



Date of test 4.11.2019
Date of expiry 4.11.2022
Number of pages 4 C/B

This Certificate is only valid when printed in colour and complete with all 4 pages.

Test Certificate No. 11556.1/19-11

Applicant Pack Industry Ltd.
Belelyubskoho street, 70, Office 205, Dnipro City, 49019 Ukraine

Test pieces *Flexible Intermediate Bulk Containers - SWL = 1000 kg, SF = 5:1*
Single trip FIBCs for non-dangerous goods acc. ISO 21898

Manufacturer's type designation FIBC, 4L, 90/100-205/150, skirt, spout

Design

Dimensions Sample a : (90 cm x 90 cm) x 100 cm (lowest size)¹⁾ **Volume** 900 litres **Tare** 1400 g
Samples b + c: (90 cm x 90 cm) x 205 cm (highest size)¹⁾ **Volume** 1850 litres **Tare** 2180 g

Body fabric Polypropylene 150 g/m², uncoated, white flat woven fabric layers, side panels each with three black coloured tapes²⁾

Suspension Four white PP-webbing (45 mm wide, 30 g/m), sewn into the vertical seams in a length of 25 cm / 75 cm (lowest size) resp. 25 cm / 145 cm (highest size)³⁾, anchorage lengths for intermediate sizes see page 4

Details Four vertical seams, two horizontal seams at the bottom (U-panel design) / overlock + chain stitching / fabric folded in all the seams / top with skirt²⁾ / no inliner / discharge spout d = 35 cm³⁾ made of PP-fabric 120 g/m², uncoated, single seam, with four petal closure

Kind of tests *Type Tests according ISO 21898*

Tests a + b Cyclic top lift tests acc. Annex B **Test c** Compression test acc. Annex C

Test conditions Charging with plastic granules (filling height approx. 95 cm (lowest size) resp. 200 cm (highest size), load application with piston and pressure plate (d = 90 cm), rate of load application 70 kN/min.

Cyclic load and load to failure **Sample a** After 30 cycles of load application to $P_c = 20$ kN (2040 kg) no visible damages occurred in the test piece. The load has then been increased until failure. On reaching a load of $P_b = 53,1$ kN (5410 kg) the short leg of a webbing tore out of its attachment.

Sample b After 30 cycles of load application to $P_c = 20$ kN (2040 kg) no visible damages occurred in the test piece. The load has then been increased until failure. On reaching a load of $P_b = 49,5$ kN (5040 kg) the short leg of a webbing tore out of its attachment.

Compression **Sample c** After six hours compression by $P_k = 40$ kN (4080 kg) no visible damages occurred in the test piece.

Test result *A safe working load SWL = 1000 kg / SF = 5:1 is allowable.*

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 is restricted to FIBCs produced by Pack Industry Ltd.

¹⁾ This certificate covers all FIBCs with heights of between 100 cm and 205 cm.

All material weights are minimum weights and may not be lower than the values shown.

Test diagrams see page 2. Photos of the test pieces see page 3.

²⁾ Raw material: Pure virgin polypropylene (statement of the manufacturer)

³⁾ "Directions for use referring to this certificate" see page 4.

Two test pieces are kept in our store for three years. This certificate expires on 4.11.2022.

