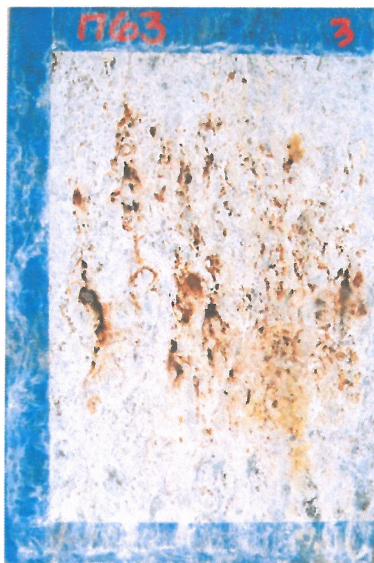


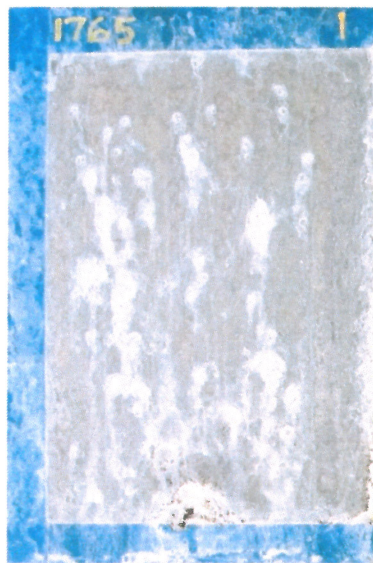
Salt Spray (ASTM B117) Comparison of Bare HDG G30 vs. Coated HDG G30

**Bare/Non-Chemtreated
HDG G30 (.24oz/ft²)**



120 Hours

**HDG G30 (.24oz/ft²) Coated with
InterCoat™ ChemGuard 315 (135mg/ft²)**



840 Hours



1248 Hours

FINAL APPROVED
ACCELERATED TESTING REPORT



Report Printed: August 28, 2013

Submission ID: AT2013-01763

Chemcoaters

700 Chase Street

Gary, IN 46404

Project/Submission Number: 13-0007590 / AT2013-01763

Industry: AT Other

Customer Line Number: 667769-001

Line Description: 1

Submitted by: Wayne Wilczewski

Date Received: 08/22/2013

Articles for Test: 3 Panels (controls), Chemcoaters, Gary, IN. SS

Approved by: Michelle Audette
Accelerated Testing Team Leader

Accounting Information:
Purchase Order Number:
No Charge
Invoice Number:

Invoice Amount:
\$ 250

LINE PARAMETERS

Cleaner Stage
Name

Value
None

FINAL APPROVED
ACCELERATED TESTING REPORT

Chemcoaters



Report Printed: August 28, 2013

Submission ID: AT2013-01763

PAINT SYSTEM

<u>Topcoat Type</u>	<u>Topcoat</u>	<u>Primer / Surfacer</u>	<u>Primer Supplier</u>	<u>Primer Code</u>
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MISCELLANEOUS

Return Yes Attn: Wayne Wilczewski

Remarks: Prod. date 7/22/13. Return to Wayne. Per request, test 1 panel each for 72hrs, 96hrs and 120hrs. Panels were received with 3 edges taped and a scribe. HDG; Bare 630 controls - Wave - .24 oz/ft². 3 Panels (controls), Chemcoaters, Gary, IN. SS
Due to extensive loss of adhesion/corrosion evident upon test completion, results have been reported as a percent peel or percent corrosion, denoted with %P or %CORR. This evaluation technique combines the degradation as a result of creepage, blisters, and rust.

Opinions and Interpretations:

None

FINAL APPROVED
ACCELERATED TESTING REPORT

Chemcoaters



Report Printed: August 28, 2013

Submission ID: AT2013-01763

SALT SPRAY (WI MH-AT Cont Exp A-01: Referencing ASTM B117)

		ASTM	Blister	Hours	Max. Creep	Mean Creep	Min. Creep	Rust	Test In Date	Test Out Date
					mm	mm	mm			
AT2013-01763-001	1	-	-	72	-	-	100% COF	-	8/23/13 0:0	8/26/13 0:0
AT2013-01763-002	1E	-	-	72	-	-	-	-	8/23/13 0:0	8/26/13 0:0
AT2013-01763-003	2	-	-	96	-	-	100% COF	-	8/23/13 0:0	8/27/13 0:0
AT2013-01763-004	2E	-	-	96	-	-	-	-	8/23/13 0:0	8/27/13 0:0
AT2013-01763-005	3	-	-	120	-	-	100% COF	-	8/23/13 0:0	8/28/13 0:0
AT2013-01763-006	3E	-	-	120	-	-	-	-	8/23/13 0:0	8/28/13 0:0

