

Certificate of Conformance
SIFCO Process Solution

The solution identified below has been tested under controlled conditions and found to meet SIFCO Applied Surface Concepts specifications and Quality Assurance standards. This product does not contain, nor has it been contaminated with metallic mercury or mercury compounds. SIFCO ASC, LLC is a mercury free facility. This product is free from all foreign materials that could result in foreign object damage to the equipment or process.

Capability of Meeting Specifications

When properly selected and applied, this solution will meet LGPS1102. This solution meets the requirements for: MIL-STD-865E, AMS2451/4E, ASTM B117-19, ASTM F519-18, BAC5854M, DPS9.89P & PS 13113F.

Product Code	5070
Product Description	Cadmium LHE®
Batch Number	2208099
Test Requirement	Actual Value
Specimen Type	1a1 Notch Bars per ASTM F519 Lot # 45H Sensitivity Pass Date: 07/06/2022 Notched Specimens per BAC5144 Lot # 164439-1-1-P Sensitivity Pass Date: 11/01/2021 2a rings per ASTM F519 Lot # 93117 Sensitivity Pass Date: 01/06/2022
pH	7.72 pH
Specific Gravity	1.250 Specific Gravity
Metal Content	100.50 Metal Content
Hydrogen Embrittlement	CONFORMS
200 Hour Fracture Test	Pass AMS2451/4, MIL-STD-865, PS13113 and BAC5854 Report Number 22-75454
168 Hour Fracture Test	Pass DPS 9.89
250 Hour Corrosion Test	AMS 2451/4 and ASTM B117 / Lab Report #2210-05-0210
Solution Appearance	Yellow
Solution Manufacturing Date	September 6, 2022
HE Certification Pass Date	September 17, 2022
Recommended Shelf Life	MIL-STD-865 and AMS2451/4: September 6, 2026 BAC 5854, DPS 9.89 and PS 13113 Retest Before: Sept. 17, 2023



Quality Technician

10/24/2022

Date



"Specialists in Embrittlement Testing"

Date: September 19 2022
To: SIFCO OH
5708 Schaaf Road
INDEPENDENCE, OH 44131
Test Report: 22-75454
Reference P.O.: PO00009013
S/N 0187P, 0188P
Test: NOTCH TENSILE HYDROGEN EMBRITTLEMENT
Sample Identification: SAMPLES A, B:
Job / SN: SOLUTION CODE 5070 BATCH 2208099
Process: BRUSH CADMIUM PLATE 1A2
PO Specification: BAC 5854M, BAC 5144
Test Method Scope: ASTM F519-18
Receive Date: Sep 08, 2022
Test Start Date: Sep 08, 2022
Test End Date: Sep 17, 2022
Sample Lot: P **Mfg.:** ONAMAC
Notched Ultimate Tensile Load: 15860 **Units:** LBS
Test Load: 11895 **Units:** LBS
Results: Conforms

The above identified notched tensile samples were subjected to a 200-hour sustained load test at a load of 75% of the Notch Ultimate Tensile Load (NUTL). Results above are applicable to submitted purchase order specifications. Additionally, results apply to the samples as received. Variances as applicable are noted at bottom right of report:

Report Revision:

Revision Description:

1 - Original

One sample was metallographically cross-sectioned longitudinally across the notch and evaluated at 80-100X magnification for complete plating coverage of the notch. Conforms. Photo attached Samples Loaded on individual frames.



Testing performed under direct supervision of approved signatories per QM-001 ISO 17025 Quality Manual PARA 7.8.

