



American Bureau of Shipping

Certificate No.: 03-15542-LD

Design Type No.: AB/229/02-01

Port: LONDON

Date: 19 DEC 2002

This is to certify that the undersigned Surveyor to this Bureau did, at the request of Structure Flex, Inc., attend at NEL, East Kilbride, Glasgow on the 19th December 2002 and subsequent dates in order to witness and report on Intermediate Bulk Container, Bag Style Proline Enviro "Type A", Bag No. 3, Gross Weight 1832 Kg. The bag is coated with thermoplastic polyester to fabric specification M001, total weight of 1000g/M² and M0076, total weight of 680g/M². Tare weight 13.6 Kg. Dimensions:- 1.850 M (67") Diameter x 1.968 M (50") Fill height SWL (4000 lbs) 1815 Kg Minimum gross weight. It is manufactured in accordance to the tests required by International Maritime Dangerous Goods Code, 2001 Edition and Title 49 of the Code of Federal Regulations.

- a) Vibration Test:- NEL Test No. 14252.2
Test Procedure 49 CRF, Subtitle 'B', Subchapter 'C', Part 178, Paragraph §178.819.

Bag No.5 was placed on the table of a Vibration Machine capable of producing a bounce frequency of 4.68Hz with a peak to peak displacement 25.4mm. The test duration was 1 hour, and during this a metal strip 100mm wide x 610mm long x 1.6mm thick was able to be inserted between the bag and the table progressively on each 'bounce' for its entire length. This test was repeated at regular intervals. On completion after 1 hour, there was no visual damage or leakage to the FICB. This test met the criteria of the Vibration Test.

- b) Righting Test:- NEL Test No. 14252.3 Test Procedure §178.817
Requirement Clause 4.10, Testing Clause 7.10, UN Chapter 6.5.4.12

Bag No. 5 was used to conduct this test where the bag is tipped onto its side and lifted by one lifting loop at a rate of not less than 0.1M/sec (1M in 10 secs). During the test the bag was lifted clear of the floor by 1M in a time of 3 secs by one lifting loop. There was no visual damage to the bag or loss of contents. The test met the criteria of the Righting Test.

Issued on: 20th January 2003

By:



T.G. Ramsay - Surveyor
LONDON

NOTE: This certificate evidences compliance with one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. This certificate is a representation only that the container specified herein has been found to comply with one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping. The validity, applicability and interpretation of this Certificate is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Certificate or in any Report issued in contemplation of this Certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.

CERTIFICATE OF PACKAGING PERFORMANCE

Issued on behalf of the Department of the Environment, Transport and the Regions, Civil Aviation Authority
and the Health and Safety Executive by Pira International Limited

Randalls Road, Leatherhead, Surrey KT22 7RU England
Telephone (01372) 802000. Fax (01372) 802238.
Registered Number: 3858209 England Limited Liability



Certificate serial number: 4659
Issue number and date: 01 03/02/03

NOT TRANSFERABLE

Application No.: 5087

Issued to: **STRUCTURE-FLEX LTD**
Grove Lane
Holt
Norfolk
NR25 6EG

Packaging type: 13H2
Description:
Flexible, intermediate bulk container,
woven plastics, coated for solids

Trade Name: PROLINE SYSTEMS ENVIRO BAG TYPE A Diameter: 1194 mm Height From: 1270 mm Height to: 1270 mm
Material body: Flat woven thermoplastic coated polyester Weight of body: 270 gms.
Material base: Flat woven thermoplastic coated polyester Weight of base: 270 gms.
Material top: Flat woven thermoplastic coated polyester Weight of top: 270 gms.
Style of base: Welded in No of lifting points: 4 Style of top: Welded in
Filling via: Filler spout in top Emptying via: Discharge spout in base
Filling spout size: 368 mm Discharge spout size: 368 mm

It is certified that a sample of the design type described above has been tested in accordance with the provisions of the United Nations Recommendations on the Transport of Dangerous Goods, Chapter 6.5 (and the equivalent provisions in RID/ADR, the IMDG Code) and appropriate paragraphs from 6.5.4.4 to 6.5.4.9 and successfully met the criteria. IBCs of the design type tested may bear the marking:

U 13H2/Y/** **/GB/ STRUCTURE-FLEX - 4659/9801/1815

** ** To be replaced by the month and the last two digits of the year of manufacture

THE TEST REPORT(S) AND ITS APPENDICES ARE AN INTEGRAL PART OF THIS DOCUMENT

Special Notes:

There may be additional options please see full report(s)

When permitted by national or modal regulations, IBCs of the design type described may be used for solids.

To test levels of:

		packaging group	bulk density (g/cc)	gross mass (kg)	min particle size (mm)
Drop Test (m)	1.2				
Topple (m):	1.2	II	from: 1.41 to: 1.41	1815	10.00
Stack	4 High	III	from: 1.41 to: 1.41	1815	10.00

Signed:

R M Castle, Chief Officer (Dangerous Goods)

Amendments or additions to this certificate or the design type specification described therein other than those authorised by the certifying body render the certificate invalid



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- a) Drop Test :- NEL Test No 14252.6 Test Procedure §178.810 (d)
Requirement Clause 4.7, Testing Clause 7.7
UN Chapter 6.5.4.9

Bag No. 3 was lifted to a drop height of 1.2M and dropped onto a concrete floor. The bag was then re-lifted from the ground and there was no visible damage or loss of contents. The test met the criteria for Drop Test.

- b) Topple Test:- NEL Test No. 14252.7 Test Procedure §178.816(b)
Requirement clause 4.9, Teting Clause 7.9
UN Chapter 6.5.4.11

Bag No. 3 was lifted to sit on the edge of a structure 1.2M from the concrete floor, and released to topple onto the floor, landing on its side. The bag was then re-lifted with no visible damage or loss of contents. The test met the criteria for Topple Test.

- c) Top Lift Test:- NEL Test No. 14252.1 Test Procedure §178.812 Requirement Clause 4.3, Testing Clause 7.3 UN Chapter 6.5.4.5. Bag No 4 was placed in a tensile machine with the straining force on top of the bag contents. The stress of 6 x bag load, ie 10890 Kgf is minimum load. Actual load of 107.1 Kn (10921 Kgf) was applied for 5 minutes. There was no damage to the IBC and no loss of contents. The test met the criteria for Lift Test.

- d) Stacking Test:- NEL Test No. 14252.5, Test Procedure §178.815 Requirement Clause 4.4, Testing Clause 7.4, UN Chapter 6.5.4.6. To simulate a 4 high stacking bag No. 4 was placed in a compression machine. A minimum load of $1815 \times 3 \times 1.8 = 9801$ Khf was required. The actual load of 96.2 Kn (9809 Khf) was applied and held for 24 hours. There was no visible damage or leakage of contents. The test met the criteria for Stacking Test.

- e) Tear Test:- NEL Test No. 14252.4, Test Procedure §178.818 Requirement Clause 4.8, Testing Clause 7.8, UN Chapter 6.5.4.10. Bag No. 4 was cut by a knife score 100mm long at an angle of 40 midway up its height. The cut penetrated the bag wall. A load of 34.6 Kn (3528 Kgf), twice the mass, was applied for 5 minutes, followed by free suspension from the lifting straps for a further 5 minutes. The tear had extended 2mm after tests, ie 2%. 25% is allowed. The test met the criteria of the Tear Test.

Issued on: 20th January 2003

By:


T.G. Ramsay - Surveyor

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