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# सेन्ट्रल इंस्टिट्यूट ऑफ पेट्रोसायन इंजीनियरिंग एण्ड टेक्नोलॉजी

(रसायन एवं पेट्रोसायन विभाग, रसायन एवं उर्वरक मंत्रालय, भारत सरकार)

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## CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY

(Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India)

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### Plastics Testing Centre



No.: 0131979

### Test Certificate

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Date: 20.07.2021

Issued to: MIPA Industries,  
3, S No. 36/3/2,,  
Dagade farm Road Pisoli,  
Pune - 411 060

Ref : Your Letter No. Nil Dated : 13.04.2021

TEST REPORT AS PER:- IS 7903:2017 with latest amend.

PART A : PARTICULARS OF SAMPLE SUBMITTED

REPORT NO:2004056/2

- a) Name of the Sample : HDPE Tarpaulin (Woven Fabrics) as stated by party
- b) Grade/Variety/Type/Size/Class : Type -II
- c) Declared values, if any : Nil
- d) Code No. : Nil
- e) Batch No. and Date of Manufacture : Nil
- f) Quantity : HDPE Tape -2 BOBBINS, Unlaminated fabrics 1m x 1.85 m, LD Film-1m x1m, Laminated HDPE Tarpaulin(with seam join)-2m x 1.85m, Eyelets 10 Nos, Chord Beading 2 Mtr. as stated by party
- g) Mode of Packing : PE Cover
- h) Seal : Nil
- i) Any other information : Samples received on 21.04.2021
- j) Date of initiation of Testing : 10.06.2021
- k) Date of completion of Testing : 20.07.2021

PART B : SUPPLEMENTARY INFORMATION

- a) Reference to sampling Procedure : Nil
- b) Supporting documents for the measurement taken and result derived : Nil
- c) Deviation from the test method as prescribed: in relevant work instructions, if any : Nil
- d) Statement of conformity as per the test result obtained : As per Part-C
- e) Decision Rule applicable or not : Nil



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चेरलापल्ली, हैदराबाद - ५०० ०५९.

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PART - C

#### TEST RESULTS

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(As per IS: 7903-2017 with latest Amend.)

S.No	Clause	Name of the test	Test Method	Specified requirement	Results Obtained
1.	3.1	HDPE TAPE			
2.	3.2	1) Carbon Black Content (%) Fabric	IS: 2530 IS-7903-2017	2.5 (min) Shall be manufactured from HDPE fabric	2.62 HDPE Confirmed
3.	3.3	Eyelets Size	IS: 4084	Shall be 28 or 30	28
		Dimensions of Eyelets			
		i) Starting thickness of metal Aluminium (min) (mm)		0.71 mm (Min)	0.73
		ii) Outside dia of flange 'A' (mm)		23.8 mm ± 0.1	23.81
		iii) Flange formed height 'B' (mm)		1.4 ± 0.1	1.46
		iv) Pierced dia 'C' (mm)		11.9 ± 0.1	11.93
		v) Overall length 'D' (mm)		7.9 ± 0.1	7.96
		vi) Internal dia of Barrel when closed 'E' min (mm)		12.7 (Min)	12.82
		vii) Thickness of compressed material between eyelet and washer 'F' max (mm)	IS 4084 Table 1 & 3	4.0 (Max)	3.90
		viii) Outside diameter of barrel under the flange 'G' (mm)		17.3 ± 0.1	17.35
		Dimensions of turnover washer			
		i) Starting thickness of metal Aluminium (min) (mm)		0.45 mm (Min)	0.48
		ii) Overall diameter of formed washers 'A' (mm)		23.8±0.1	23.82
		iii) Pierced dia 'B' (mm)		14.7±0.1	14.78
		iv) Height of formed washer 'C' (mm)		2.4 mm Min	2.46
		v) Dimension 'D' (mm)		20.6±0.1	20.66
4.	3.4	Line/cord Beading (mm)	IS-7903-2017	Line/cord Beading min. 2.5mm diameter shall be provided along the length and width of the tarpaulin.	3.6 Confirmed
	5.0	Manufacture			
5.	5.1	Laminating film Visual Observation	IS-7903-2017	The fabric shall be laminated on both sides with low density polyethylene or suitable combination of LDPE/LLDPE melt of coating grade on each side.	Combination of LDPE/LLDPE Satisfactory
		Coating thickness (µm)		25 µm (min)	28.0
	5.1.1	Carbon Black Content (%)	IS: 2530	Shall contain minimum 2.5% Carbon Black by mass	2.58
6.	5.1.2	No. of layers of fabric	IS-7903-2011	In case of two or more layers of HDPE fabrics are used to manufacture Tarpaulin they will be joined by sandwich lamination.	More than two layers
		Sandwich Laminated thickness (µm)		40 µm (min)	48



