

LAMPIRAN

Dokumentasi



1.1 Tanaman Sisal



1.2 Pemambilan daun sisal



1.3 Pengupasan daun sisal



1.4 Penyisiran daun sisal



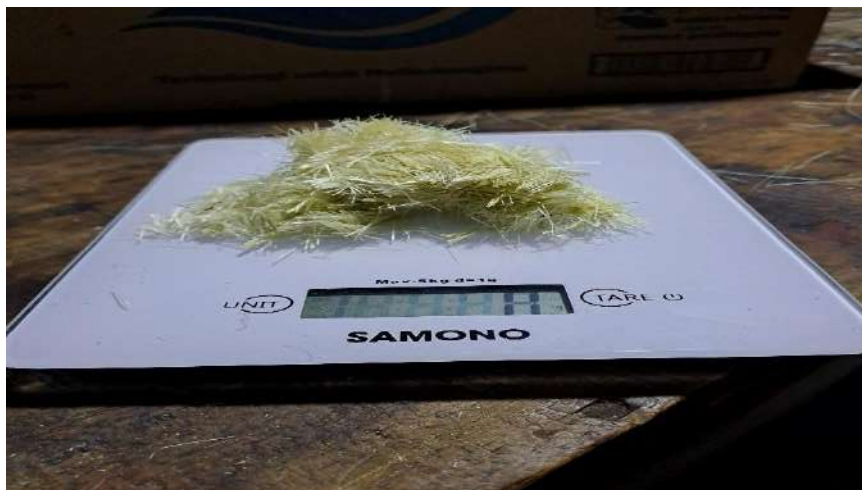
1.5 Pengeringan serat



1.6 Pembuatan cetakan



1.7 Pemotongan serat sisal 1-5cm



1.8 Menimbang berat sisal sesuai spesifikasi pengujian



1.9 Persiapan cetak spesimen



2.0 Proses pencetakan



2.1 Hasil Cetakan



2.2 Hasil potongan spesimen impact dan bending



2.3 Alat Uji bending



2.4 Spesimen bending



2.5 Proses pengujian bending



2.6 Spesimen impact



2.7 Proses pengujian impak

Jadwal Penelitian

No.	Urutan Penelitian	Bulan - ke					
		I	II	III	IV	V	VI
1	Proposal						
2	Persiapan Bahan						
3	Pembuatan Cetakan						
4	Pengambilan Data						
5	Pengelolaan Data						
6	Seminar Hasil						
7	Ujian Tutup						



KEMENTERIAN KETENAGAKERJAAN RI
DIREKTORAT JENDERAL
PEMBINAAN PELATIHAN VOKASI DAN PRODUKTIVITAS
BBPVP Makassar

JL. Taman Makam Pahlawan No. 4 Makassar Telepon (0411) 442322 Faksimile 441558
Laman <http://www.naker.go.id>

SURAT KETERANGAN

Nomor : B. 91/ WORKSHOP LAS BBPVP - MKS/ VIII/ 2025

Yang bertandatangan dibawah ini :

Nama : Haeruddin Hafid, ST.,MT

NIP : 19770201 200912 1 001

Dengan Ini menerangkan bahwa :

No	Nama Mahasiswa	Judul Tugas Akhir
1	Ones Siporus Toding / 220212105	Pengaruh Presentase Serat Sisal Terhadap Kekuatan Tarik dan Struktur Makro Komposit Serat Sisal Bermatriks Polyster
2	Ignasius Rolan / 1224212005	Dampak Panjang Serat Sisal Terhadap Kekuatan Bending dan Ketangguhan Komposit Serat Sisal Bermatriks Polyester
3	Yusdar Menta / 124212006	Pengaruh Panjang Serat Terhadap Kekuatan Tarik dan Struktur Makro Komposit Serat Sisal Bermatriks Polyester
4	Junaedy Tandepadang / 1224212019	Study Pengaruh Orientasi Sudut Serat Sisal Terhadap Kekuatan Tarik dan Struktur Makro Komposit Serat Sisal Bermatriks Polyester

5	Leonard Alvin / 1224212016	Pengaruh Orientasi Sudut Terhadap Kekuatan Bending dan Ketangguhan Komposit Serat Sisal Bermatriks Polyester
6	Desar Susanto / 1224212007	Pengaruh Lama Perendaman Serat Sisal Terhadap Kekuatan Tarik dan Struktur Makro Komposit Serat Sisal Bermatriks Polyester
7	Arclaus Denni Frissi / 220212107	Efektifitas Presentase Serat Sisal Terhadap Kekuatan Bending dan Ketangguhan Komposit Serat Sisal Bermatriks Polyester

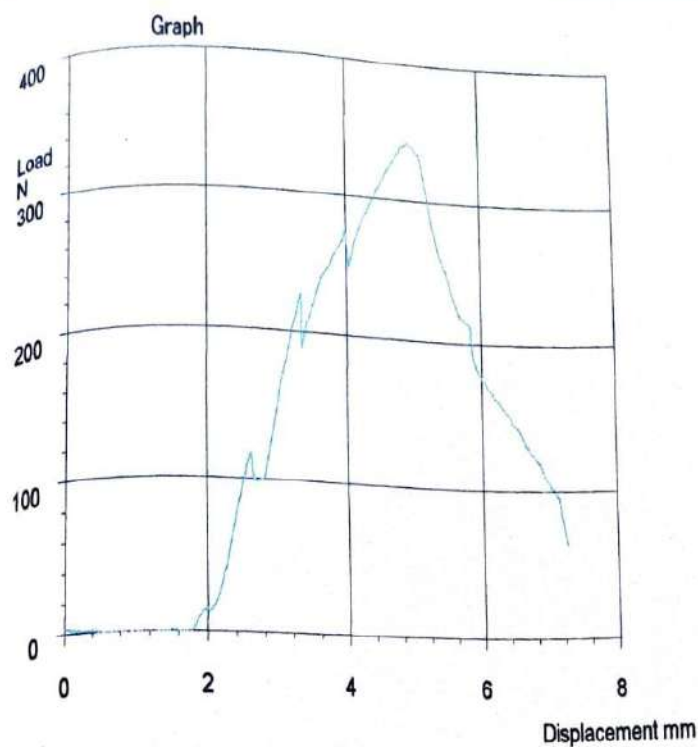
Bahwa benar telah melaksanakan Pengujian di Workshop Las Balai Besar Pelatihan Vokasi dan Produktivitas Makassar pada tanggal 12-13 Agustus 2025

Demikian surat keterangan ini kami berikan, untuk dipergunakan sebagai mana mestinya.

Makassar, 13 Agustus 2025

Haeruddin Hafid, ST.,MT.

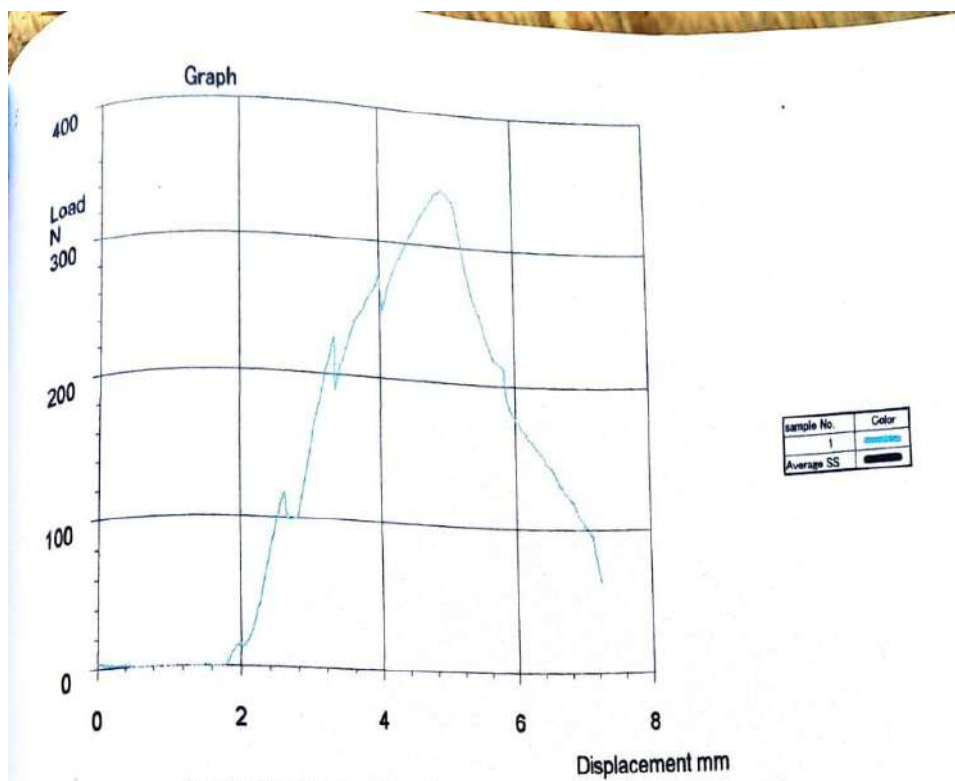
NIP. 19770201 200912 1 001



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0 0 0	Point data(Disp)	0 0 0
	N 0 0 0		mm 0 0 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 1 cm, 2A

