

Laboratory Indian Institute of Packaging, Kolkata Centre, Block CP-10, Sector-V,  
Salt Lake City, Bidhan Nagar, Kolkata, West Bengal

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6788 (in lieu of T-3722)

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Validity 21.12.2017 to 20.12.2019

Last Amended on 12.01.2018

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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**MECHANICAL TESTING**

I.	PAPER & PAPER PRODUCTS			
1.	Paper, Paperboard, Corrugated Fibre Board Box, Multiwall Paper Sack	Thickness	IS 1060 (Part 1): 1966 (RA 2014), Cl.7	0.03 mm to 1.0 mm (30µm to 1000µm)
		Bulk	IS 1060 (Part 1): 1966 (RA 2014), Cl.8	0.5 cc/gm to 5 cc/gm
		Grammage/ Substance	IS 1060 (Part 1): 1966 (RA 2014), Cl.6.	10 g/m <sup>2</sup> to 600 g/m <sup>2</sup>
		Bursting Strength of Paper & Paper Board	IS 1060 (Part 1): 1966 (RA 2014), Cl.12.5	1.6 kg/cm <sup>2</sup> to 8 kg/cm <sup>2</sup> 0.16 N/mm <sup>2</sup> to 0.78 N/mm <sup>2</sup>
		Burst Factor	IS 1060 (Part 1): 1966 (RA 2014), Cl.12.5.4	5 to 100
		Burst Index	IS 1060 (Part 1): 1966 (RA 2014) Cl.12.5.4	0.5 kPa.m <sup>2</sup> /g to 50 kPa.m <sup>2</sup> /g
		Cobb Test of Paper & Paperboard	IS 1060 (Part 1): 1966 (RA 2014) Cl.13.2.2.	1 g/m <sup>2</sup> to 100 g/m <sup>2</sup> for 1 min & 5 min
		Ash Content	IS 1060 (Part 1): 1966 (RA 2014) Cl.11.	0.1 % to 50 %
		Moisture Content of Paper	IS 1060 (Part 1): 1966 (RA 2014) Cl.9.	0.1 % to 20 %
		Ring Crush	IS 4006 (Part 1): 1985 (RA 2013) Cl.11	0.1 kg/cm to 10 kg/cm
		Folding Endurance	IS 1060 (Part 1): 1966 (RA 2014) Cl.12.6	1 Count to 1000 Counts
		Breaking Length	IS 1060 (Part 1): 1966 (RA 2014) Cl.12.4	1 m to 7000 m
		Tensile Strength of Paper	IS 1060 (Part 1): 1966 (RA 2014) Cl.12.3	1 kgf/cm to 20 kgf/cm.
		Elongation At Break	IS 1060 (Part 1): 1966 (RA 2014) Cl.12.3	1 % to 10 %

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		Tensile Index	IS 1060 (Part 1): 1966 (RA 2014) Cl.12.3.5.2	10 Nm/g to 50 Nm/g
		Tear Strength	IS 1060 (Part 1): 1966 (RA 2014) Cl.12.7	10 gf to 750 gf 100 mN to 7500 mN
		Tear Index	IS 1060 (Part 1): 1966 (RA 2014) Cl.12.7.5	0.10 mN.m <sup>2</sup> /g to 50 mN.m <sup>2</sup> /g
		Tear Factor	IS 1060 (Part 1): 1966 (RA 2014) Cl.12.7.5	10 to 100
		Brightness	IS/ISO 2470-1:2009 (RA 2013)	1 % to 100%
		Opacity	IS/ISO 2471:2008 (RA 2013)	1% to 100%
		Scuff Proofness	IS 4006 (Part 1): 1985 (RA 2013) CL.9	Qualitative Visual
		Stiffness	TAPPI/ANSI T 489 om - 13	0.5 N-cm to 10 N-cm 50 gf-cm to 1000 gf-cm (Taber )
		Number of Ply	IS 2771 (Part 1): 1990 (RA 2013) Cl.4.1	Qualitative Visual
		Internal/ External Dimension	IS 2771 (Part 1): 1990 (RA 2013) CL.6	10 mm to 1000 mm
		Combined Internal Dimension	IS 2771 (Part 1): 1990 (RA 2013) CL.6	50 mm to 2000 mm
		Style Of Box	IS 6481:1971 (RA 2013)	Qualitative Visual
		Type Of Flute	IS 2771 (Part 1): 1990 (RA 2013) CL.4.2	Qualitative Visual
		Cobb Test of CFB	IS 4006 (Part 1): 1985 (RA 2013) Cl.6	1 to 500 g/m <sup>2</sup> for 30 min
		Moisture Content of CFB Box	IS 1060 (Part 1): 1966 (RA 2014) Cl.9	0.2 % to 20 %
		Edge Crush	IS 7063 (Part II): 1976 (RA 2013)	1 kg/cm to 10 kg/cm
		Flat Crush	T 808 om-13	0.20 kg/cm <sup>2</sup> to 10 kg/cm <sup>2</sup>

