

NOTICE OF COMPLETION  
AND  
AUTHORIZATION TO APPLY THE UL MARK



2020-10-23

MR. Ralf Block  
Jacob GmbH  
Elektrotechnische Fabrik  
Gottlieb-Daimler-Strasse 11  
Kernen, 71394, DE

Our Reference: File E140310, Vol 1 and 2                      Order 13458704  
Project 4789586580.2

Your Reference:  
Project Scope: Addition of brass CuZn21Si3P into File E140310 V1 S2, V2 S3 (Phase 2)

Dear MR. Ralf Block:

Congratulations! UL's investigation of your product(s) has been completed under the above Reference Number and the product was determined to comply with the applicable requirements. This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Mark at authorized factories under UL's Follow-Up Service Program. To provide your manufacturer(s) with the intended authorization to use the UL Mark, you must send a copy of this notice to each manufacturing location currently authorized under File E140310, Vol 1 and 2.

Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent in the near future. Until then, this letter authorizes application of the UL Mark for 90 days from the date indicated above.

Additional requirements related to your responsibilities as the Applicant can be found in the document "Applicant responsibilities related to Early Authorizations" that can be found at the following web-site: <http://www.ul.com/EAResponsibilities>

Any information and documentation provided to you involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

We are excited you are now able to apply the UL Mark to your products and appreciate your business. Feel free to contact me or any of our Customer Service representatives if you have any questions.

Very truly yours,

Roberta Villa  
Engineering Associate Lead  
Roberta.Villa@ul.com

Reviewed by:

Bruce A. Mahrenholz  
CPO Director  
Bruce.A.Mahrenholz@ul.com

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TEST RECORD NO. 4

## SAMPLES:

Samples of the metal closures made of Brass as indicated below were submitted by the manufacturer for examination and tests.

Series 10.XX15 M/G, where XX is 20, 32, 40, 50 or 63. Made of <b>brass CuZn39Pb3, nickel plated</b> . Type 4X.
Series 10.XX15 Y/G where XX is 20, 32, 40, 50 or 63. Made of <b>brass CuZn21Si3P lead-free, nickel plated</b> . Type 4X.

**Samples of models 10.6315 M/G and 10.5015 Y/G were tested to represent entire series 10.XX15 M/G and 10.XX15 Y/G.**

## GENERAL:

Report revision to add brass CuZn21Si3P lead-free (identified by letter Y in the catalog numbers) as alternate material of existing brass CuZn39Pb3 (identified by letter M in the catalog numbers).

Due to Type 4X rating, corrosion tests are needed based on UL 50E standard. Due to lack of corrosion tests for brass CuZn39Pb3 already used for the certified models, corrosion tests were performed for both materials Cu39Pb3 and CuZn21Si3P.

The following tests were performed:

Test Name	Standard / Section
OUTDOOR CORROSION - 600 HOUR SALT SPRAY TEST	UL 50E / Sec. 8.8.1
OUTDOOR CORROSION - 1200 HOUR MOIST CARBON DIOXIDE-SULPHUR DIOXIDE-AIR TEST	UL 50E / Sec. 8.8.2
ADDITIONAL CORROSION PROTECTION - TYPE 3X, 3RX, 3SX, 4X AND 6P	UL 50E / Sec. 8.9

The following tests were considered covered as follow:

Test	Rationale for Waived Test(+)	File Reference	Report Date	Test Record No.
Closure Assembly	1, 2	E140310	2003-06-30	1
Gasket aging test	1, 2	E140310	2003-06-30	3
Hose Down	1, 2	E140310	2003-06-30	1, 3
Tensile strength and elongation tests	1, 2	E140310	2003-06-30	3

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1. Same identical products made of brass CuZn39Pb already certified, only alternate brass material CuZn21Si3P.
2. Engineering judgment that the changes do not negatively impact the performance of the product for the specific test waived.