Competent Engineer

Ronald Clews

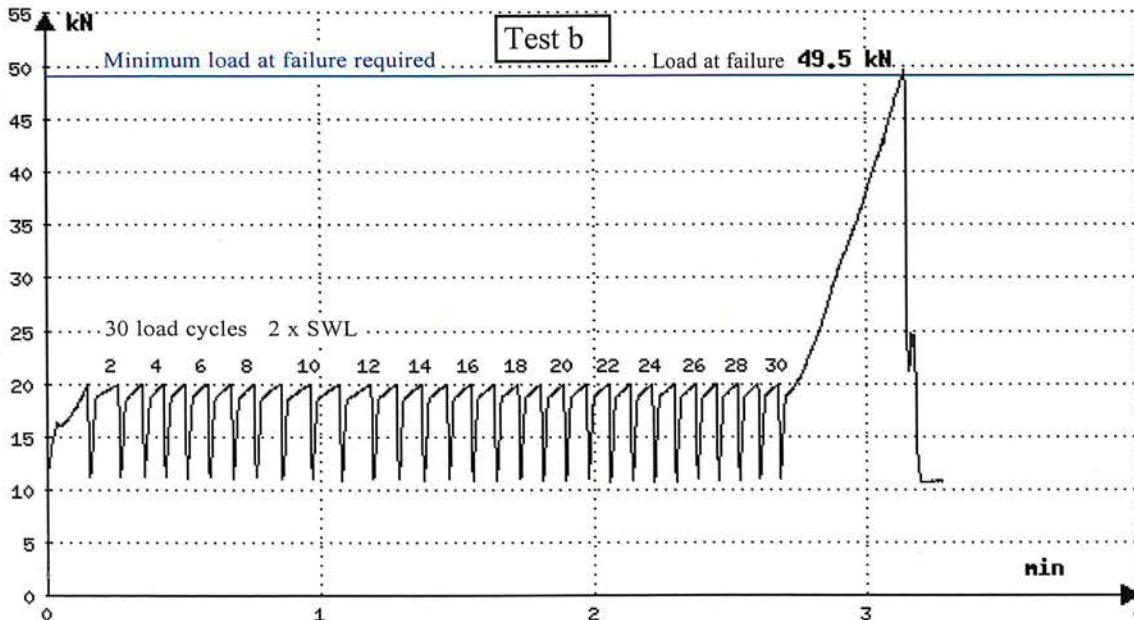
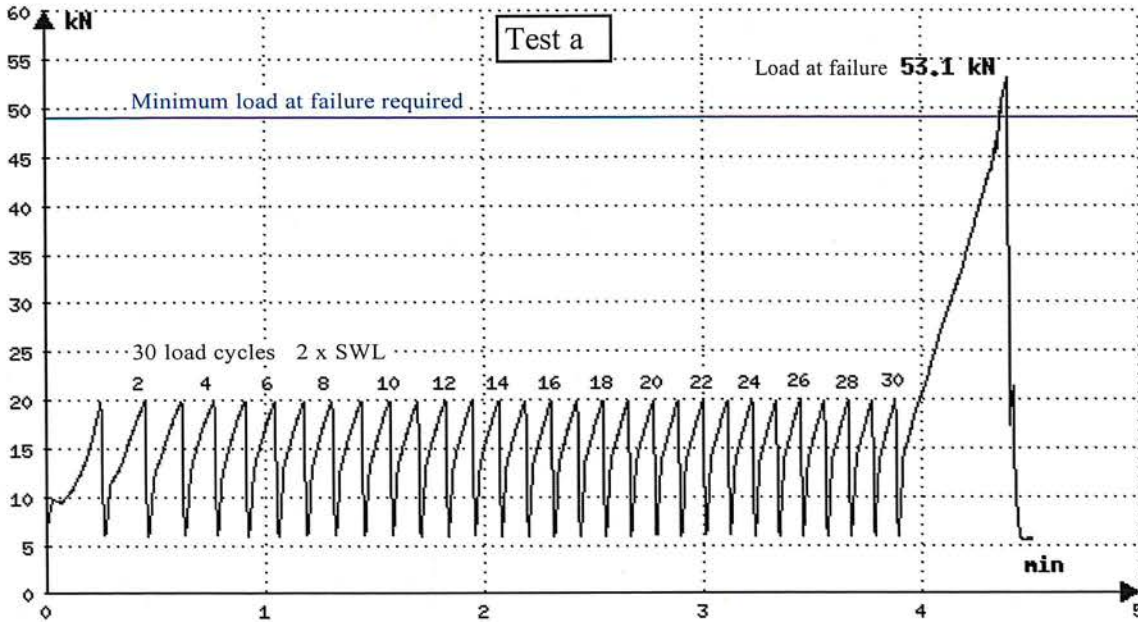


