

## Quality Assurance and Regulatory Affairs

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October 4, 2023

### UN/DOT Design Type Certification

|                       |  |                         |                    |
|-----------------------|--|-------------------------|--------------------|
| <b>Report No:</b>     | F-1899-230929  | <b>Test Type:</b>       | New Certification  |
| <b>Test Date:</b>     | September 29, 2023   | <b>Expiration Date:</b> | September 29, 2024 |
| <b>Test Facility:</b> | Greif – Alsip, IL Technical Center<br>4300 W 130th Street<br>Alsip, IL 60803 |                         |                    |

Attached are our laboratory test result sheets of the UN/DOT Performance Test on the fibre drums that were conducted at the above test facility location.

This design is manufactured under the registered symbol GBC at the following locations: Charlotte, Englishtown, Houston-Fibre, Lithonia, Morgan Hill, Naperville, Van Wert, Windsor Locks, Wright City.

These sample containers, that were made with the proper components, passed the required tests for the following UN Marking(s):

1G/Y120/S 1G/Z120/S

Thank you and best regards.

A handwritten signature in black ink, appearing to read 'P. Zamperin', is written over a horizontal line.

Phil Zamperin  
Sr. Director, Quality Assurance and Regulatory Affairs

This test report is the property of Greif. The know-how, methods and techniques disclosed in this report are confidential information which can only be used by those persons with specific written authorization from Greif.

**Quality Assurance and Regulatory Affairs  
United Nations/IMO/DOT  
Performance Test**



**DESIGN TYPE Details**

**Report No:** F-1899-230929  
**Date Tested:** September 29, 2023  
**Qualification Date:** August 22, 2006  
**Drum Style:** LR  
**Drum Type:** Lok-Rim Fibre Drum  
**UN Certified Marking(s):**



1G/Y120/S



1G/Z120/S

**Diameter:** 15.5 inches  
**Overall Height:** 32.75 inches  
**Tare Weight:** 9.1 lbs  
**Gallon Capacity:** 10 - 26  
**No of Lams:** 6 lams  
**Sidewall Material:** Kraft  
**Kraft Weight:** 56#  
**Sidewall Liner/Barrier:** None  
**Top Chime:** .022 Narrow  
**Bottom Chime:** .022 Narrow  
**Bottom Material / Thickness:** Fibre .120  
**Top Seal:** None  
**Bottom Seal:** None  
**Poly Bag/Poly Tubing:** None  
**Bag/Poly Tubing Application:** N/A  
Additional components - see next page

**Drum Construction:**

Shell/Tube is constructed of convolutely wound kraft or barrier (if applicable) paper using adhesive to bind individual layers. Metal reinforcing chime bands are installed on the shell/tube to each of the top and bottom ends of the sidewall tube so as to form an outwardly directed step which is integral with and incorporates the fibre sidewall. A bottom element is mechanically crimped to lock bottom and shell together. If the design type includes a bag it may be mechanically crimped into the bottom chime or dropped in as a separate unit as indicated in the specification. Top shell/chime is mechanically formed with an inverted curl that allows for attachment of a cover and locking ring.

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**DESIGN TYPE Details - Additional Components**

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**UN Certified Marking(s):**



1G/Y120/S



1G/Z120/S

The following components have undergone DOT qualification testing as described in the Original Design Type Result Sheet using the same conditions and procedures, and meet the requirements of §178.601(g)(5):

**COVER**

| <u>Material</u> | <u>Description</u>  | <u>Thickness</u> |
|-----------------|---------------------|------------------|
| Steel           | FDC Plain No Gasket | 26ga             |

**CLOSING RINGS**

| <u>Material</u> | <u>Style / Thickness</u> |
|-----------------|--------------------------|
| Steel           | Lok-Rim .022             |

**Notes:**

1. Plug elastomer gaskets include EPDM, BUNA. All other gasket materials should be denoted in the tested design. For specific plug gasket and torque instructions, please refer to your product specific closure instruction on the packing slip.
2. See attached closure notification for torque values for applicable rings on test drum.
3. If torques for components are not included on the attached closure, the components were supplied by the customer for testing. Proper closure of the unit is the responsibility of the shipper.
4. Closures supplied by Greif for this design have been fully qualified throughout the packaging design history, and the closures on this report may not include all qualified closures for this design. Please consult Greif Quality Assurance and Regulatory Affairs for specific questions regarding closure qualification. In the event a closure that is not qualified by Greif is substituted by the customer, the certified mark should be voided and removed from the package. It is the responsibility of the customer to ensure that any substituted closures meet the requirement of CFR 49 178.601 and this report cannot be used as evidence of compliance to the certified marking.