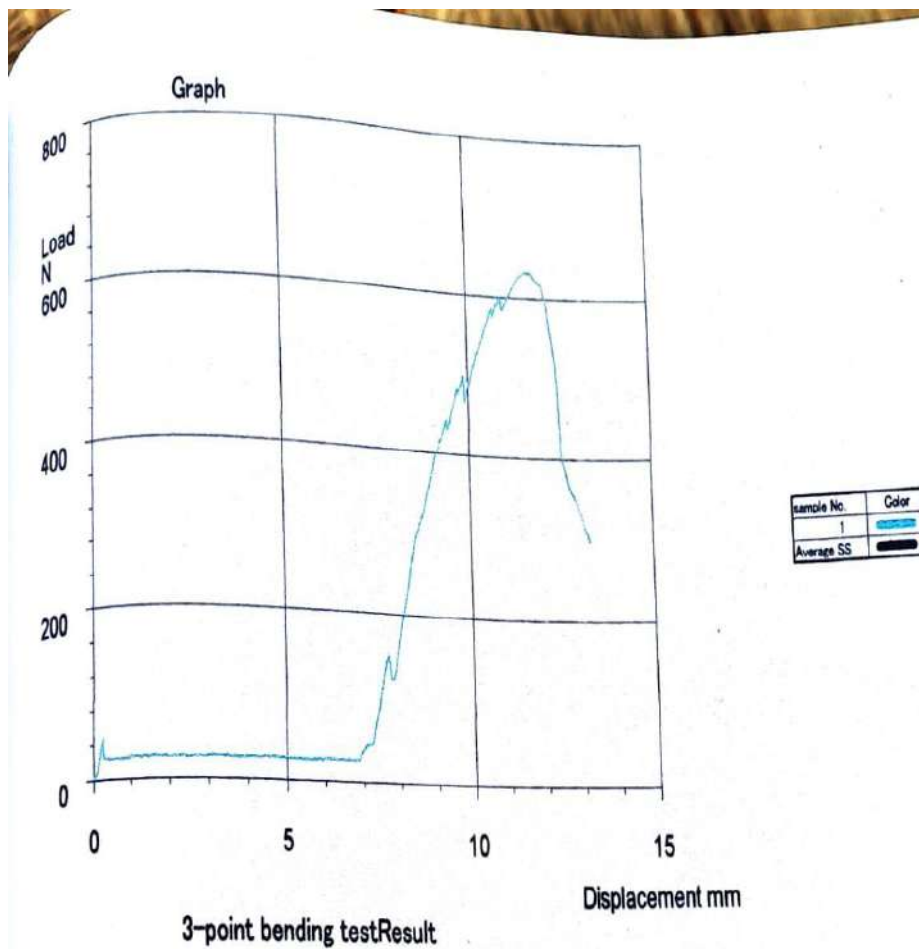
TestID=3891	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load	Displacement
1	20.000	10.000	200.00	343.43	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0: 0: 0	Point data(Disp)	0: 0: 0
N	0: 0: 0	mm	0: 0: 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init load 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 1 cm, 2A

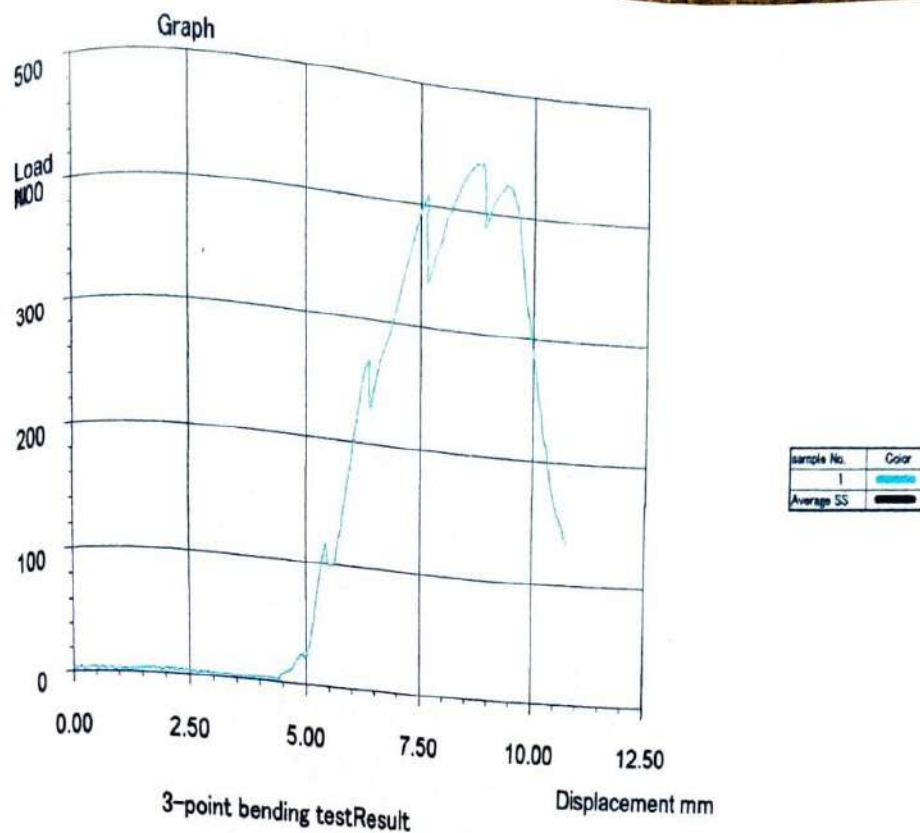
TestID=3891	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load	Displacement
				N	mm
1	20.000	10.000	200.00	343.43	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0 0 0	Point data(Disp)	0 0 0
N	0 0 0	mm	0 0 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measure	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 1 cm, 3A

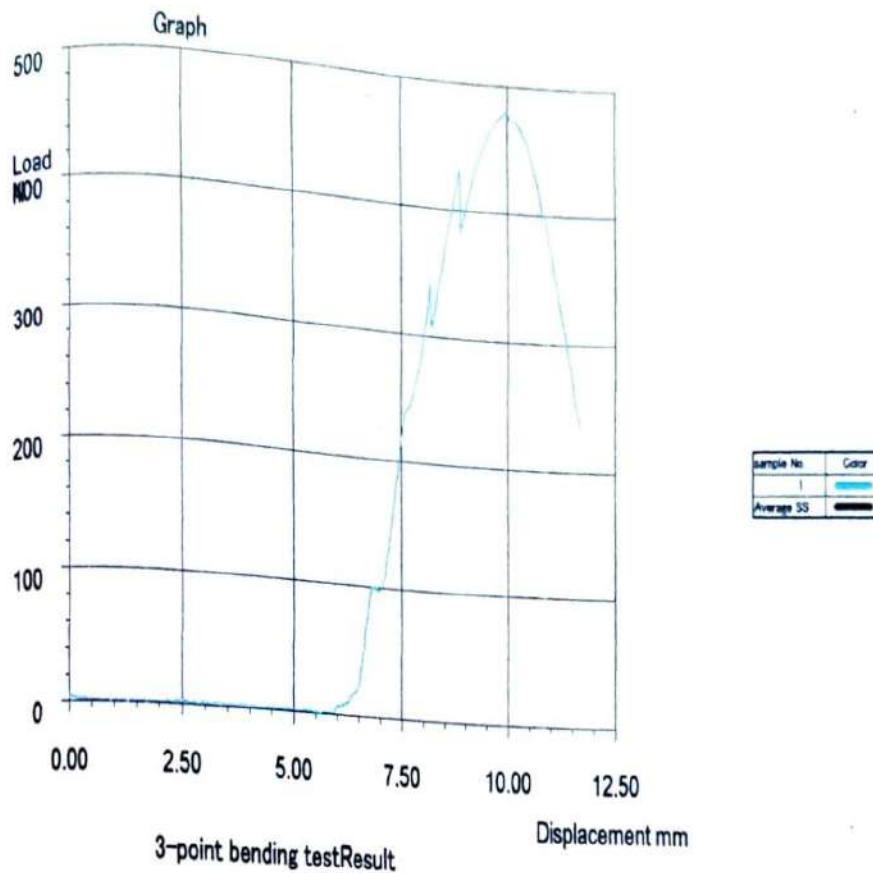
TestID=3892	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	633.29	*****



Machine name				Test type	3-point bending
Strain input 1	Not used			Test speed	5.0 mm/min
Chart speed	OFF			Machine rigidity	0 mm/kgf
Point data(Load)	N	0	0	0	Point data(Disp)
		0	0	0	mm
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa
Load	Pitch	5 N		Origin of elongation	Init. load
Elong adjust	No				0.3 %RO
Save SS curve	Yes				Break point measuren
					0.5 kN

