



Date of test 27.6.2019  
Date of expiry 27.6.2022  
Number of pages 4 C / B

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

## Test Certificate No. 11434.1/19-6

**Applicant** Rishi FIBC Solutions Pvt. Ltd.  
7th Floor, Indra Complex, Manjalpur, Vadodara – 390 004, Gujarat, India

**Test pieces** *Flexible Intermediate Bulk Containers - SWL = 1000 kg, SF = 6:1*  
*Standard-duty re-usable FIBCs for non-dangerous goods acc. ISO 21898*

**Design** **Manufacturer's type designation** UPSS100061

**Dimensions** Sample a : (90 cm x 90 cm) x 90 cm (lowest size)<sup>1)</sup> **Volume** 800 litres **Tare** 1280 g  
Samples b + c: (90 cm x 90 cm) x 200 cm (highest size)<sup>1)</sup> **Volume** 1800 litres **Tare** 2060 g

**Body fabric** Polypropylene 150 g/m<sup>2</sup>, uncoated, white flat woven fabric layers, each with two yellow coloured tapes<sup>2)</sup>

**Suspension** Four white PP-webbings (45 mm wide, 33 g/m), sewn into the vertical seams in a length of 40 cm / 70 cm (lowest size) resp. 40 cm / 135 cm (highest size)<sup>3)</sup>, 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 filling spout<sup>3)</sup> / no inliner / discharge spout d = 46 cm<sup>3)</sup> made of PP-fabric 70 g/m<sup>2</sup> + 20 g/m<sup>2</sup> coating, double seam

**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. 85 cm (lowest size) resp. 195 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 70 cycles of load application to  $P_c = 40 \text{ kN}$  (4080 kg) no visible damages occurred in the test piece. The load has then been increased until failure. On reaching a load of  $P_b = 64,1 \text{ kN}$  (6530 kg) the body fabric tore through the discharge spout seam.

**Sample b** After 70 cycles of load application to  $P_c = 40 \text{ kN}$  (4080 kg) no visible damages occurred in the test piece. The load has then been increased until failure. On reaching a load of  $P_b = 65,3 \text{ kN}$  (6650 kg) the short leg of a webbing tore out of its attachment.

**Compression** **Sample c** After six hours compression by  $P_k = 50 \text{ kN}$  (5100 kg) no visible damages occurred in the test piece.

**Test result** *A safe working load SWL = 1000 kg / SF = 6:1 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 Rishi FIBC Solutions Pvt. Ltd.  
<sup>1)</sup> This certificate covers all FIBCs with heights of between 90 cm and 200 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.  
<sup>2)</sup> Raw material: Pure virgin polypropylene (statement of the manufacturer)  
<sup>3)</sup> "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 27.6.2022.

