



Certificate No. D 7495.1/09-9

Date of test 8.9.2009
Date of expiry 30.9.2012
Number of pages 4
Number of annexes 2

Applicant and Manufacturer Al-Matin Group,
P.O.Box 1191, Homs, Syria

Design type *Flexible intermediate bulk containers (FIBCs)
for dangerous goods*

Manufacturer's type designation: 066/09

Short name of manufacturer: ALMATIN

UN type denomination: 13H3W

Packaging group: III

Stacking test load: 5500 kg

Maximum permissible gross mass: 1004 kg

Kind of tests Design type tests in accordance with the appropriate requirements of the UN-Recommendations on the Transport of Dangerous Goods, chapter 6.5, Special Regulations for flexible intermediate bulk containers (IBC)

Reference to the regulations concerning the Carriage of Dangerous Goods on road:

- European agreement concerning the International Carriage of Dangerous Goods by road (ADR)
- Verordnung über die Beförderung gefährlicher Güter auf der Strasse (SDR)

Reference to the regulations concerning the Carriage of Dangerous Goods by rail:

- Verordnung über die Beförderung gefährlicher Güter mit der Eisenbahn (RSD)
- Regulations concerning the International Carriage of Dangerous Goods by rail (RID)

Reference to the regulations concerning the Carriage of Dangerous Goods by seagoing vessels:

- International Maritime Dangerous Goods Code (IMDG-Code)

Enclosures - This certificate consists of four pages and one enclosure.
Enclosure: Documentation made out by the manufacturer (2 pages)

Notes - This certificate is allowed to be transmitted, copied or published completely only.
- A test piece is kept in our store for three years.
- Test diagram and photo of a test piece see on page 4.

This certificate has been presented to the Swiss competent authority (EGI) in the course of the design type approval procedure. The certificate is part of the official approval document CH / EGI 4205422. The FIBC prepared as for carriage shall be in accordance with this design type. The use of other packaging methods or components may render the approval invalid.





Test pieces

Flexible intermediate bulk containers (FIBCs) for dangerous goods

Description

Manufacturer's type designation **066/09**
Dimensions (90 cm x 90 cm) x 145 cm - (base) x filling height
Capacity 1300 litres
Tare 3150 g incl. inliner (the inliner is forming an integral part of the FIBC)
Wall Circular fabric, Polypropylene 190 g/m² (average), uncoated, white fabric with four black and twentyfour red coloured tapes and eight interwoven reinforcing stripes*)
Base Double laying, Polypropylene 2 x 160 g/m², uncoated*)
Top Polypropylene 140 g/m², uncoated*), the fabric is sewn into the filling slit, double chain sewings
Filling spout Polypropylene 80 g/m² incl. coating*), chain sewing, d = 40 cm, diameters smaller than 40 cm are allowed
Inliner PE film, thickness 100 µm, weight 95 g/m². The inliner and the filling spout are stitched together
Suspension One loop formed out of the fabric, protected by a sleeve
Closure Closed by tying up the filling spout with a PP-ribbon
Details No vertical seams, four horizontal seams at the bottom (overlock + chain sewings) / wall and base fabric folded in the bottom seams / quintuple seam at the suspension / no discharge spout. Construction with discharge spout is not allowed.

*) Raw material: Pure virgin polypropylene (statement of the manufacturer)

For more design details see enclosure.

Test conditions

Five identical FIBCs (marked FIBC 1 ... FIBC 5) have been filled with plastic granules and steel granules or with plastic granules only. These samples have been tested as mentioned on page 3 of this certificate.

Polyethylene granules

Grain size: 3 mm to 4 mm
 Bulk density 550 kg/m³
 Angle of repose 30°

Steel granules

Grain size: 3 mm
 Bulk density 4300 kg/m³
 Angle of repose 25°

Test result

All FIBCs tested meet the requirements of the UN regulations mentioned on page 1. The FIBCs of this design type are allowed to be used for a maximum permissible gross mass (maximum permissible load + tare) of

1 0 0 4 kg / packaging group III

Based on the compression test load of 5500 kg a gross mass of 3056 kg is permitted for stacking, e.g. it is allowed to stack three identical FIBCs of this type on top of the first one if lateral support is ensured sufficiently.