Jeremy Riley **Joshua Cox** **Clint Williams**
Ops Mgr **Quality Mgr** **Engr Tech**

APPROVED
SMA 9/20/2022

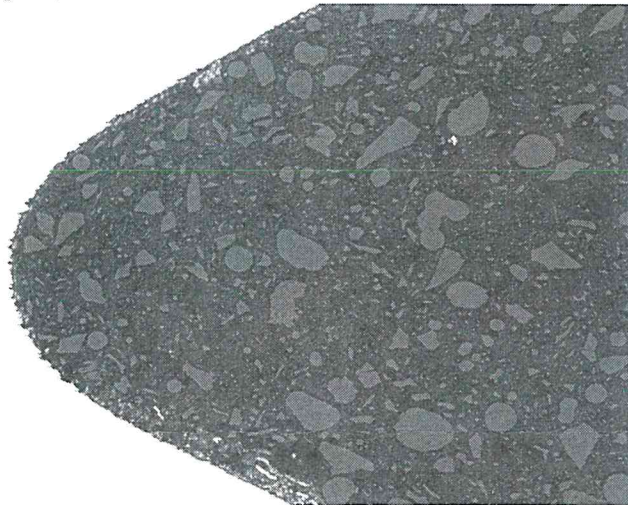
Decision Rule: Per previously communicated and agreed, data has been supplied/reported as observed without accounting for measurement uncertainty.

Report invalid unless color seal present. Page 1 of 1



"Specialists in Embrittlement Testing"

Date: September 19 2022
To: **SIFCO OH**
5708 Schaaf Road
INDEPENDENCE, OH 44131
Test Report: 22-75454
Reference P.O.: PO00009013
S/N 0188P
Test: **PHOTOMICROGRAPH**
Sample Identification: SAMPLE A:
Job / SN: SOLUTION CODE 5070 BATCH 2208099
Process: BRUSH CADMIUM PLATE 1A2
PO Specification: BAC 5854M, BAC 5144
Test Method Scope: ASTM E3-11(2017)
Receive Date: Sep 08, 2022



Report Revision:

1

Revision Description:

1 - Original

Testing performed under direct supervision of approved signatories per QM-001 ISO 17025 Quality Manual PARA 7.8.

Jeremy Riley **Joshua Cox** **Clint Williams**
Ops Mgr. **Quality Mgr** **Engr Tech**

Decision Rule: Per previously communicated and agreed, data has been supplied/reported as observed without accounting for measurement uncertainty.

Report invalid unless color seal present. Page 1 of 1

"Specialists in Embrittlement Testing"

Date: September 19 2022
To: SIFCO OH
5708 Schaaf Road
INDEPENDENCE, OH 44131
Test Report: 22-75454
Reference P.O.: PO00009013
S/N 1, 2, 3, 4
Test: NOTCH TENSILE HYDROGEN EMBRITTLEMENT
Sample Identification: SAMPLES A, B, C, D:
Job / SN: SOLUTION CODE 5070 BATCH 2208099
Process: BRUSH CADMIUM PLATE
PO Specification: MIL-STD-865E, AMS 2451/4E, PS13113F
Test Method Scope: ASTM F519-18
Receive Date: Sep 08, 2022
Test Start Date: Sep 08, 2022
Test End Date: Sep 17, 2022
Sample Lot: 45H **Mfg.:** GREEN
Notched Ultimate Tensile Load: 9256 **Units:** LBS
Test Load: 6942 **Units:** LBS
Results: Conforms

The above identified notched tensile samples were subjected to a 200-hour sustained load test at a load of 75% of the Notch Ultimate Tensile Load (NUTL). Results above are applicable to submitted purchase order specifications. Additionally, results apply to the samples as received. Variances as applicable are noted at bottom right of report:

Report Revision: 1
Revision Description: 1 - Original



APPROVED
SMA 9/20/2022

Testing performed under direct supervision of approved signatories per QM-001 ISO 17025 Quality Manual PARA 7.8.

Jeremy Riley **Joshua Cox** **Clint Williams**
Ops Mgr **Quality Mgr** **Engr Tech**

Decision Rule: Per previously communicated and agreed, data has been supplied/reported as observed without accounting for measurement uncertainty.

Report invalid unless color seal present. Page 1 of 1



A DIVISION OF J.T. ADAMS CO., INC.

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www.tensile.com

CERTIFIED TEST REPORT

Sifco ASC
5708 E Schaaf Rd
Independence OH 44131

Job No.: 2210-05-0210
Date: 10-19-2022
Cust. PO#: PO00009101

Description: 1 sample Solution Code: 5070 Batch# 2208099
Material: Steel with Cadmium Plating with 3002 Conversion Coating
Spec: AMS 2451/4E

TEST RESULTS

250 Hour Salt Spray (ASTM B117-19)

Cust. Reqs.: Shall show no visual evidence of corrosion on significant surfaces after being subjected for 250 ±1 hour

Test panel exhibited no corrosion products.