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 1 cm, 4A

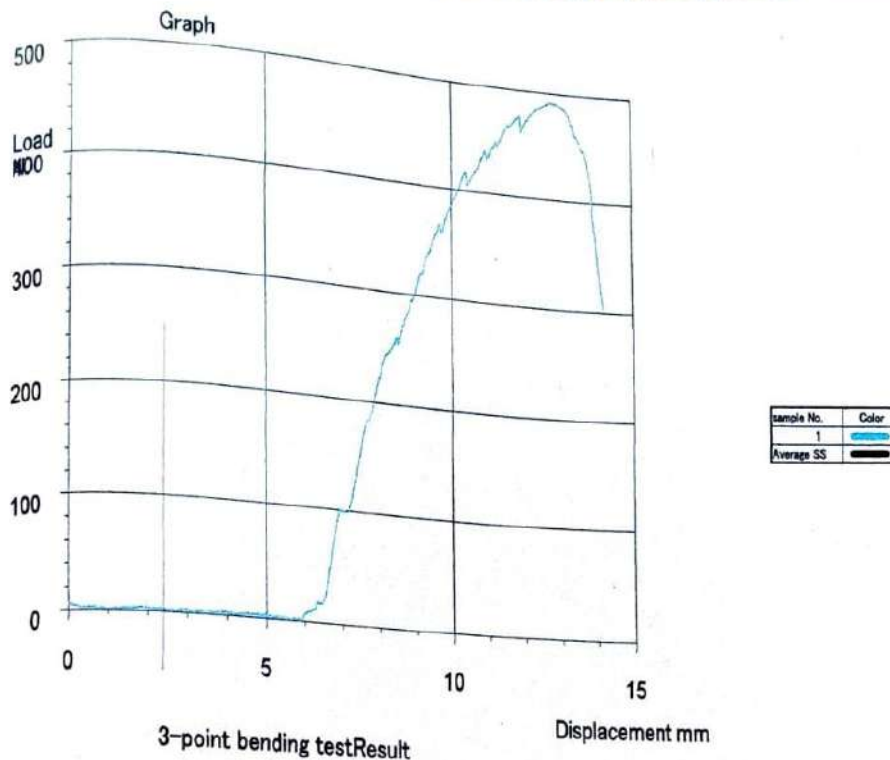
TestID=3893	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	442.20	*****



Machine name				Test type	3-point bending		
Strain input 1	Not used			Test speed	5.0 mm/min		
Chart speed OFF				Machine rigidity	0 mm/kgf		
Point data(Load)	0	0	0	Point data(Disp)	0	0	0
N	0	0	0	mm	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	100 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	0.3 %RO	
Elong adjust	No				Break point measurem	0.5 kN	
Save SS curve	Yes						

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 1 cm, 5A

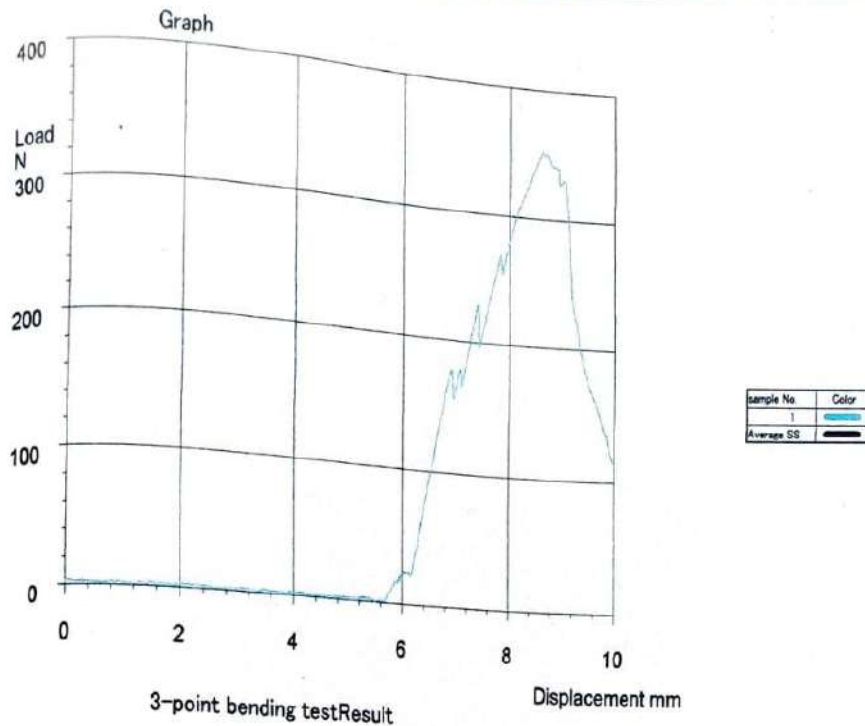
Test ID=3894	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load	Displacement
				N	mm
1	20.000	10.000	200.00	479.60	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0 0 0	Point data(Disp)	0 0 0
	N 0 0 0	mm	0 0 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measurement	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 2 cm, 1B

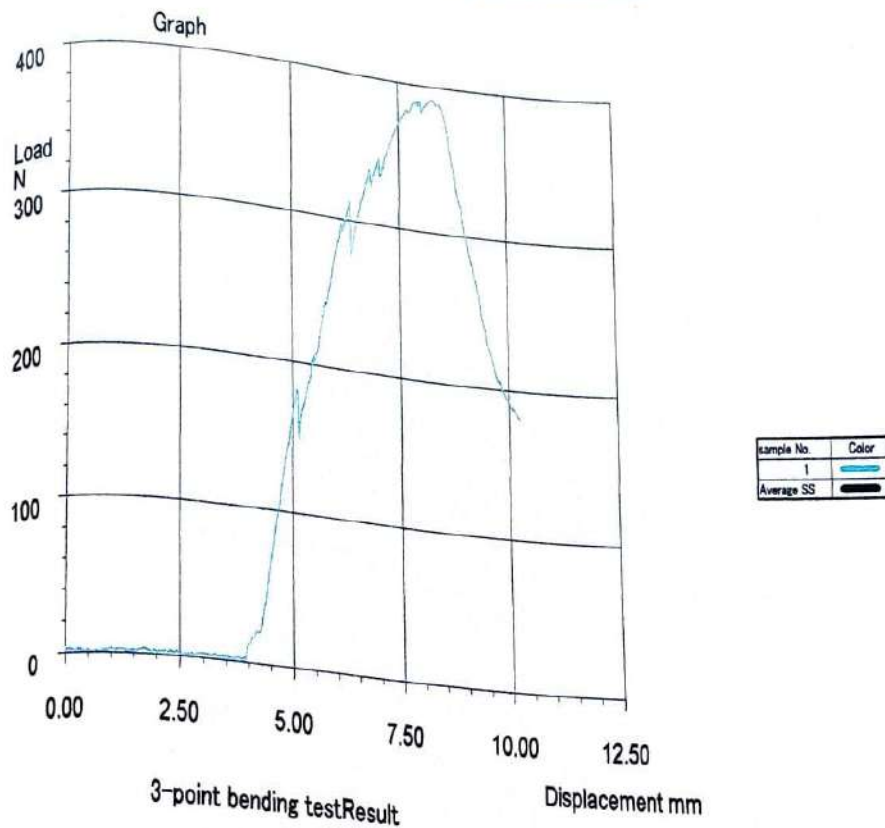
Test/D=3895	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	491.51	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0: 0: 0	Point data(Disp)	0: 0: 0
N	0: 0: 0	mm	0: 0: 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 2 cm, 2B

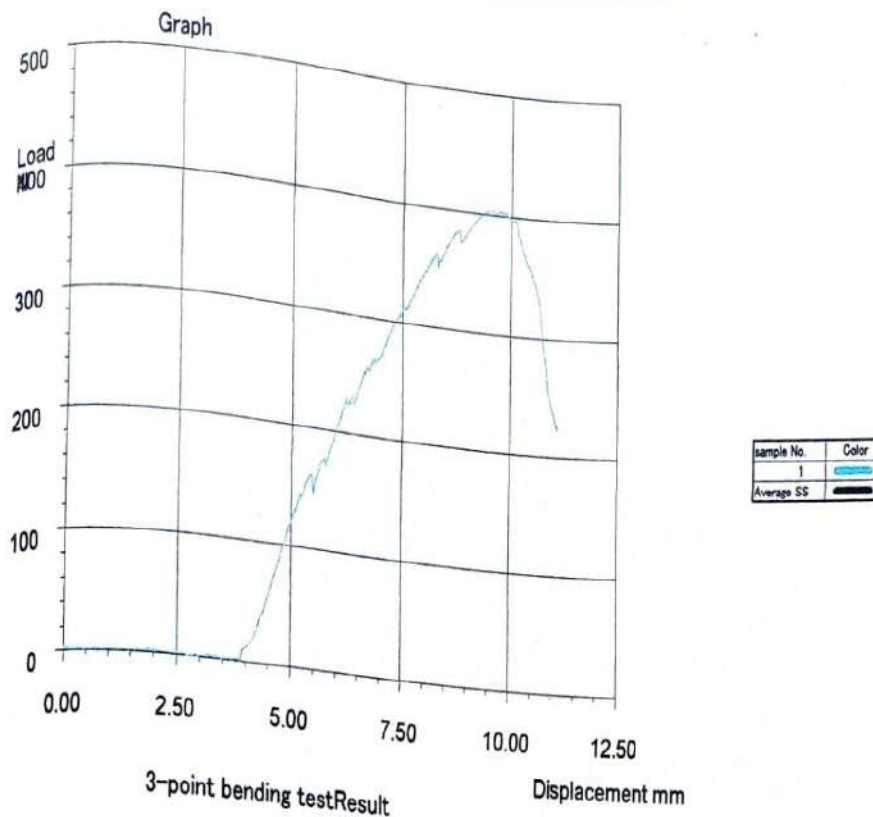
TestID=3896	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load	Displacement
1	20.000	10.000	200.00	351.39	*****