**Quality Assurance and Regulatory Affairs  
United Nations/IMO/DOT  
Performance Test**



**NEW DESIGN RESULT SHEET**

**Report No:** F-1899-230929  
**Date Test:** September 29, 2023  
**Qualification Date:** August 22, 2006  
**Drum Style:** Lok-Rim Fibre Drum  
**UN Certified Marking(s):**



1G/Y120/S



1G/Z120/S

|                           |                    |                 |
|---------------------------|--------------------|-----------------|
| <b>Maximum Capacity:</b>  | 100.1 Litres       | 26.4 Gallons    |
| <b>Capacity Range:</b>    | 37.9 - 98.6 Litres | 10 - 26 Gallons |
| <b>Test Mass - Gross:</b> | 120.0 KG           | 264.6 Lbs       |
| <b>Tare:</b>              | 4.1 KG             | 9.0 Lbs         |
| <b>Net:</b>               | 115.9 KG           | 255.6 Lbs       |

**Static Compression Test (49 CFR 178.606)**

Package Preparation: Drums filled to 95% minimum capacity, with a mixture of materials including sand, metallic dust, sawdust, steel slugs/shot, resin with similar in density sufficient to represent the gross mass package weight indicated in the certification, min grain size 125 micrometers

Conditioning: 24 hours at 23°C, ±2°C temperature and 50%, ±2% relative humidity.

|             |                                     |
|-------------|-------------------------------------|
| Total Mass: | 949 KG ( 7.9 Units x 120.0 KG each) |
| Duration:   | 24 Hours                            |
| Results:    | 3 Units Passed                      |

**Drop Test (49 CFR 178.603)**

Package Preparation: Drums filled to 95% minimum capacity, with a mixture of materials including sand, metallic dust, sawdust, steel slugs/shot, resin with similar in density sufficient to represent the gross mass package weight indicated in the certification, min grain size 125 micrometers

Conditioning: 24 Hours at 23°, +/- 2°C Temperature and 50%, +/- 2% Relative Humidity

|                                     |                          |
|-------------------------------------|--------------------------|
| Drop Height:                        | 1.2 Metres / 47.3 Inches |
| Diagonal Top Drop   Closure/        | 3 Units Passed           |
| Handle @ Impact Point:              |                          |
| Diagonal Btm Drop   On bottom edge: | 3 Units Passed           |

**Vibration Test (49 CFR 178.608)**

Capable of withstanding, without rupture or leakage, the vibration test procedure in 49 CFR 178.608.

**Leakproofness (49 CFR 178.604)**

Not Applicable

**Hydraulic (Hydrostatic) (49 CFR 178.605)**

Not Applicable

**TEST RESULTS CERTIFIED BY:**

**Quality Assurance and Regulatory Affairs**

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**Phil Zamperin**  
**Sr. Director, Quality Assurance and Regulatory Affairs**

## LOK-RIM CLOSURE NOTIFICATION

**Product Type:** F11

**Country:** USA

Pursuant to the requirements of the Department of Transportation in CFR 49 Part 178.2(c)(1), this is your notification of the closing method used for the containers sold to you. This method of closure should be used to ensure that your containers have been closed in the same manner as when they were initially tested.

To be UN certified, this drum must be closed with the same cover and closing ring used for certification. If drum is purchased without these parts, contact the supplying Greif plant for the correct cover and closing ring.

Your product may adversely affect container materials, bung threads, or closing devices. Product compatibility with the container is the shipper's responsibility.

These instructions for closure are based upon the closure methods used to enable these containers to pass the United Nations test requirements as outlined by the UN marking on the package.

The closure recommendations do not take into account any hazards present in your facility, or the handling, filling or shipping of your product.

Any containers used for packaging hazardous materials should be inspected prior to filling and shipment. Containers with obvious damage or deterioration should not be filled or shipped.

### To Close:

1. Place cover on drum.
2. Snap the closing ring over the cover and top lip of the drum. Make sure that the writing on the closing lever is right side up. Also, make sure the bottom edge of the closing ring engages under the top lip of the drum.
3. Pull the locking lever closed. At the same time, tap along the entire outside edge of the closing ring with a mallet, beginning directly opposite the closing lever, until the lever is fully closed against the edge of the ring.
4. Snap the latch into the lever until it locks, then apply a sealing wire or other sealing device through the holes on the latch lever.
5. For covers with fittings: 2" fittings bearing NPS thread must be tightened to a torque level of 9 FT-LBS, and 3/4" fittings bearing NPS thread must be tightened to a torque level of 3 FT-LBS.
6. Drums closed in this manner have met the UN performance test requirements as specified in the container markings.