FINAL APPROVED
ACCELERATED TESTING REPORT



Report Printed: August 28, 2013

Chemcoaters

Submission ID: AT2013-01763

Sample Summary			
Sample Number	Production Date	Coil	Substrate
AT2013-01763-001	07/22/2013	Bare G30 control	HDG G30
AT2013-01763-002	07/22/2013	Bare G30 control	HDG G30
AT2013-01763-003	07/22/2013	Bare G30 control	HDG G30
AT2013-01763-004	07/22/2013	Bare G30 control	HDG G30
AT2013-01763-005	07/22/2013	Bare G30 control	HDG G30
AT2013-01763-006	07/22/2013	Bare G30 control	HDG G30

**Accelerated Testing Laboratory General Information &
Terms and Conditions**

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The Henkel Accelerated Testing Laboratory in Madison Heights, MI, is housed within corporate headquarters, remote from manufacturing. The lab provides support to manufacturing and product development. The Madison Heights location maintains a current ISO 9001 certificate, which complies with ISO/TS 16949 and its guidance rules.

Henkel Test Methods may vary from the standard specifications listed below in order to accommodate our laboratory conditions. Customers must assess their needs and determine if Henkel methods meet their requirements. For a detailed description of Henkel methods, interpretations, and deviations from standard referenced specifications, see our internal Work Instructions. Our internal work instructions are designed only for use at Henkel laboratories by Henkel personnel. Henkel takes no responsibility for the use of these methods at non-Henkel facilities or for use by non-Henkel personnel. Henkel makes no warranty or representation about the suitability of any product, process, service or test method. We urge and recommend that any recipient conduct its own evaluation to determine to its own satisfaction whether any product, process, service or test method is of acceptable quality and is suitable for its particular purposes under its own operating conditions.

The Henkel Methods are intended for flat panels. If possible we will attempt to accommodate irregular shaped parts for test; however we cannot guarantee angles of part orientation, timing of precise operations, scribe sizes/orientations, or any other aspects of test that may be affected by irregular size. All parts must be free of oils, filling solutions, adhesives, contaminants, or any components that could become dislodged or dissolved in environmental testing.

Samples received for analyses or processing will be discarded, or returned if requested in writing, upon completion of services or analyses rendered, unless otherwise specified.

All samples are assumed to be received adequately and appropriately coated, cured, and cleaned/washed per the material requirements. No attempts will be made by the laboratory to clean samples prior to environmental exposures or physical testing.

FINAL APPROVED
ACCELERATED TESTING REPORT



Report Printed: August 28, 2013

Submission ID: AT2013-01763

Chemcoaters

The customer must define the test surface, as necessary. The customer must also identify and negotiate, prior to testing, any unusual needs for orientation or handling and provide the appropriate number and size of samples and controls.

This laboratory will not use film thickness to determine appropriate test methods, including scribe techniques or test durations. The customer must determine appropriate exposure/scribe/evaluation methods that suit their needs. Unless otherwise specified, the lab will default to using a Type E style, carbide tip lathe tool or a knife/razor blade, as appropriate for scribing. Based on an internal laboratory study, the average scribe depth obtained is 54 microns and consistently penetrates all coatings, including organic and plated metals, through to bare substrate.

The customer must define duration of exposure and rating frequency. Henkel can only accommodate exposure durations which are multiples of 24 hours and reserves the right to adjust requests to the nearest multiple of 24 hours.

Henkel can only report extraneous information describing parts to the extent to which the customer provides this information. This laboratory assumes that the customer will retain information regarding part description for their records, such as part numbers, production dates, process parameters, coating descriptions, cure times, shear description, etc. This laboratory makes no warranty as to the accuracy of this information provided by the customer and lab personnel will not attempt to validate this information.

This laboratory uses Non-Iodized Food Grade Salt (Culinox 999 or equivalent) for all NaCl solution needs. We find that this grade of salt meets or exceeds the purity requirements of all methods within this Laboratory Scope, and fulfills the intent of requirements for Reagent Grade NaCl. Certificates of Analysis are available upon request. Samples whose test methods require soaking in a salt solution are soaked in an ambient salt solution, unless otherwise requested. Ambient conditions range from 20-30°C. No attempt is made to remove excess salt solution from sample edges. Therefore, any corrosion forming within 1/4 inch around the edges of the sample is disregarded when rating, unless otherwise requested.

The laboratory ambient temperature conditions are maintained in the range of approximately 20-30°C. Laboratory ambient humidity conditions cannot be completely controlled, therefore seasonal changes are observed. Through most of the year humidity is held within 30-70 % RH. However, in extreme summer conditions, levels can rise to >70% RH and in winter, can decrease to < 30 % RH. Some tests require specific ambient conditions, which therefore cannot be guaranteed. The customer must determine if Henkel Laboratory conditions are adequate for their needs.