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S.No	Clause	Name of the test	Test Method	Specified requirement	Test value Obtained
7.	5.2 5.2.1	Construction	IS-7903-2011	The tarpaulins shall be constructed by heat sealing laminated pieces of woven fabric for obtaining the desired dimension. The panels shall be flat (lap) joined. The ends and sides of the tarpaulins shall be hemmed by heat sealing or double stitching.	Confirmed By heat sealing
		i) Panel (Length*width)			
		ii) Width of the hem (mm)			
		iii) Cross joint		Cross joint may be used at the rate of one in every third panel, and no piece less than 900mm in length shall be used for making the panel, the cross joint shall be made by lap joint method with a minimum 40 mm overlap. A combination of panel width not less than 1800 mm may be used to obtain the desired width of tarpaulin.	Confirmed Panel width-1850 mm
				Narrow width panels, not less than 250mm may be used at the rate of one per tarpaulin to obtain the required width. In all cases, the end panels shall be of full width except where the width of the tarpaulin is less than 2m, in which case one of the end panels may be less than the full width, the alternate short panels for cross joint shall be in the opposite ends.	Confirmed
8.	5.3	Joints/Seams (cm) (overlap distance)	IS-7903-2011	Minimum 3.5	4.42
9.	5.4	Fixing of Eyelets	IS-7903-2011	The eyelets shall be provided with the reinforcement pieces for type I tarpaulins only. For tarpaulins of Type Type II to Type VII, reinforcement pieces shall be provided at four corners only. However, if required by the buyer, eyelets shall be provided with the reinforcement pieces for Type II to Type VII tarpaulins also. The outer edge of the eyelet shall be as close as possible to the line/cord beading	Type II Reinforcement piece provided.  Confirmed
10.	6.2	Dimension Length (mm) Width (mm)  Tolerance on (i) Length (%) (ii) Width (%)	IS-7903-2011	7315.2 (Declared by party) (24ft) 5486.4 (Declared by party) (18ft)  +3/-1 +3/-1	7370.0 5515.0  +0.74 +0.52





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**TEST RESULTS**  
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S.No	Clause	Name of the test	Test Method	Specified requirement	Test value Obtained	
11	6.1, Table 1					
	Sl No (i)	No. of HDPE fabric layers	IS-7903-2017	2 layer	2	
	Sl No (ii)	No. of lamination layers	IS-7903-2017	3 layers	3	
	Sl No (iii)	Total number of layers in the finished tarpaulin	IS-7903-2017	5 layers	5	
	Sl No (iv)	Mass of finished tarpaulin, (g/m <sup>2</sup> )	IS 7903 Annex B	Min. 250	260	
	Sl No (v)	Mass of laminated fabric (g/m <sup>2</sup> )	IS 7903 Annex C	Min. 230	235	
	Sl No (vi)	Breaking Strength Before U.V. Exposure	c) Warp (N)	IS- 1969 (Pt.1)	1100 (min)	1300
					d) Weft (N)	900 (min)
	Sl No (vii)	Elongation at Break	c) Warp (%)	IS- 1969 (Pt.1)	15 to 25	17
					d) Weft (%)	15 to 25
	Sl No (viii)	Retention of Breaking Strength After U.V. Exposure of 144 hrs	c) Warp (N)	IS13162 Pt.2 & IS:1969 (pt.1)	85 % of original value(fabric), that is Sl.No(vi) of Table 1	1150 (88.4%)
						d) Weft (N)
	Sl No (ix)	Welded Seam Strength (N) Before UV Exposure (weft), Min.	IS1969 (pt.1)	65 % of original value(fabric), that is Sl.No (vi) of Table 1	770.0 (70%)	
	Sl No (x)	Retention of Welded Seam Strength (N) (Weft), Min. After UV Exposure of 144 hrs	IS13162 Pt.2 & IS:1969 (pt.1)	85 % of original value(fabric), that is Sl.No(ix) of Table 1	686.0 (89%)	
Sl No (xi)	Tarpozoid Tear Strength (N)	IS 14293	130 (min)	148		
Sl No (xii)	Puncture resistance (N)	IS 7903 Annex D	350 (min)	362		
Sl No (xiii)	Impact failure load, at 1524mm drop, min, gram force at 50% failure (gf)	IS 7903 Annex E	800 (min)	1050		
Sl No (xiv)	Ash content (%)	IS 7903 Annex F	Max.3	1.6		



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S.No	Clause	Name of the test	Test Method	Specified requirement	Test value Obtained
12	6.3	Water Proofness			
	6.3.1	Water proofness Before Ageing	IS-7940	There should be no leakage through Tarpaulin	Confirmed
	6.3.1	Water Repellency Before Ageing	IS:7941	There should be no leakage through Tarpaulin	Confirmed
	6.3.2	Water proofness After Ageing at 70°C for 168 hrs.	IS-7016 (pt.8)	There should be no leakage through Tarpaulin	Confirmed
	6.3.2	Water Repellency After Ageing @ 70° C for 168 Hours	IS:7941	There should be no leakage through Tarpaulin	Confirmed

PART D: REMARKS : Nil

- NB:
1. This Test Report/Certificate is issued only for the samples submitted to CIPET.
  2. The results stated above related only to the items tested
  3. The report shall not be reproduced in full/part without written approval of the laboratory.
  4. The quality of the subsequent production lot has to be ensured by the purchaser.
  5. Any anomaly/discrepancy in this report should be brought to the notice of CIPET within 30 days from the date of issue

**AUTHORISED SIGNATORY**