Based on this test certificate the UN-code number (marking) issued by the Approval No. CH / EGI 4205422 runs as follows:



13H3W / Z / ... / CH / EGI 4205422 - ALMATIN / 5500 / 1004

↑
(e.g. 09 09) month and year of production





TESTS PERFORMED

FIBCs no. 1 and 2 have been filled with 1000 kg of a mixture of plastic granules and steel granules up to their maximum filling height. Using these samples the following tests have been performed in the sequence as follows:

1. Drop test

FIBC 1 has been dropped from a height of **0,80 m** on its base onto a rigid horizontal surface according the regulations.

Result: No damages and no loss of contents were determined.

2. Topple test

FIBC 2 has been lifted to a platform and then it has been toppled on a rigid horizontal surface (topple height **0,80 m**).

Result: No damages and no loss of contents were determined.

3. Righting test

FIBC 2, toppled according to pos. 2 and now lying on its side, has been lifted at a speed of **0,1 m/s** to upright position hanging clear of the floor.

Result: No damages occurred in the FIBC or its lifting device.

The FIBCs no. 3, 4 and 5 have been filled with plastic granules up to their maximum filling height. These samples have been subjected to the following tests:

4. Top lift test

A load of **6000 kg** (= six times of net mass) has been applied to FIBC 3, hanging clear of the floor for a period of five minutes.

Result: No damages occurred.

Then the load has been increased up to failure. Breakage occurred at a load of $P_b = 85,7 \text{ kN}$ (8730 kg).

5. Stacking test

FIBC 4, placed on a level hard ground, has been subjected to a superimposed compression load of **5500 kg** (= 1,8 x three times of its maximum gross mass) for a period of 24 hours.

Result: No damages and no loss of contents were determined.


6. Tear test

FIBC 5, placed on the ground, has been perforated by a 100 mm long **45°** cut at the prescribed area and then a load of **2000 kg** (= two times of the maximum net mass) has been applied to the FIBC for a period of five minutes.

After that a load of **1000 kg** (= one time of the maximum net mass) has been applied to the FIBC for a period of five minutes, hanging clear of the floor.

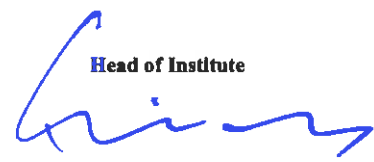
Result: The **45°** cut did not change during the test.

Competent Engineer


Jorg Bartel

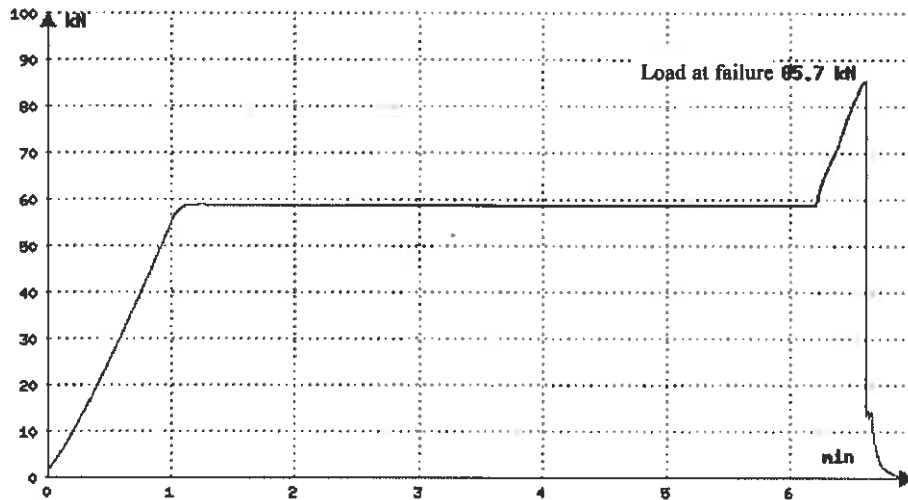


Head of Institute


Dr.-Ing. Kielbassa



Top lift test - test diagram D 7495.1/09-9



Project data

Applicant : AL-Matin Group
Test piece : FIBC 90 cm x 90 cm x 145 cm
Safe working load : SWL = 1000 kg
Packaging group : III

Test data

Test date : 8.9.2009
Test Standard : UN-Recommendations
Load at failure : $P_b = 85,7 \text{ kN} = 8730 \text{ kg}$