The Henkel Accelerated Testing Laboratory conducts environmental exposure testing, corrosion evaluations, physical tests, equipment standardizations & verifications as appropriate using NIST traceable standards whenever possible.

Equipment calibrations are conducted by inside qualified/competent staff as possible and by outside qualified commercial/independent laboratories when needed.

Personnel conducting tests or making professional judgments with reference to testing, calibration, and control of testing, are competent and have appropriate background combined with experience, which is documented in the individuals training files.

The laboratory customers include both internal (R&D, Manufacturing, Technical Service) and external (manufacturers who purchase and use Henkel products).

Test parameters, such as test temperatures, pH, collection rates, water/solution replacement and quality, equipment information, calibration data, etc., are available on request but will not be included with every report.

In all matters, refer to Henkel's terms and Conditions of Sale.

FINAL APPROVED
ACCELERATED TESTING REPORT



Report Printed: August 28, 2013

Submission ID: AT2013-01763

Chemcoaters

The Accelerated Testing Lab participates in the following Henkel Key processes: Management, Planning, Staffing & Development, New Product Introduction & Trial, CCR, Manufacturing, and Lab Services.

Terms and Conditions Revised 10-17-07

FINAL APPROVED
ACCELERATED TESTING REPORT



Report Printed: October 17, 2013

Submission ID: AT2013-01765

Chemcoaters

700 Chase Street

Gary, IN 46404

Project/Submission Number: 13-0007592 / AT2013-01765

Industry: AT Other

Customer Line Number: 667769-001

Line Description: 1

Submitted by: Wayne Wilczewski

Date Received: 08/22/2013

Articles for Test: 3 Panels (Wave Trial), Chemcoaters, Gary, IN. SS

Approved by: Michelle Audette
Accelerated Testing Team Leader

Accounting Information:
Purchase Order Number:
No Charge
Invoice Number:

Invoice Amount:
\$ 1644

LINE PARAMETERS

Cleaner Stage
Name

Value
None

FINAL APPROVED
ACCELERATED TESTING REPORT

Chemcoaters



Report Printed: October 17, 2013

Submission ID: AT2013-01765

PAINT SYSTEM

<u>Topcoat Type</u>	<u>Topcoat</u>	<u>Primer / Surfacer</u>	<u>Primer Supplier</u>	<u>Primer Code</u>
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MISCELLANEOUS

Return Yes Attn: Wayne Wilczewski

Remarks: Prod. date 7/23/13. Return to Wayne. Per request, test 1 panel to the first sign of Red Rust. Test 2 panels to 10-20% Red Rust. Panels were received with 3 edges taped and a scribe. HDG; 315D-7/18 Wave Trial-Head Top-Cr=2.9. 3 Panels (Wave Trial), Chemcoaters, Gary, IN. SS

Opinions and Interpretations:

None

FINAL APPROVED
ACCELERATED TESTING REPORT

Chemcoaters



Report Printed: October 17, 2013

Submission ID: AT2013-01765

SALT SPRAY (WI MH-AT Cont Exp A-01: Referencing ASTM B117)

		ASTM	Blister	Hours	Max. Creep	Mean Creep	Min. Creep	Rust	Test In Date	Test Out Date
					mm	mm	mm			
AT2013-01765-001	1	-	-	840	-	-	-	1% RR.	8/26/13 0:0	9/30/13 0:0
AT2013-01765-002	1E	-	-	840	-	-	-	1% RR.	8/26/13 0:0	9/30/13 0:0
AT2013-01765-003	2	-	-	1248	-	-	-	10% RR	8/26/13 0:0	10/17/13 0:
AT2013-01765-004	2E	-	-	1248	-	-	-	10% RR	8/26/13 0:0	10/17/13 0:
AT2013-01765-005	3	-	-	1200	-	-	-	15% RR	8/26/13 0:0	10/15/13 0:
AT2013-01765-006	3E	-	-	1200	-	-	-	15% RR	8/26/13 0:0	10/15/13 0:

FINAL APPROVED
ACCELERATED TESTING REPORT

Chemcoaters



Report Printed: October 17, 2013

Submission ID: AT2013-01765

Sample Summary			
Sample Number	Production Date	Coil	Substrate
AT2013-01765-001	07/23/2013	Wave Trial	HDG G30
AT2013-01765-002	07/23/2013	Wave Trial	HDG G30
AT2013-01765-003	07/23/2013	Wave Trial	HDG G30
AT2013-01765-004	07/23/2013	Wave Trial	HDG G30
AT2013-01765-005	07/23/2013	Wave Trial	HDG G30
AT2013-01765-006	07/23/2013	Wave Trial	HDG G30

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FINAL APPROVED
ACCELERATED TESTING REPORT



Report Printed: October 17, 2013

Submission ID: AT2013-01765

Chemcoaters

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Report Printed: October 17, 2013

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Chemcoaters

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Terms and Conditions Revised 10-17-07