Neeraj Verma  
Convenor

N. Venkateswaran  
Program Director

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		Grammage/ Substance of CFB Box	IS 7063 (Part IV): 1976 (RA 2013)	10 g/m <sup>2</sup> to 600 g/m <sup>2</sup>
		Bursting Strength of CFB Box	IS 1060 (Part 1): 1966 (RA 2014) CI.12.5	5 kg/cm <sup>2</sup> to 40 kg/cm <sup>2</sup> (0.5 N/mm <sup>2</sup> to 4.0 N/mm <sup>2</sup> )
		Puncture Resistance	IS 4006 (Part 2): 1985 (RA 2013) CI.8	1.5 Joule to 350 Joule (50 Ozs Inch/Tear Inch to 1500 Ozs Inch/Tear Inch)
		Compression Strength	ASTM: D642 - 15	10 kgf to 1000 kgf 100 kN to 10 kN
		Drop	IMDG CODE (Chapter 6.1) ICAO/IATA (Section 6)	0.80 m to 1.80 m (Height)
		Vibration	IS 7028 (Part 2): 2002	180 RPM to 350 RPM 01 Inch Amplitude
<b>II.</b>	<b>PLASTIC &amp; POLYMERS</b>			
<b>1.</b>	<b>Plastic Films, Flexible, Plastic Sheets, Moulded Components &amp; Allied Products</b>	Thickness	IS 2508:2016 Appendix A Cl 5.2.2	0.01 mm to 1.0 mm
		Seal Strength	ASTM :F88/F88M-15	0.5 N to 100 N
		Bond Strength	ASTM :D 903:98 (Reapproved 2010)	0.5 N to 100 N
		Melt Flow Index	ASTM :D 1238:13	0.1g/10 min to 50 g/10 min
		Tensile Strength	IS 13360 (Part 5/Sec 1): 1996 (RA 2013)	0.5 N/mm <sup>2</sup> to 150 N/mm <sup>2</sup>
		Elongation at Break	IS 13360 (Part 5/Sec 1): 1996 (RA 2013)	10 % to 1000 %
		Dart Impact Test	IS 13360 (Part 5/Sec 6): 1999 (RA 2015)	50 g to 1000 g
		Oxygen Gas Transmission Rate	ASTM :D1434- 82 (RA 2015)	0.1 to 500 cc/[m <sup>2</sup> x atm x day]
		Co-Efficient of Friction Static & Dynamic Kinetic	ASTM: D1894-14	0.01 to 1 0.01 to 1

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		Water Vapour Transmission Rate	ASTM F-1249-13	0.000 to 18 g/m <sup>2</sup> /day (unmask) 0.000 to 180 g/m <sup>2</sup> /day (mask)
		Tear Strength	ASTM D1922-15	100mN to 7500 mN
		Haze	ASTM D1003-13	1 % to 100%
		Overall Migration	IS 9845 :1998 (RA 2015)	00.01 mg/dm <sup>2</sup> to 10 mg/dm <sup>2</sup> & 0.10 ppm to 60 ppm
		Handle Strength	IS 6312:1994 (RA 2015) Cl. 8.7	Qualitative
		Closure Leakage Test (Keeping on Floor)	IS 6312:1994 (RA 2015) Cl. 8.3 Annex. D	Qualitative
		Closure Leakage	IS 2798:1998 (RA 2013) Cl.6.1 & IS 7959:1987 (RA 2013) Cl. 10.1.1 (App. A)	Qualitative
		Drop	IS 6312:1994 (RA 2015) Cl.8.4.1	Qualitative
		Drop	IMDG CODE (Chapter 6.1) ICAO/IATA (Section 6)	0.80 m to 01.80 m Height
		Vibration	IS 7028 (Part 2): 2002	180 RPM to 350 RPM 01 Inch Amplitude
		Hydraulic Pressure	IMDG CODE (Chapter 6.1) ICAO/IATA (Section 6)	0.1 kg/cm <sup>2</sup> to 07.00 kg/cm <sup>2</sup>
		Air Leakage	IMDG CODE (Chapter 6.1) ICAO/IATA (Section 6)	00.1 kg/cm <sup>2</sup> to 07.00 kg/cm <sup>2</sup>
		(-) 18 °C Temperature	IMDG CODE (Chapter 6.1) ICAO/IATA (Section 6)	(-) 19 °C to 0 °C
III.	<b>TEXTILE MATERIALS</b>			
1.	<b>Fabrics (Woven &amp; Non Woven)</b>	Breaking Load	IS 1969 (Part 1) : 2009 (RA 2014)	200 N to 5000 N
		Seam Strength	IS 9030:1979 (RA 2014)	200 N to 5000 N

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2.	Metal Drum	Drop	IMDG CODE (Chapter 6.1) ICAO/IATA (Section 6)	0.80 m to 01.80 m Height
		Vibration	IS 7028 (Part 2): 2002	180 RPM to 350 RPM 01 Inch Amplitude
		Hydraulic Pressure	IMDG CODE (Chapter 6.1) ICAO/IATA (Section 6)	0.1 kg/cm <sup>2</sup> to 07.00 kg/cm <sup>2</sup>
		Air Leakage	IMDG CODE (Chapter 6.1) ICAO/IATA (Section 6)	0.1 kg/cm <sup>2</sup> to 07.00 kg/cm <sup>2</sup>