#### Test Record Summary:

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in the following standards and, therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Standard no.	Standard name	Standard Edition
UL 514A	METALLIC OUTLET BOXES	Edition 11 - Revision Date 2017/08/11
CSA C22.2 NO. 18.1	METALLIC OUTLET BOXES	Edition 2 - Revision Date 2017/08/11
UL 50E	ENCLOSURES FOR ELECTRICAL EQUIPMENT, ENVIRONMENTAL	Edition 3 - Issue Date 2020/10/15
CSA C22.2 NO. 94.2	CONSIDERATIONS	

Report by:	Reviewed by:
ROBERTA VILLA	GLENN RUSINSKI
Engineering Associate Lead	Senior Staff Engineer
UL International Italia Srl	

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

TEST RECORD NO. 3

SAMPLES:

Samples of the metal closures made of Brass as indicated below were submitted by the manufacturer for examination and tests.

Series 10.XX15 M/G where XX is 12, 16 or 25. Made of brass CuZn39Pb3, nickel plated. Type 4X.
Series 10.XX15 Y/G where XX is 12, 16 or 25. Made of brass CuZn21Si3P lead-free, nickel plated. Type 4X.

GENERAL:

Report revision to add alternate brass CuZn21Si3P lead-free (identified by letter Y in the catalog numbers) as alternate material of existing brass CuZn39Pb3 (identified by letter M in the catalog numbers).

Due to Type 4X rating, corrosion tests are needed based on UL 50E standard. Due to lack of corrosion tests for brass CuZn39Pb3 already used for the certified models, corrosion tests were performed for both materials Cu39Pb3 and CuZn21Si3P.

The following tests were considered covered as follow:

Test	Rationale for Waived Test(+)	File Reference	Report Date	Test Record No.
Closure Assembly	1, 3	E140310	2011-09-28	1
Gasket aging test	1, 3	E140310	2011-09-28	2
Hose Down	1, 3	E140310	2011-09-28	1, 2
Tensile strength and elongation tests	1, 3	E140310	2011-09-28	2
OUTDOOR CORROSION - 600 HOUR SALT SPRAY TEST	2, 3	E140310	2003-06-30	4
OUTDOOR CORROSION - 1200 HOUR MOIST CARBON DIOXIDE-SULPHUR DIOXIDE-AIR TEST	2, 3	E140310	2003-06-30	4
ADDITIONAL CORROSION PROTECTION - TYPE 3X, 3RX, 3SX, 4X AND 6P	2, 3	E140310	2003-06-30	4

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1. Same identical products made of brass CuZn39Pb already certified, only alternate brass material CuZn21Si3P.
2. Same material tested, only different smaller sizes.
3. Engineering judgment that the changes do not negatively impact the performance of the product for the specific test waived.

**Test Record Summary:**

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in the following standards and, therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Standard no.	Standard name	Standard Edition
UL 514A	METALLIC OUTLET BOXES	Edition 11 - Revision Date 2017/08/11
CSA C22.2 NO. 18.1	METALLIC OUTLET BOXES	Edition 2 - Revision Date 2017/08/11
UL 50E	ENCLOSURES FOR ELECTRICAL EQUIPMENT, ENVIRONMENTAL CONSIDERATIONS	Edition 3 - Issue Date 2020/10/15
CSA C22.2 NO. 94.2		

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ROBERTA VILLA	GLENN RUSINSKI
Engineering Associate Lead	Senior Staff Engineer
UL International Italia Srl	

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## Excerpt from

NMX-J-235/2-ANCE-2015 ♦ CSA C22.2 NO. 94.2-15 ♦ UL 50E

OCTOBER 16, 2015

### 8.8 Outdoor corrosion protection

#### 8.8.1 600-hour salt spray test

8.8.1.1 Finishes other than as described in Clause 7.2.3.1 (a) – (d), such as special metallic finishes, or metallic finish combined with paint, shall be tested in accordance with Clause 8.7, except the time shall be 600 hours when compared with G90 galvanized sheet steel (without annealing, wiping, or other surface treatment) conforming with Clause 7.2.3.1(a).