Machine name				Test type	3-point bending		
Strain input 1	Not used			Test speed	5.0 mm/min		
Chart speed	OFF			Machine rigidity	0 mm/kgf		
Point data(Load)	0	0	0	Point data(Disp)	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	100 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	0.3 %RO	
Elong adjust	No			Break point measurem	0.5 kN		
Save SS curve	Yes						

Test date	2025/08/12			Temperature	25 C		
Humidity	60 %RH			Sample name	Serat Sisal		
Lot No.				Preparation			
Operator	Haeruddin Hafid, ST, M.T.			User	Iganasius Rolan		
Comment 1	Serat 10 %, Resin 90 %			Comment 2	Panjang serat 2 cm, 3B		

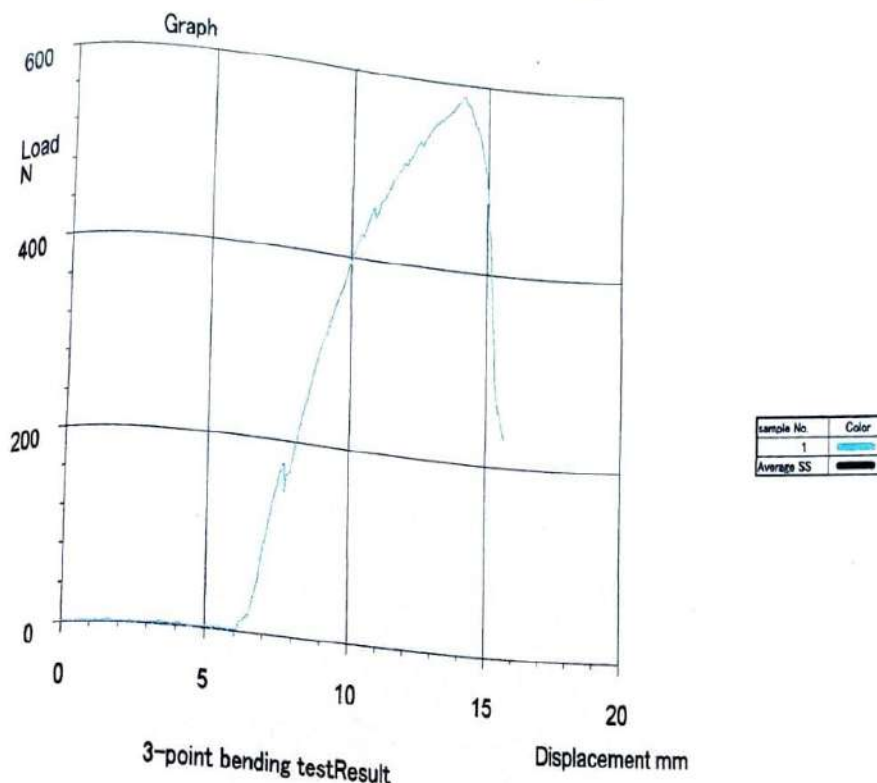
TestID=3897	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load	Displacement
1	20.000	10.000	200.00	391.91	*****



Machine name				Test type	3-point bending
Strain input 1	Not used			Test speed	5.0 mm/min
Chart speed	OFF			Machine rigidity	0 mm/kgf
Point data(Load)	0	0	0	Point data(Disp)	0
N	0	0	0	mm	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa: 100 mm
Load	Pitch	5 N		Origin of elongation	Init. load: 0.3 %RO
Elong adjust	No			Break point measurement	0.5 kN
Save SS curve	Yes				

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 2 cm, 4B

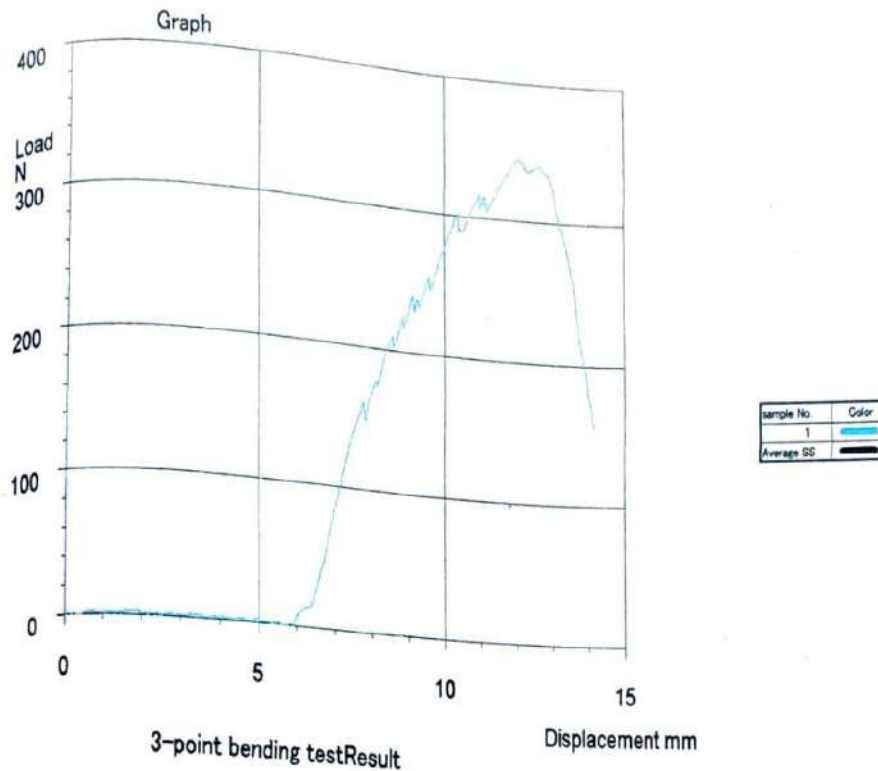
TestID=3898	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load	Displacement
1	20.000	10.000	200.00	403.35	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed OFF		Machine rigidity	0 mm/kgf
Point data(Load)	0: 0: 0	Point data(Disp)	0: 0: 0
N	0: 0: 0	mm	0: 0: 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 2 cm, 5B

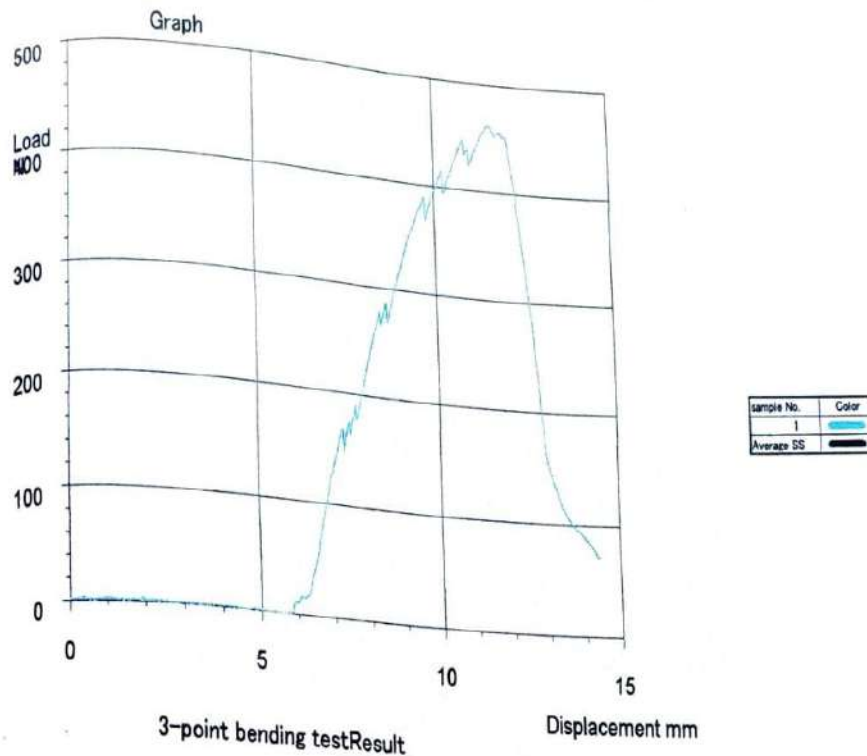
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Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	586.55	*****



Machine name				Test type	3-point bending		
Strain input 1	Not used			Test speed	5.0 mm/min		
Chart speed OFF				Machine rigidity	0 mm/kgf		
Point data(Load)	0	0	0	Point data(Disp)	0	0	0
N	0	0	0	mm	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	100 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	0.3 %RO	
Elong adjust	No			Break point measurem	0.5 kN		
Save SS curve	Yes						

