

**Laboratory** Ashapura International Limited, Testing Laboratory, Survey No. 65,  
Village-Hamla, Taluka-Mandvi, District-Kutch, Gujarat

**Accreditation Standard** ISO/IEC 17025: 2005

**Certificate Number** TC-7808

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**Validity** 30.08.2018 to 29.08.2020

**Last Amended on --**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
<b><u>MECHANICAL TESTING</u></b>				
<b>I.</b>	<b>SOIL &amp; ROCK</b>			
<b>1.</b>	<b>Bentonite</b>	Moisture Content	IS 12446 (Annexure A-3)	5 % to 20 %
		Dry Fineness (63 µm)	IS 12446 (Annexure A-2)	80 % to 100 %
		Free Swelling Capacity	IS 12446 (Annexure A-7)	10 ml to 40 ml
		Plate Water Absorption	ASTM E 946	400 % to 750 %
		Cation Exchange Capacity (Methylene Blue Requirement)	IS 12446 (Annexure A-10)	300 mg/g to 450 mg/g
		Fann Viscosity	API 13A / ISO 13500	20 cp to 50 cp
		Filter Volume	API 13A / ISO 13500	12 ml to 20 ml
		Liquid Limit	IS 2720 (Part 5)	150 % to 700 %
		Gel Formation Index	IS 12446 (Annexure A-6)	25 ml to 100 ml
		Gelling Time	IS 12446 (Annexure A-8)	1 minute to 5 minute
		Marsh Funnel Viscosity	API RP 13.B1 (Clause 6) ISO 10414-1	10 s to 960 s
		Green Compressive Strength	IS 12446 (Annexure A-12)	200 g/cm <sup>3</sup> to 2000 g/cm <sup>3</sup>
		Wet Tensile Strength	AIL / HML / STP / 13 Issue 01 / Date 14-07-2018	0.01 N/cm <sup>2</sup> to 0.55 N/cm <sup>2</sup>