Hamza Raees **Test Performed By:** Dr. /Engr. Bilal A. Khokhar Chief Executive, Liewell Capsules (Pvt) Ltd. Lahore **SOM Lab** Client Reference: 524(Page-1/1) nil Ref: Dated: 2503-2019 Dated: 2103-2019 **Tension Test & Bend Test** Test: **Test Specification: ASTM-A-615 Deformed Gauge Length:** 8 inch Sample Type: Bar **Ultimate Yield Stress** Dia. Yield **Ult. Stress** Area %age Elongation **Gauge Length** Load Load (according to nominal area) (according to nominal area) (according to measured area) (according to measured area) Elongation Remarks Weight Calculated Calculated S.No. Nominal Nominal in<sup>2</sup> in<sup>2</sup> % lb/ft in Tons **Tons** psi psi psi psi in 0.989 0.79 0.768 37.23 74790 1 2.612 26.79 76930 103930 106910 1.10 8.0 13.8 2 2.614 8 0.989 0.79 0.768 27.19 36.49 75900 78070 101880 104800 1.10 8.0 13.8 --------------**BEND TEST:** #8 Sample bend through 180 degrees Satisfactorily without any crack Note:-**Only Three Samples** Received and Tested

Hamza Raees **Test Performed By:** Dr. /Engr. Bilal A. Khokhar Chief Executive, Liewell Capsules (Pvt) Ltd. Lahore **SOM Lab** Client Reference: 524(Page-1/1) nil Ref: Dated: 2503-2019 Dated: 2103-2019 **Tension Test & Bend Test** Test: **Test Specification: ASTM-A-615 Deformed Gauge Length:** 8 inch Sample Type: Bar **Ultimate Yield Stress** Dia. Yield **Ult. Stress** Area %age Elongation **Gauge Length** Load Load (according to nominal area) (according to nominal area) (according to measured area) (according to measured area) Elongation Remarks Weight Calculated Calculated S.No. Nominal Nominal in<sup>2</sup> in<sup>2</sup> % lb/ft in Tons **Tons** psi psi psi psi in 0.989 0.79 0.768 37.23 74790 1 2.612 26.79 76930 103930 106910 1.10 8.0 13.8 2 2.614 8 0.989 0.79 0.768 27.19 36.49 75900 78070 101880 104800 1.10 8.0 13.8 --------------**BEND TEST:** #8 Sample bend through 180 degrees Satisfactorily without any crack Note:-**Only Three Samples** Received and Tested

Sajid Mahmood **Test Performed By:** Dr. /Engr. Bilal A. Khokhar

**Manager Construction Projects, Allied Bank** 

**Tension Test & Bend Test** 

**SOM Lab** 

HOL/Engg C.P./SM/2019 529(Page-1/1) **Client Reference:** Ref: Dated: 25-03-2019

21-03-2019 Dated:

**ASTM-A-615** 

**Test Specification: Deformed** 

**Sample Type:** Gauge Length: 8 inch Bar

	Dia.		ia. Area				Yield Ultimate	Yield	Stress	Ult. S	tress		<b>a</b> .	u	
S.No.	Weight	Nominal	Calculated	Nominal	Calculated	Load	Load	(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)	Elongation	Gauge Length	%age Elongation	Remarks
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	0.678	4	0.503	0.20	0.199	6.39	8.72	70480	70840	96110	96590	1.00	8.0	12.5	
2	0.654	4	0.494	0.20	0.192	6.52	8.79	71940	74940	96900	100930	0.90	8.0	11.3	
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Witnessed By:					Rachir	ADI									

Witnessed By: Hanif Bashir, ABL

## **BEND TEST:**

Test:

	# 4	Sample bend through 180 degrees Satisfactorily without any crack	Note:-
_			
			Only Three Samples
			Received and Tested

Muhammad Iqbal Sajid Test Performed By: Dr. /Engr. Sasad Ali Gillani

**Project Manager, Lahore Motorway City** 

**SOM Lab** 

 Client Reference:
 nil
 Ref:
 530(Page-1/1)