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST, M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 3 cm, 1C

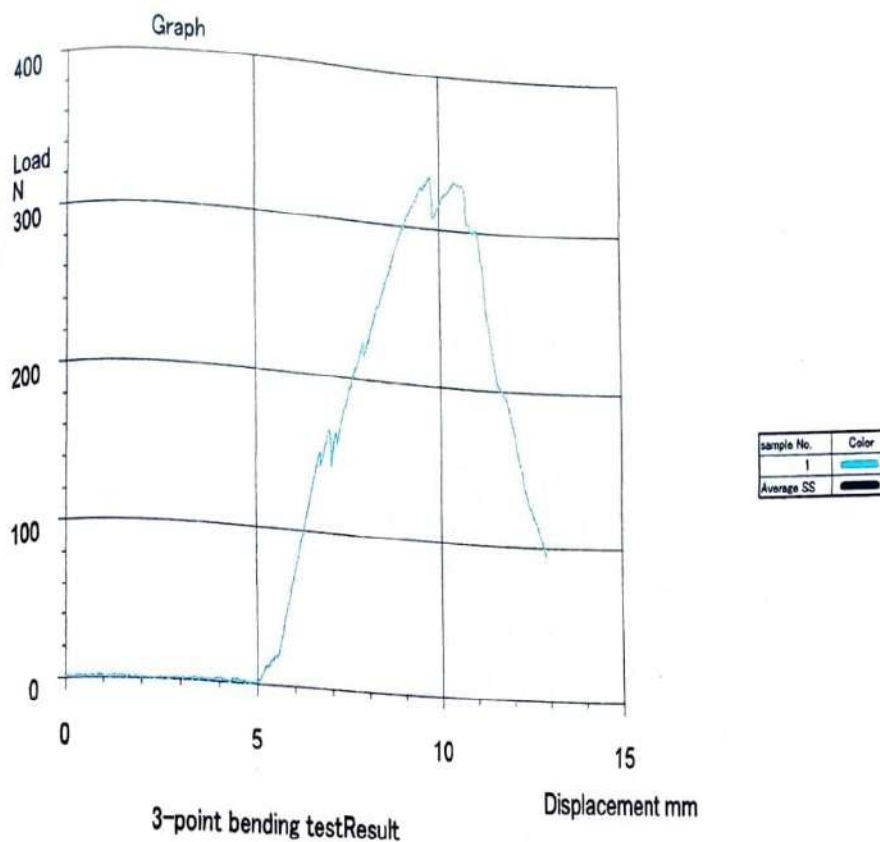
Test/D=3900	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	344.21	*****



Machine name				Test type	3-point bending		
Strain input 1	Not used			Test speed	5.0 mm/min		
Chart speed	OFF			Machine rigidity	0 mm/kgf		
Point data(Load)	0	0	0	Point data(Disp)	0	0	0
	N	0	0	mm	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	100 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	0.3 %RO	
Elong adjust	No				Break point measurem	0.5 kN	
Save SS curve	Yes						

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 3 cm, 2C

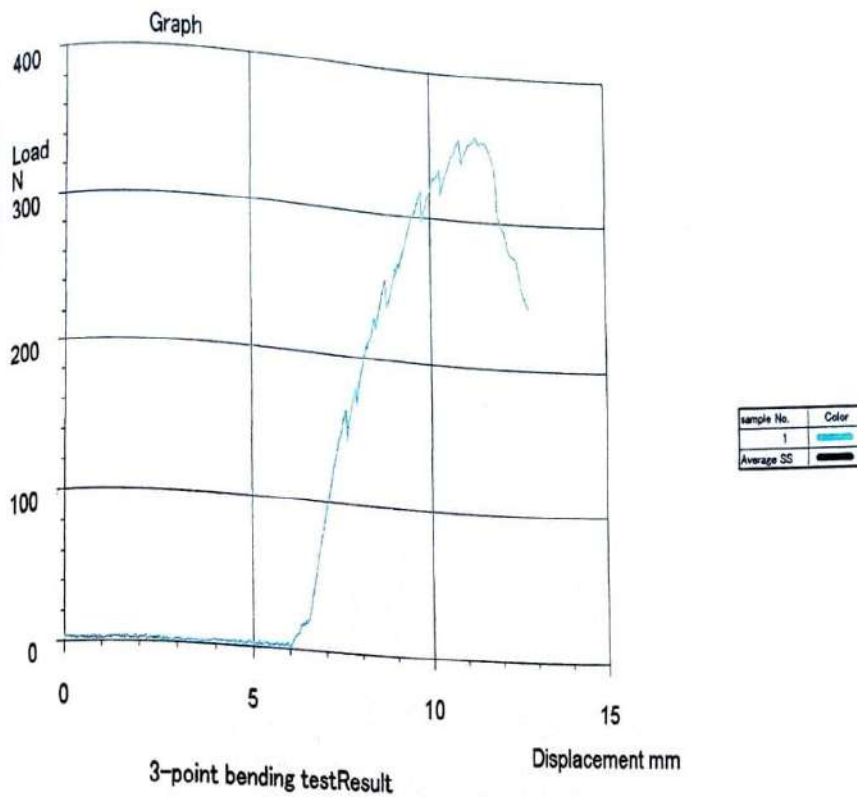
Test/D=3901	Width	Height	Sectional ar	Maximum point	Break point
Test No	mm	mm	mm ²	Load N	Displacement mm
1	20.000	10.000	200.00	462.81	*****



Machine name				Test type	3-point bending		
Strain input 1	Not used			Test speed	5.0 mm/min		
Chart speed	OFF			Machine rigidity	0 mm/kgf		
Point data(Load)	0	0	0	Point data(Disp)	0	0	0
N	0	0	0	mm	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	100 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	0.3 %RO	
Elong adjust	No				Break point measurem	0.5 kN	
Save SS curve	Yes						

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 3 cm, 3C

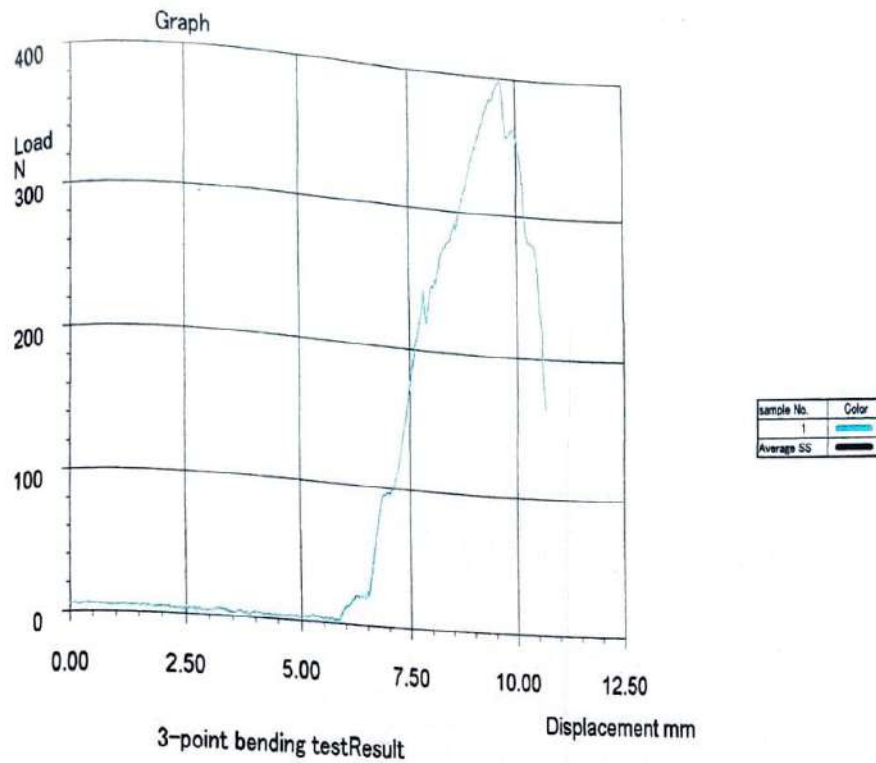
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Test No	mm	mm	mm2	Load	Displacement
1	20.000	10.000	200.00	332.96	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0 0 0	Point data(Disp)	0 0 0
N	0 0 0	mm	0 0 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST.,M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 3 cm, 4C