Head of Institute

Dr. Herbert Kielbassa



FIBC - Cyclic top lift tests
Test diagrams 11556.1 a + b / 19 - 11



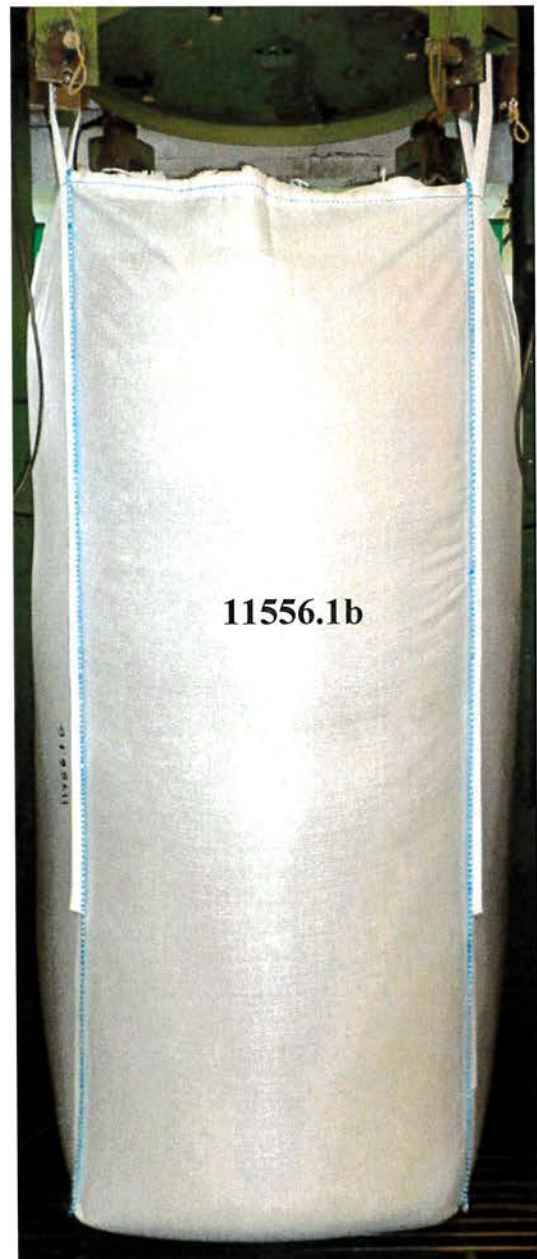
Project data

Applicant : Pack Industry Ltd.
Test piece a : FIBC 90 cm x 90 cm x 100 cm
Test piece b : FIBC 90 cm x 90 cm x 205 cm
Safe working load : SWL = 1000 kg
Safety factor : SF = 5 : 1

Test data

Test date : 4.11.2019
Test Standard : ISO 21898
Load at failure, test a : Pb = 53,1 kN = 5410 kg
Load at failure, test b : Pb = 49,5 kN = 5040 kg

FIBC - Cyclic top lift tests Photos of the test samples



Project data

Applicant : Pack Industry Ltd.
Test piece a : FIBC 90 cm x 90 cm x 100 cm
Test piece b : FIBC 90 cm x 90 cm x 205 cm
Safe working load : SWL = 1000 kg
Safety factor : SF = 5 : 1

Test data

Test date : 4.11.2019
Test Standard : ISO 21898
Load at failure, test a : Pb = 53,1 kN = 5410 kg
Load at failure, test b : Pb = 49,5 kN = 5040 kg



Directions for use referring to this certificate

This certificate covers FIBCs of like design, manufactured using like materials and methods of construction as set down in this certificate and showing dimensions as listed below and in the certificate. The use of other methods or components may render the certificate invalid. It is the responsibility of FIBC manufacturers to ensure the samples tested are representative of the production.

Allowed (covered by this certificate)	Not allowed (not covered by this certificate)
Diameters of discharge spout smaller than 35 cm	Diameters of discharge spout larger than 35 cm
Base without discharge spout	
Base dimensions of between 90 cm x 90 cm and 99 cm x 99 cm provided the same geometry is maintained	Base dimensions smaller than 90 cm x 90 cm Base dimensions larger than 99 cm x 99 cm
Bag heights of between 100 cm and 205 cm	Bag heights smaller than 100 cm Bag heights larger than 205 cm
Use for one filling and one discharge only	Re-use of the FIBCs
Open top or any other design of top construction	Manufacture after expiry date of this certificate: 4.11.2022

Anchorage lengths of the webbings

Bag height (cm)	100	110	120	130	140	150	160	170	180	190	200	205
Short leg (cm)	25	25	25	25	25	25	25	25	25	25	25	25
Long leg (cm)	75	82	88	95	102	108	115	122	128	135	142	145

Label

All FIBCs shall be durably marked by means of a permanently attached and easily visible and readable label. The layout of the label referring to this certificate shall be as shown below with the following data:

Manufacturer's Name & Address and Logo Manufacturer's Reference (unique to the hereby certified FIBC type)	
SWL 1000 kg	Safety Factor 5 : 1
Your logos etc.	Test Certificate No 11556.1/19-11
	Test Certificate Date 4.11.2019
	Approved Laboratory LABORDATA
	Test Standard ISO 21898
	FIBC Class Single trip
	Date FIBC manufactured
Handling Recommendations / Pictograms (proposals see www.labordata.com)	
Supplier's Name & Address (if required)	