Note: Panels exposed at 15° to 30° from vertical.

(See attached photo)

The above conforms to requirements listed.

Michael Gaydos
Authorized Agent



CERTIFIED TEST REPORT

Job No.: 2210-05-0210

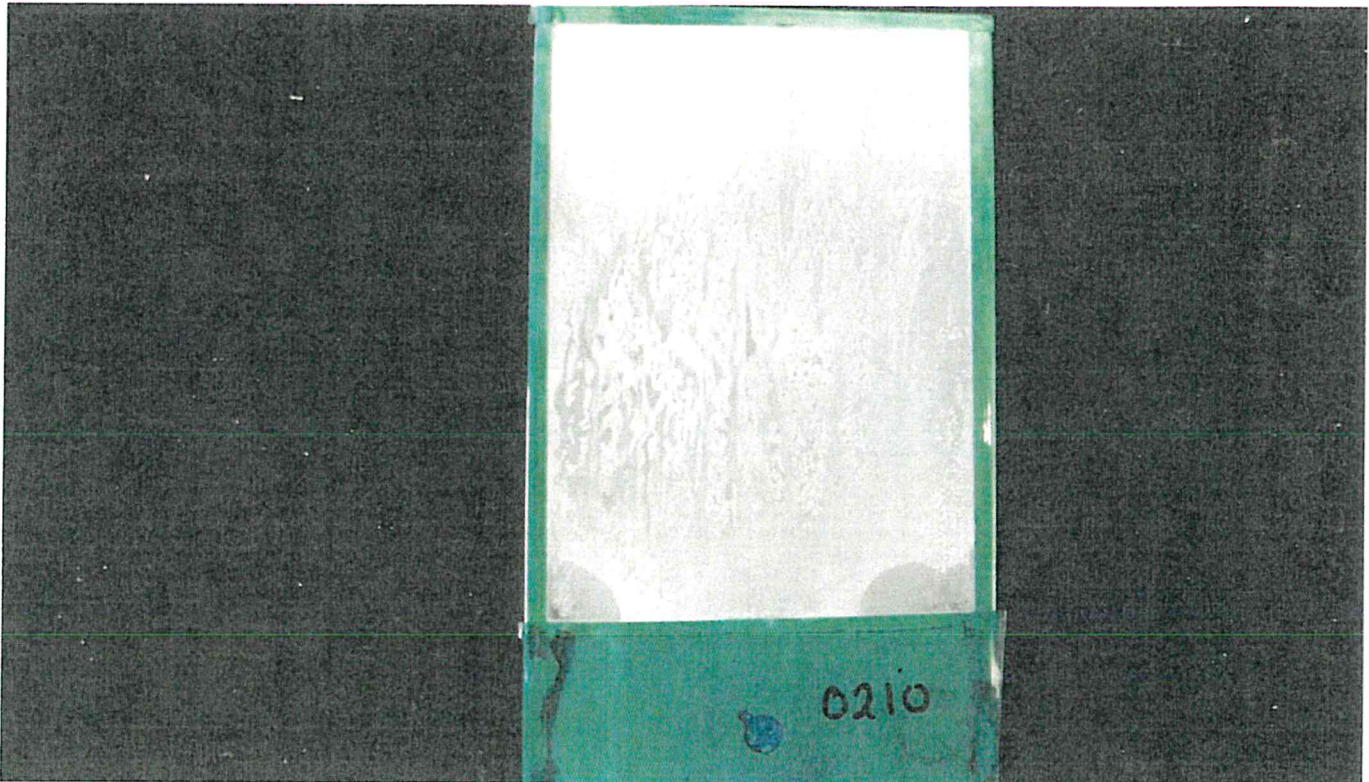


Figure No.: 1

Batch# 2208099
After 250 Hours

APPROVED
DS 10/24/22