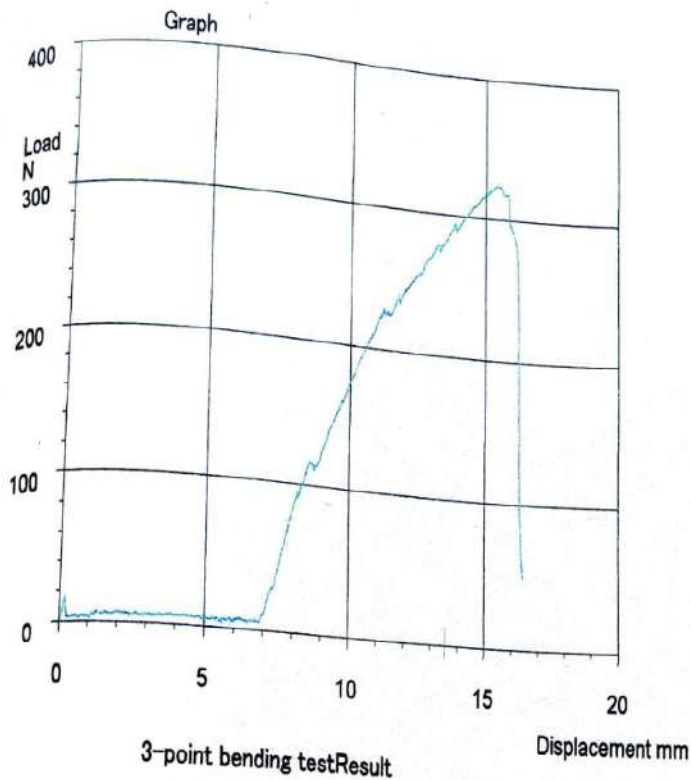
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Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	357.68	*****



Machine name				Test type	3-point bending	
Strain input 1	Not used			Test speed	5.0 mm/min	
Chart speed	OFF			Machine rigidity	0 mm/kgf	
Point data(Load)	0	0	0	Point data(Disp)	0	0
N	0	0	0	mm	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	100 mm
Load	Pitch	5 N		Origin of elongation	Init. load	0.3 %RO
Elong adjust	No				Break point measurent	0.5 kN
Save SS curve	Yes					

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST, M.T.	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 3 cm, 5C

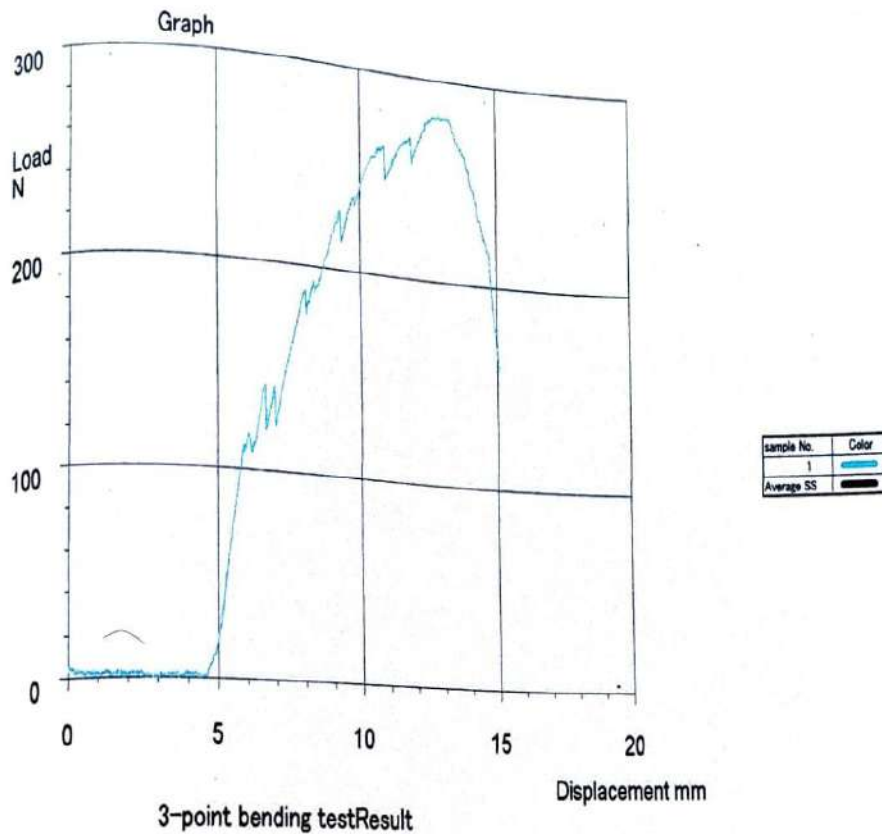
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Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	398.51	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0	Point data(Disp)	0
N	0	mm	0
Elastic modulus anal.	Interval 1	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M. T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 4 cm, 1D

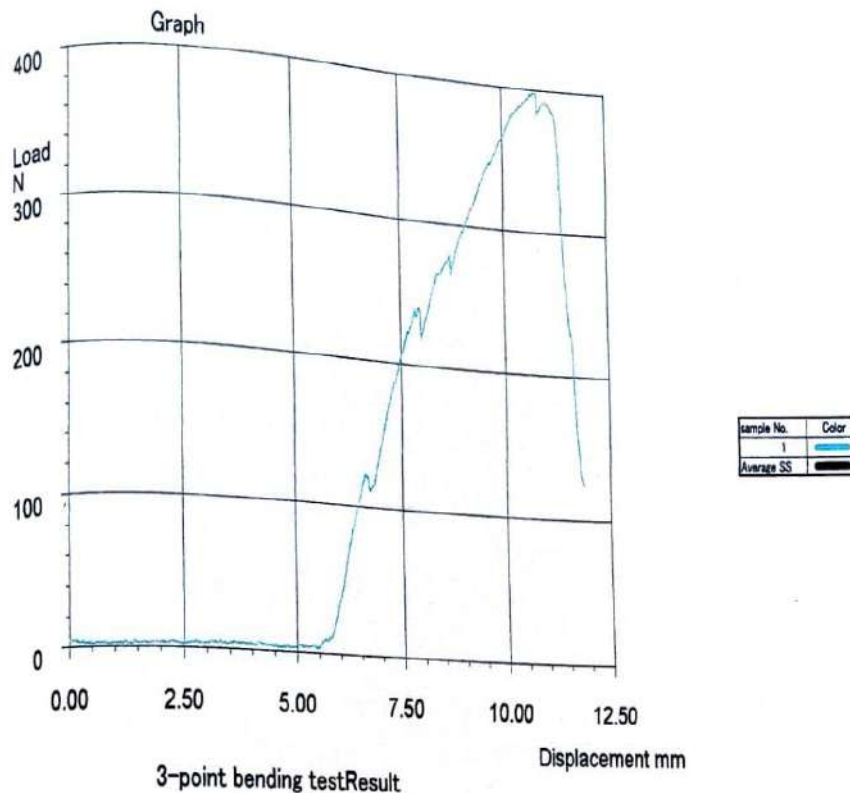
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Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	323.74	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0: 0: 0	Point data(Disp)	0: 0: 0
	N 0: 0: 0	mm	0: 0: 0
Elastic modulus anal.	Interval 1	Initial sample length	Edge spa: 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load: 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST, M.T.	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 4 cm, 2D

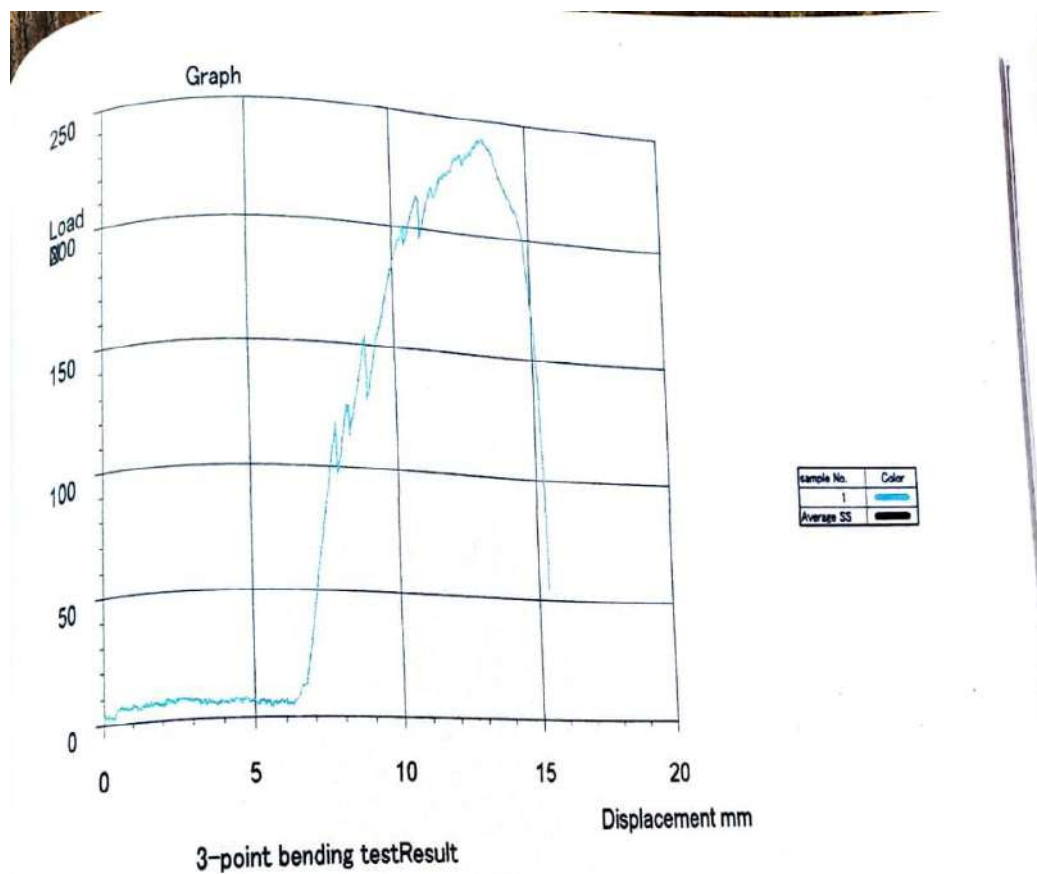
TestID=3906	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	282.12	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0	Point data(Disp)	0
N	0	mm	0
Elastic modulus anal.	Interval 1	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measure	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 4 cm, 3D