8.8.1.2 An enclosure shall be considered to have met the requirements of this test if upon completion it does not show pitting, cracking, or other deterioration more severe than that resulting from a similar test on G90 galvanized sheet steel.

#### 8.8.2 1200-hour moist carbon dioxide-sulphur dioxide-air test

##### 8.8.2.1 General

8.8.2.1.1 Two unscribed specimens and two specimens scribed in accordance with Clause 8.8.2.1.1 shall be tested.

##### 8.8.2.2 Scribed specimens

8.8.2.2.1 Where specified or agreed upon, each specimen shall be prepared for testing by scribing it in such a manner that the scribe can be exposed lengthwise when positioned in the test cabinet. This position will allow solution droplets to run lengthwise along the scribe.

8.8.2.2.2 Scribe the specimen by holding the tool at approximately a 45-degree angle to the surface. Position the tool so that only the carbide is in contact with the surface. Pull the scribing tool to obtain a uniform V-cut through the coating that is being tested. Inspect the tool frequently for dulling, chipping, or wear and replace or repair as needed. The scribe should be of sufficient length to cover significant test area, but should not contact the edge of the specimen. The scribe shall penetrate all the organic coating layers on the metal, leaving a uniformly bright line of burrs. The extent of scribe penetration through metallic coatings should be agreed upon between the producer and user. The quality of the scribe may be observed with the aid of low-power magnification. Defects, coding, and flaws that may affect results shall be noted, marked, and described.

##### 8.8.2.3 Test procedure

8.8.2.3.1 The apparatus used for the moist carbon dioxide-sulfur dioxide-air exposure shall consist of a chamber having a volume of at least 0.08 m<sup>3</sup> (3 cubic feet) with a water jacket and thermostatically controlled heater to maintain a temperature of 35 plus 1.1 or minus 1.7°C (95 plus 2 or minus 3°F).

8.8.2.3.2 Sulfur dioxide and carbon dioxide shall be supplied to the test chamber from commercial cylinders containing the gases under pressure. An amount of sulfur dioxide equivalent to 1 percent of volume of the test chamber, and an equal volume of carbon dioxide, shall be introduced into the chamber each working day. Prior to introducing the new charge of gas each day, the remaining gas-air mixture from the previous day shall be purged from the chamber. A small amount of water (approximately 10 ml/0.0003 m of chamber volume) shall be maintained at the bottom of the chamber for humidity. This water shall not to be changed during the exposure.

8.8.2.3.3 The specimens shall be supported in plastic racks at an angle of 15 to 30 degrees from the vertical.

8.8.2.3.4 An enclosure shall be considered to have met the requirements of this test if upon completion, specimens:

- a) Except for the scribe, do not show more than light corrosion beneath the coating, with no visual pitting of substrate and only incipient buildup or weeping of corrosion products;
- b) Comply with Table 6; and
- c) Do not exhibit an average creepage distance from the scribe greater than Rating No. 6 [1.6 – 3.2 mm (1/16 – 1/8 inch)] as designated in Procedure A, Method 2, as specified in Annex B, Ref. No. 4, with maximum isolated spot not exceeding 9.5 mm (3/8 inch).

## **8.9 Additional corrosion protection for type 3X, 3RX, 3SX, 4X and 6P**

### **8.9.1 200-hour salt spray test**

8.9.1.1 Materials other than Type 304 stainless steel, Type 316 stainless steel, and polymerics shall be tested in accordance with 8.7, except the time shall be 200 hours.

8.9.1.2 An enclosure shall be considered to have met the requirements of this test if upon completion it does not show pitting, cracking, or other deterioration more severe than that resulting from a similar test on passivated American Iron and Steel Institute Type 304 stainless steel.