 Dated:
 25-03-2019
 Dated:
 25-03-2019

**Deformed** 

Gauge Length: 8 inch Sample Type: Bar

		D	ia.	Α	rea	Yield	Ultimate	imate Yield Stress		Ult. S	tress		_	u	
S.No.	Weight	Nominal	Calculated	Nominal	Calculated	Load	Load	(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)	Elongation	Gauge Length	%age Elongation	Remarks
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	1.479	6	0.744	0.44	0.435	11.21	16.89	56210	56850	84670	85640	1.60	8.0	20.0	
2	1.487	6	0.746	0.44	0.437	13.46	20.36	67450	67910	102040	102740	1.40	8.0	17.5	
3	0.661	4	0.497	0.20	0.194	6.01	8.38	66320	68370	92400	95260	1.30	8.0	16.3	
4	0.654	4	0.494	0.20	0.192	5.71	8.15	62950	65570	89930	93680	1.40	8.0	17.5	
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## **BEND TEST:**

# 6	Sample bend through 180 degrees Satisfactorily without any crack	Note:-
# 4	Sample bend through 180 degrees Satisfactorily without any crack	
		Only Six Samples
		Received and Tested

Muhammad Sarfraz Test Performed By: Dr. /Engr. Gillani

Lahore

**SOM Lab** 

 Client Reference:
 Nil
 Ref:
 531(Page-1/1)

 Dated:
 25-03-2019
 Dated:
 25-03-2019

Test: Tension Test Test Specification: ASTM-A-615

**Deformed** 

Gauge Length: 8 inch Sample Type: Bar

		D	ia.	Α	rea	Yield	Ultimate	Yield	Stress	Ult. S	Ult. Stress		_	u	
S.No.	Weight	Nominal	Calculated	Nominal	Calculated	Load	Load	(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)	Elongation	Gauge Length	%age Elongation	Remarks
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	1.521	6	0.754	0.44	0.447	15.31	20.23	76750	75540	101420	99840	1.30	8.0	16.3	
2	0.643	4	0.491	0.20	0.189	6.37	8.05	70260	74350	88800	93970	0.90	8.0	11.3	
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## **BEND TEST:**

 No Bend test performed	Note:-					
	Only Two Samples					
	Received and Tested					

Safdar Hussain **Test Performed By:** Dr. /Engr. Bilal A Khokhar

Resident Engineer, ACE, Danish School Mankera Residency

**Tension Test & Bend Test** 

**SOM Lab** 

ACE/RE-PDS/MNK/BHK/19/200 532(Page-1/1) **Client Reference:** Ref: Dated: 25-03-2019

Dated: 20-03-2019

Test:

**Test Specification: ASTM-A-615** 

**Deformed** 

Gauge Length: **Sample Type:** 8 inch Bar

		Dia. Area		rea	Yield	Ultimate	Yield	Stress	Ult. S	tress			ב		
S.No.	Weight	Nominal	Calculated	Nominal	Calculated	Load	Load	(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)	Elongation	Gauge Length	%age Elongation	Remarks
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	1.035	5	0.622	0.31	0.304	9.81	13.53	69770	71150	96240	98140	0.80	8.0	10.0	
2	1.036	5	0.622	0.31	0.304	9.12	12.84	64910	66190	91380	93180	1.00	8.0	12.5	
3	0.674	4	0.502	0.20	0.198	5.50	8.33	60700	61320	91840	92770	1.20	8.0	15.0	
4	0.665	4	0.498	0.20	0.195	5.45	8.26	60140	61680	91050	93390	1.30	8.0	16.3	
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## **BEND TEST:**

# 5	Sample bend through 180 degrees Satisfactorily without any crack	Note:-
# 4	Sample bend through 180 degrees Satisfactorily without any crack	
		Only Six Samples
		Received and Tested