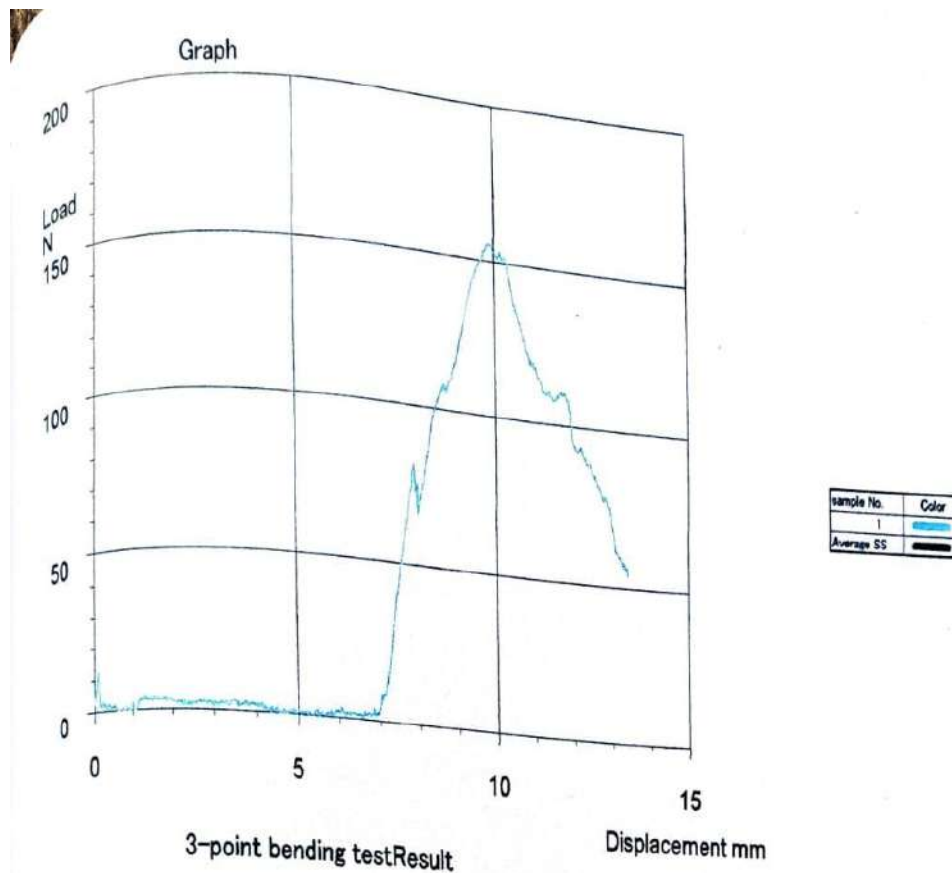
TestID=3907	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	397.96	*****



Machine name				Test type	3-point bending			
Strain input 1	Not used			Test speed	5.0 mm/min			
Chart speed OFF				Machine rigidity	0 mm/kgf			
Point data(Load)	N	0	0	100	Point data(Disp)	0	0	0
		0	0		0	mm	0	0
Elastic modulus anal.	Interval	1		100	Initial sample length	Edge spa	100 mm	
	Pitch	5 N			Origin of elongation	Init. load	0.3 %RO	
Load					Break point measurem	0.5 kN		
Elong adjust	No							
Save SS curve	Yes							
					Temperature	25 C		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 4 cm, 4D

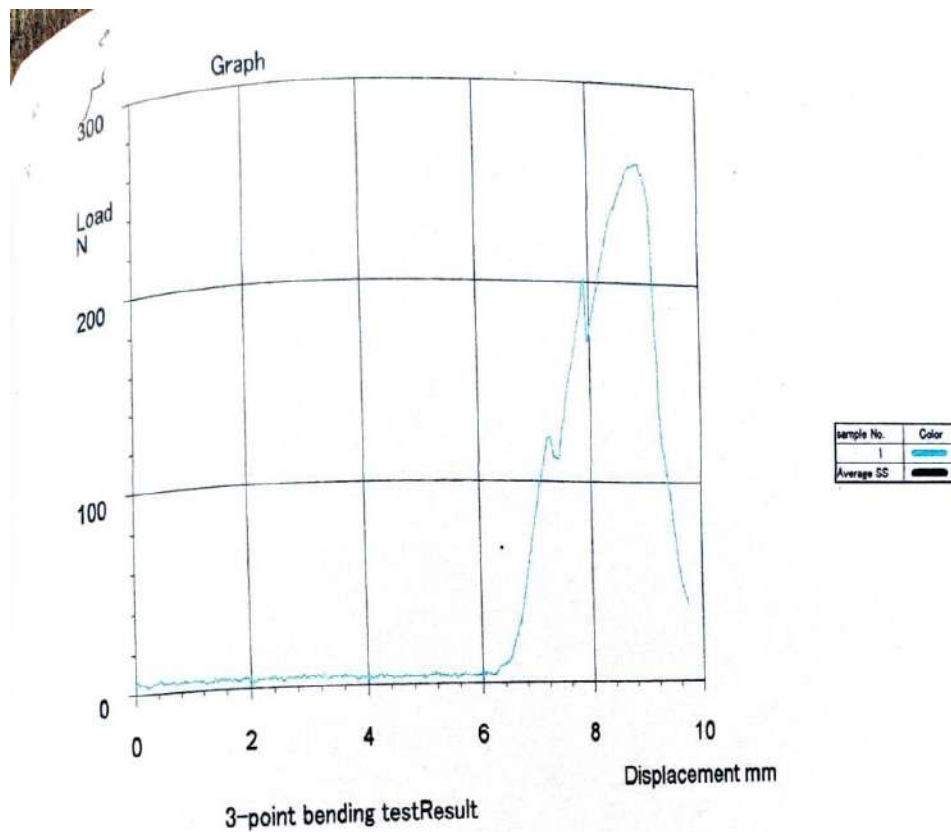
TestID=3908	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load	Displacement
1	20.000	10.000	200.00	242.00	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0 0 0	Point data(Disp)	0 0 0
N	0 0 0	mm	0 0 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Iganasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 4 cm, 5D

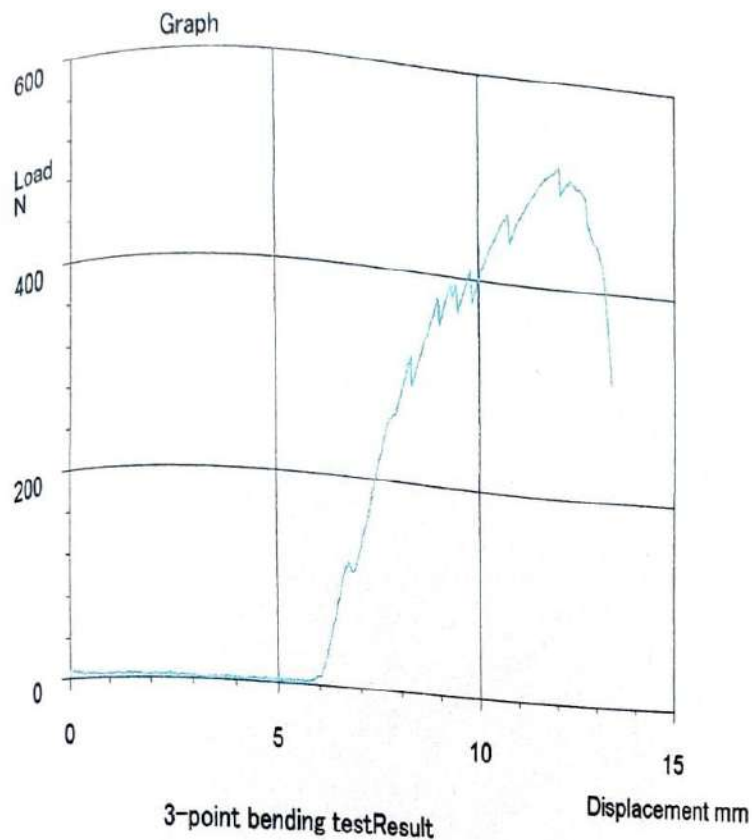
TestID=3909	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	155.44	*****



