

Quality Assurance and Regulatory Affairs

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January 23, 2024

UN/DOT Design Type Certification

Report No:	F-1399-240123	Test Type:	Periodic Retest
Test Date:	January 23, 2024	Expiration Date:	January 23, 2025
Test Facility:	Greif – Alsip, IL Technical Center 4300 W 130th Street 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/Y190/S 1G/Z190/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-1399-240123
Date Tested: January 23, 2024
Qualification Date: November 8, 2007
Drum Style: LR
Drum Type: Lok-Rim Fibre Drum
UN Certified Marking(s):



1G/Y190/S



1G/Z190/S

Diameter: 21.5 inches
Overall Height: 40 inches
Tare Weight: 17.9 lbs
Gallon Capacity: 41 - 61
No of Lams: 7 lams
Sidewall Material: Kraft
Kraft Weight: 56#
Sidewall Liner/Barrier: None
Top Chime: .022 Narrow
Bottom Chime: .022 Narrow
Bottom Material / Thickness: Fibre .220
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

Report No: F-1399-240123
Date Tested: January 23, 2024
UN Certified Marking(s):  1G/Y190/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	24ga

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**



RETEST RESULT SHEET

Report No: F-1399-240123
Date Test: January 23, 2024
Qualification Date: November 8, 2007
Drum Style: Lok-Rim Fibre Drum
UN Certified Marking(s):  1G/Y190/S

 1G/Z190/S

Maximum Capacity:	233.9 Litres	61.7 Gallons
Capacity Range:	155.4 - 231.2 Litres	41 - 61 Gallons
Test Mass - Gross:	190.0 KG	418.9 Lbs
Tare:	7.9 KG	17.5 Lbs
Net:	182.1 KG	401.4 Lbs

Dynamic Compression Test (49 CFR 178.606)

Package Preparation: No Package Content

Conditioning: 24 hours at 23°C, $\pm 2^\circ\text{C}$ temperature and 50%, $\pm 2\%$ relative humidity.

Total Mass: (3.4 Units * 190 KG Each) 1.5 x Static Load = 970 KG

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°, $\pm 2^\circ\text{C}$ Temperature and 50%, $\pm 2\%$ 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.