Competent Engineer

Ronald Clews



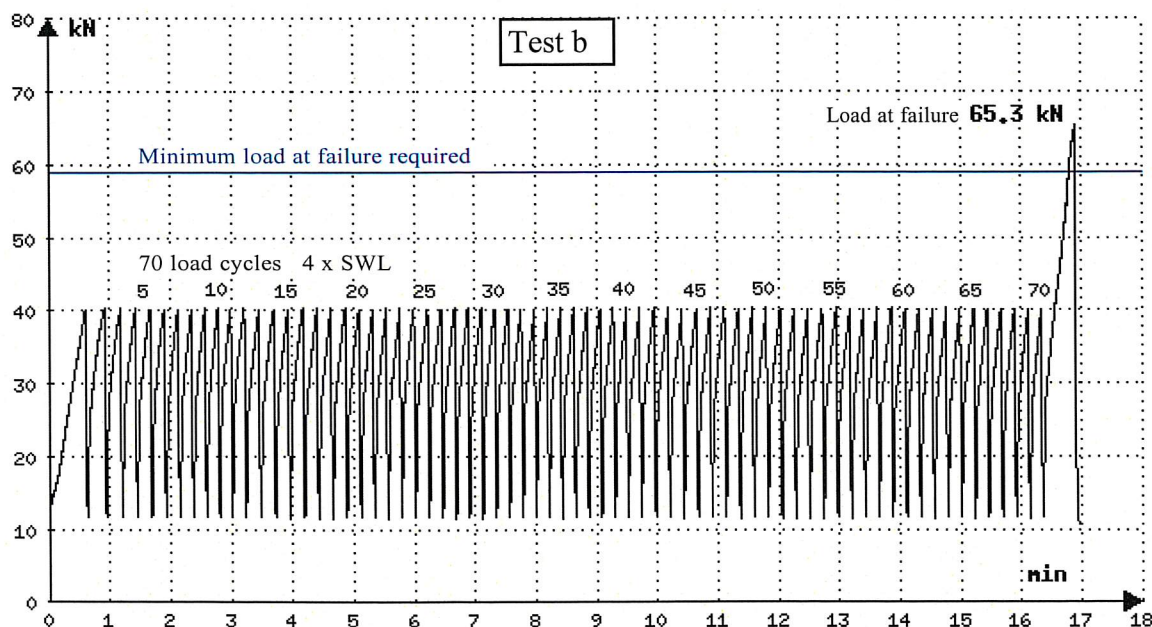
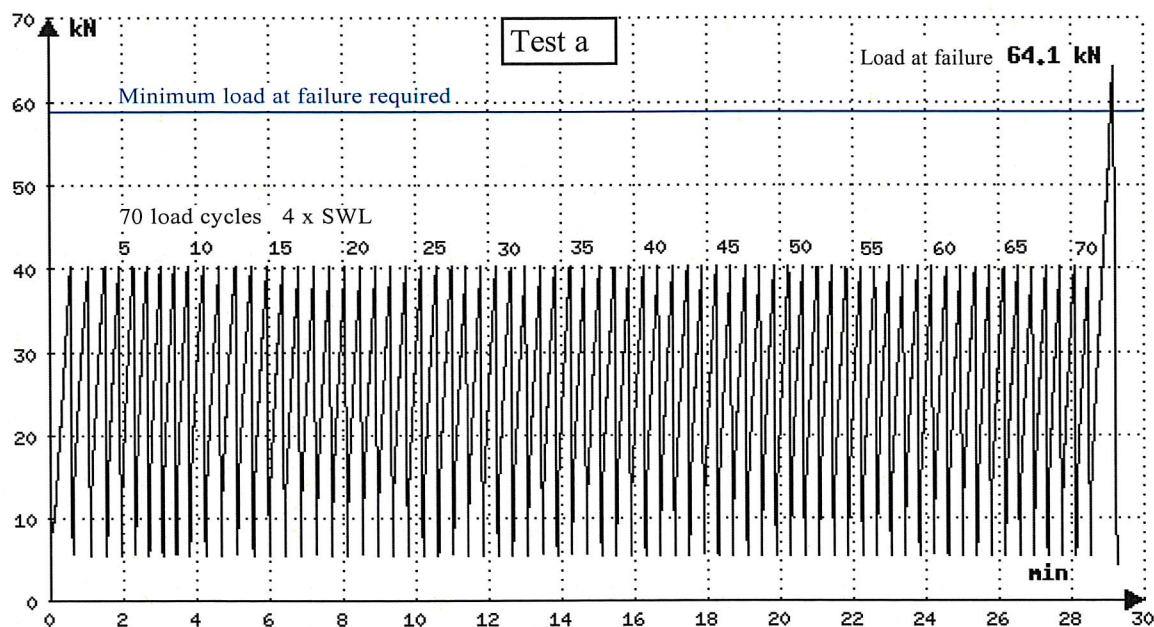
Head of Institute