Machine name	Not used			Test type	3-point bending
Strain input 1				Test speed	5.0 mm/min
Chart speed OFF				Machine rigidity	0 mm/kgf
Point data(Load) N	0	0	0	Point data(Disp)	0
	0	0	0	mm	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa: 100 mm
Load	Pitch	5 N		Origin of elongation	Init. load 0.3 %RO
Elong adjust	No			Break point measurem	0.5 kN
Save SS curve	Yes				

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 5cm, 1E

TestID=3910	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	259.99	*****

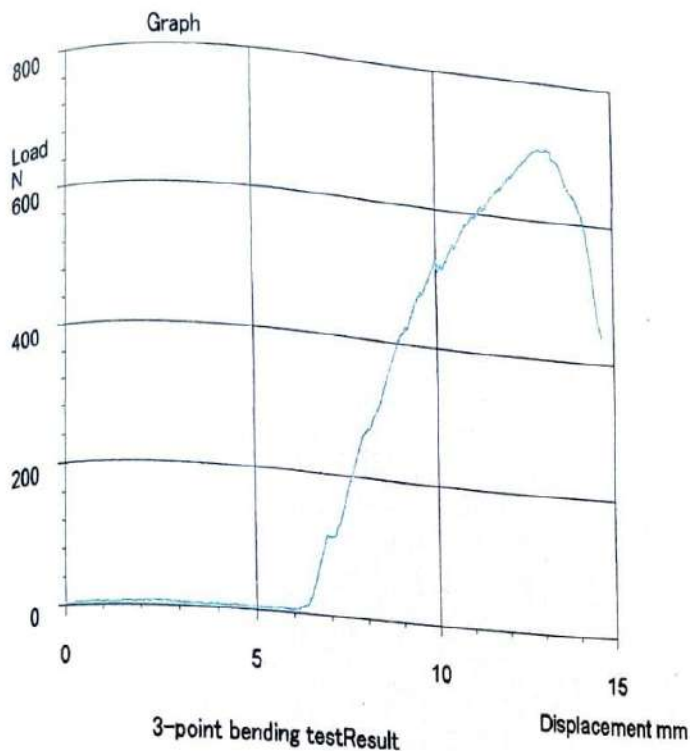


Sample No.	Color
1	
Average SS	

Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0 0 0	Point data(Disp)	0 0 0
N	0 0 0	mm	0 0 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST. M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 5cm, 2E

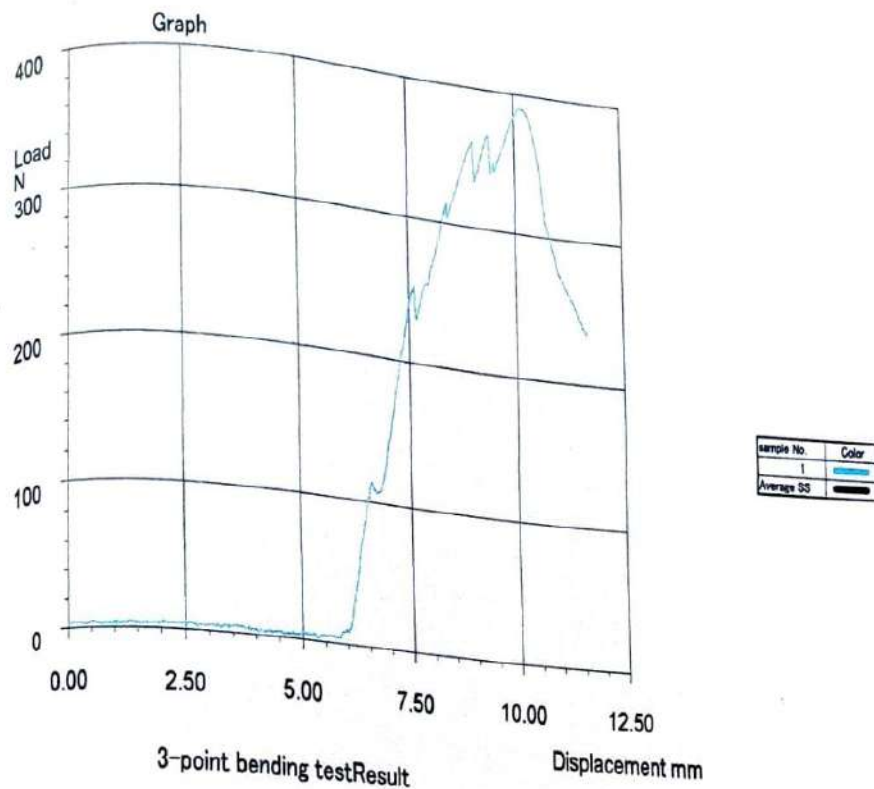
TestID=3911	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	519.71	*****



Machine name		Test type	3-point bending
Strain input 1	Not used	Test speed	5.0 mm/min
Chart speed	OFF	Machine rigidity	0 mm/kgf
Point data(Load)	0 0 0	Point data(Disp)	0 0 0
N	0 0 0	mm	0 0 0
Elastic modulus anal.	Interval 1 100	Initial sample length	Edge spa: 100 mm
Load	Pitch 5 N	Origin of elongation	Init. load 0.3 %RO
Elong adjust	No	Break point measurem	0.5 kN
Save SS curve	Yes		

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST.,M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 5cm, 3E

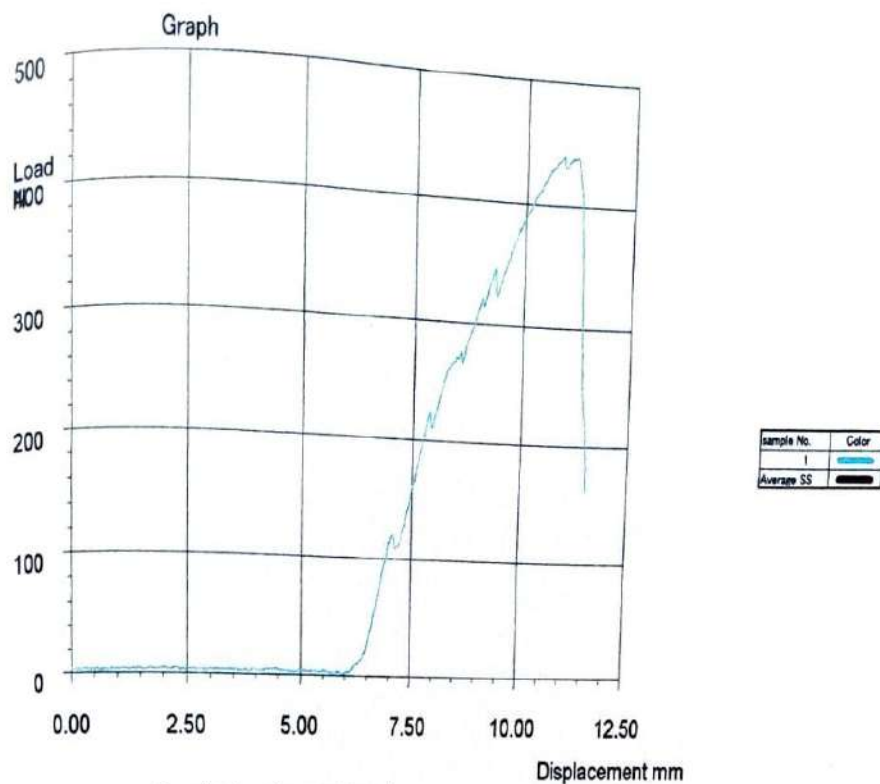
TestID=3912	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load N	Displacement mm
1	20.000	10.000	200.00	705.64	*****



Machine name					Test type	3-point bending			
Strain input 1	Not used				Test speed	5.0 mm/min			
Chart speed	OFF					Machine rigidity	0 mm/kgf		
Point data(Load)	N	0	0	0	Point data(Disp)	0	0	0	
Elastic modulus anal.	Interval	1	100		Initial sample length	Edge spa	100 mm		
Load	Pitch	5 N			Origin of elongation	Init. load	0.3 %RO		
Elong adjust	No					Break point measurem	0.5 kN		
Save SS curve	Yes								

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST., M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 5cm, 4E

TestID=3913	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load	Displacement
1	20.000	10.000	200.00	390.51	*****



Machine name				Test type	3-point bending		
Strain input 1	Not used			Test speed	5.0 mm/min		
Chart speed OFF				Machine rigidity	0 mm/kgf		
Point data(Load)	0	0	0	Point data(Disp)	0	0	0
N	0	0	0	mm	0	0	0
Elastic modulus anal.	Interval	1	100	Initial sample length	Edge spa	100 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	0.3 %RO	
Elong adjust	No			Break point measurem	0.5 kN		
Save SS curve	Yes						

Test date	2025/08/12	Temperature	25 C
Humidity	60 %RH	Sample name	Serat Sisal
Lot No.		Preparation	
Operator	Haeruddin Hafid, ST, M.T.	User	Ignasius Rolan
Comment 1	Serat 10 %, Resin 90 %	Comment 2	Panjang serat 5cm, 5E

TestID=3914	Width	Height	Sectional ar	Maximum poin	Break point
Test No	mm	mm	mm2	Load	Displacement
1	20.000	10.000	200.00	440.45	*****