



Test Certificate No. 7097.1/08-5

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

Test pieces *Flexible Intermediate Bulk Container - SWL = 1500 kg, SF = 5:1*
Single trip FIBC for non-dangerous goods acc. ISO 21898

Design specification **Manufacturer's type designation** - - -

Dimensions Test a : (90 cm x 90 cm) x 120 cm (lowest size)
Tests b + c: (90 cm x 90 cm) x 230 cm (highest size)

Tare 1860 g (lowest size) / 2860 g (highest size)

Body fabric Polypropylene 160 g/m², uncoated, white flat woven fabric layers without coloured characterization*)

Suspension Four black/white PP-webbings (50 mm wide, 53 g/m), sewn into the vertical seams in a length of 40 cm / 100 cm (lowest size) resp. 70 cm / 190 cm (highest size)**)

Details Four vertical seams (overlock + chain sewings), two horizontal seams at the bottom (overlock sewings) / U-panel design / fabric folded in all the seams / top with skirt***) / without inliner / double laying discharge spout d = 30 cm***) made of PP- fabric 2 x 60 g/m², uncoated

Kind of tests *Type Tests according ISO 21898*

Tests a + b Cyclic top lift tests plus final load to failure **Test c** Compression test

Test conditions Charging with plastic granules (filling height approx. 115 cm (lowest size) resp. 225 cm (highest size), load application with piston and pressure plate (d = 90 cm), 30 cycles of load application to 30 kN and subsequent unloading, then final test cycle to failure, rate of load application 70 kN/min.

Cyclic load and load to failure **Test a** After 30 cycles of load application to $P_c = 30 \text{ kN}$ (3060 kg) no visible damages occurred in the test piece. Then the load has been increased up to failure. When reaching a load of $P_b = 77,4 \text{ kN}$ (7880 kg) the short leg of a webbing tore out of its attachment.

Test b After 30 cycles of load application to $P_c = 30 \text{ kN}$ (3060 kg) no visible damages occurred in the test piece. Then the load has been increased up to failure. When reaching a load of $P_b = 101,2 \text{ kN}$ (10.310 kg) a webbing tore at the top seam and the fabric tore out of a bottom seam.

Compression **Test c** After six hours compression by $P_k = 60 \text{ kN}$ (6120 kg) no visible damages occurred in the test piece.


Test result *A safe working load SWL = 1500 kg is allowable.*

The safety factors required SF = 4:1 (compression load), SF = 2:1 (cyclic load) and SF = 5:1 (load at failure) are realized.

Statement of conformity The FIBCs tested comply with the requirements of ISO 21898.
FIBCs of this design type are in a condition for safe operation.

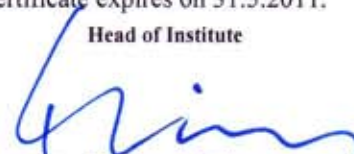
Notes **This certificate covers all FIBCs with heights of between 120 cm and 230 cm**).**
Test diagrams see on page 2. Photos of the test pieces see on page 3.
*) Raw material: Pure virgin polypropylene (statement of the manufacturer)
**) "Directions for use referring to this certificate" see on page 4.
The test pieces are kept in our store for three years. This certificate expires on 31.5.2011.

Competent Engineer


Jorg Bartel



Head of Institute


Dr.-Ing. Kielbassa