Dr. Herbert Kielbassa





## FIBC - Cyclic top lift tests Test diagrams 11434.1 a + b / 19 - 6



### Project data

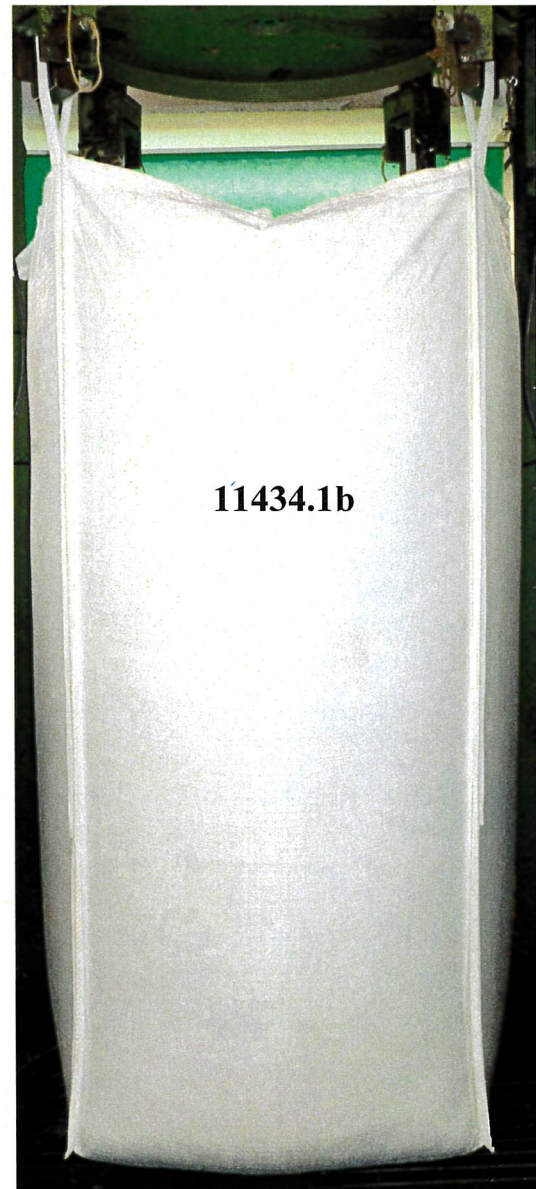
Applicant : Rishi FIBC Solutions Pvt. Ltd.  
Test piece a : FIBC 90 cm x 90 cm x 90 cm  
Test piece b : FIBC 90 cm x 90 cm x 200 cm  
Safe working load : SWL = 1000 kg  
Safety factor : SF = 6 : 1

### Test data

Test date : 27.6.2019  
Test Standard : ISO 21898  
Load at failure, test a :  $P_b = 64,1 \text{ kN} = 6530 \text{ kg}$   
Load at failure, test b :  $P_b = 65,3 \text{ kN} = 6650 \text{ kg}$

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## FIBC - Cyclic top lift tests Photos of the test samples



### Project data

Applicant : Rishi FIBC Solutions Pvt. Ltd.  
Test piece a : FIBC 90 cm x 90 cm x 90 cm  
Test piece b : FIBC 90 cm x 90 cm x 200 cm  
Safe working load : SWL = 1000 kg  
Safety factor : SF = 6 : 1

### Test data

Test date : 27.6.2019  
Test Standard : ISO 21898  
Load at failure, test a : Pb = 64,1 kN = 6530 kg  
Load at failure, test b : Pb = 65,3 kN = 6650 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.

<b>Allowed</b> (covered by this certificate)	<b>Not allowed</b> (not covered by this certificate)
Diameters of discharge spout smaller than <b>46 cm</b>	Diameters of discharge spout larger than <b>46 cm</b>
Base without discharge spout	
Base dimensions of between <b>90 cm x 90 cm</b> and <b>99 cm x 99 cm</b> provided the same geometry is maintained	Base dimensions smaller than <b>90 cm x 90 cm</b> Base dimensions larger than <b>99 cm x 99 cm</b>
Bag heights of between <b>90 cm</b> and <b>200 cm</b>	Bag heights smaller than <b>90 cm</b> Bag heights larger than <b>200 cm</b>
Re-use of the FIBCs*)	Re-use or repair of damaged FIBCs
Open top or any other design of top construction	Manufacture after expiry date of this certificate: <b>27.6.2022</b>

\*) Before re-use the FIBCs should be thoroughly examined for damage. When damage affecting the strength of the FIBCs is discovered, the FIBCs should be taken out of service immediately.

## Anchorage lengths of the webbings

Bag height (cm)	90	100	110	120	130	140	150	160	170	180	190	200
Short leg (cm)	40	40	40	40	40	40	40	40	40	40	40	40
Long leg (cm)	70	76	82	88	94	100	105	111	117	123	129	135

## 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)	
<b>SWL 1000 kg                      Safety Factor 6 : 1</b>	
Your logos etc.	<b>Test Certificate No</b> 11434.1/19-6
	<b>Test Certificate Date</b> 27.6.2019
	<b>Approved Laboratory</b> LABORDATA
	<b>Test Standard</b> ISO 21898
	<b>FIBC Class</b> Standard-duty re-usable
	<b>Date FIBC manufactured</b>
Handling Recommendations / Pictograms (proposals see <a href="http://www.labordata.com">www.labordata.com</a> )	
Supplier's Name & Address (if required)	