



# Test Certificate No. 9442.1/15-1

Date of test 6.1.2015  
Date of expiry 6.1.2018  
Number of pages 4 C / B

**Applicant** Reliance Petrochem Industries (Pvt) Ltd.  
Plot # FC-1, Eastern Industrial Zone, PQA, Karachi, Pakistan

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

**Design** **Manufacturer's type designation** 4CL-SL-FS-DS-98-131  
**Dimensions** (98 cm x 98 cm) x 131 cm **Volume** 1400 litres **Tare** 2250 g  
**Body fabric** Polypropylene 200 g/m<sup>2</sup>, uncoated, brown flat woven fabric layers without coloured characterization<sup>1)</sup>  
**Suspension** Four black PP-webbings (40 mm wide, 38 g/m), sewn flat into the vertical seams in a length of 40 cm / 80 cm, four additional ring-like black PP-webbings running through the main loops (loops in loops, length 30 cm, 40 mm wide, 38 g/m, 15 cm overlapping)  
**Details** Four vertical seams, two horizontal seams at the bottom (U-panel design) / overlock stitching / fabric folded in all the seams / top with filling spout<sup>2)</sup> / no inliner / discharge spout d = 45 cm<sup>2)</sup> made of PP- fabric 90 g/m<sup>2</sup>, uncoated, single seam, closed by rosette

**Kind of tests** *Cyclic top lift tests plus final load to failure, acc. ISO 21898, App. B*

**Test conditions** Charging with plastic granules (filling height approx. 125 cm), load application with piston and pressure plate (d = 100 cm), rate of load application 70 kN/min.

**Cyclic load and load to failure**  
**Test a** After 30 cycles of load application to **P<sub>c</sub> = 23 kN** (2340 kg) no visible damages occurred in the test piece. The load has then been increased until failure. On reaching a load of **P<sub>b</sub> = 58,8 kN** (5990 kg) a corner loop tore.  
**Test b** After 30 cycles of load application to **P<sub>c</sub> = 23 kN** (2340 kg) no visible damages occurred in the test piece. The load has then been increased until failure. On reaching a load of **P<sub>b</sub> = 50,2 kN** (5110 kg) a corner loop tore.

**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** Test diagrams see page 2. Photo of a test piece see page 3.  
<sup>1)</sup> Raw material: Pure virgin polypropylene (statement of the manufacturer)  
<sup>2)</sup> "Directions for use referring to this certificate" see page 4.  
A test piece is kept in our store for three years. This certificate expires on 6.1.2018.

Competent Engineer

Jorg Bartel



Head of Institute

Dr.-Ing. Kielbassa