Paint	8	X	5	<i>Pass</i>	2	3	1	1	3.3	Phase II
9	US Paint - Chrome Free	12	X	15	<i>Fail</i>	13	13	10	13	12.7	Eliminate
10	US Paint	4	X	5	<i>Pass</i>	2	3	10	1	4.2	Phase II
11	US Paint / VPPI	8	X	5	<i>Pass</i>	8	3	10	1	5.8	Eliminate
12	Dexter 40-P1-6	X	X	X	<i>Pass</i>	X	X	X	X		X
13	Vapor Phase primer	12	8	5	<i>Fail</i>	2	3	10	13	7.6	Eliminate
14	Cortec Primer	13	9	1	X	15	3	10	13	9.1	Eliminate
15	Lord System A	14	11	14	<i>Fail</i>	2	3	1	1	6.6	Eliminate
16	Lord System B	4	2	5	<i>Fail</i>	10	3	X	1	4.2	Phase II

		6 Week	1848 Hour	1848 Hour	Supplemental	Supplemental	Supplemental				
		Filiform - Full System	Spray Primer	Salt Spray Full System	<i>Salt Spray 3500+ Hours</i>	Pencil Hardness	Adhesion Full System	GE Impact Full System	Wet Tape Adhesion	Average	Recommendation
5	Waterborne Control	1	2	1	<i>Fail</i>	2	1	1	1	1.3	Phase II
4	85582 as a wash primer	4	2	5	<i>Pass</i>	2	3	1	1	2.6	Phase II
8	US Paint	8	X	5	<i>Pass</i>	2	3	1	1	3.3	Phase II
3	No rinse CCC Control	2	2	5	<i>Fail</i>	1	13	1	1	3.6	Phase II
2	Standard Wash Primer	10	2	1	<i>Pass</i>	10	1	1	1	3.7	Phase II
6	PRC DeSoto	7	2	5	<i>Pass</i>	8	3	1	1	3.9	Phase II
10	US Paint	4	X	5	<i>Pass</i>	2	3	10	1	4.2	Phase II
16	Lord System B	4	2	5	<i>Fail</i>	10	3	X	1	4.2	Phase II
1	Control	3	1	1	<i>Fail</i>	10	15	1	1	4.6	Phase II
11	US Paint / VPPI	8	X	5	<i>Pass</i>	8	3	10	1	5.8	Eliminate
7	PRC DeSoto Chrome Free	11	10	5	<i>Pass</i>	13	3	1	1	6.3	Eliminate
15	Lord System A	14	11	14	<i>Fail</i>	2	3	1	1	6.6	Eliminate
13	Vapor Phase primer	12	8	5	<i>Fail</i>	2	3	10	13	7.6	Eliminate
14	Cortec Primer	13	9	1	X	15	3	10	13	9.1	Eliminate
9	US Paint - Chrome Free	12	X	15	<i>Fail</i>	13	13	10	13	12.7	Eliminate
12	Dexter 40-P1-6	X	X	X	<i>Pass</i>	X	X	X	X		X

A-24.2 Visual Analysis

DATA SUMMARY AND RECOMMENDATION

		6 Week	1848 Hour	1848 Hour	Supplemental	Supplemental	Supplemental				
		Filiform Full System	Salt Spray Primer	Salt Spray Full System	Salt Spray 3500+ Hours	Pencil Hardness	Cross Hatch Adhesion Full System	GE Impact Full System	Wet Tape Adhesion	Average Rating	
5	Waterborne Control	1	2	1	<i>Fail</i>	2	1	1	1	1.3	Phase II
4	85582 as a wash primer	4	2	5	<i>Pass</i>	2	3	1	1	2.6	Phase II
8	US Paint	8	X	5	<i>Pass</i>	2	3	1	1	3.3	Phase II
3	No rinse CCC Control	2	2	5	<i>Fail</i>	1	13	1	1	3.6	Phase II
2	Standard Wash Primer	10	2	1	<i>Pass</i>	10	1	1	1	3.7	Phase II
6	PRC DeSoto	7	2	5	<i>Pass</i>	8	3	1	1	3.9	Phase II
10	US Paint	4	X	5	<i>Pass</i>	2	3	10	1	4.2	Phase II
16	Lord System B	4	2	5	<i>Fail</i>	10	3	X	1	4.2	Phase II
1	Control	3	1	1	<i>Fail</i>	10	15	1	1	4.6	Phase II
11	US Paint / VPPI	8	X	5	<i>Pass</i>	8	3	10	1	5.8	Eliminate
7	PRC DeSoto Chrome Free	11	10	5	<i>Pass</i>	13	3	1	1	6.3	Eliminate
15	Lord System A	14	11	14	<i>Fail</i>	2	3	1	1	6.6	Eliminate
13	Vapor Phase primer	12	8	5	<i>Fail</i>	2	3	10	13	7.6	Eliminate
14	Cortec Primer	13	9	1	<i>X</i>	15	3	10	13	9.1	Eliminate
9	US Paint - Chrome Free	12	X	15	<i>Fail</i>	13	13	10	13	12.7	Eliminate
12	Dexter 40-P1-6	X	X	X	<i>Pass</i>	X	X	X	X		X

A cutoff point of 5 was used because there appears to be a natural gap in average rankings. An increase of 1.2 from the Control (4.6 Avg.) to the US Paint/VPPI (5.8 Avg.) appears to be a good place for the cut-off. This cut-off point is arbitrary and can be changed.