LAMPIRAN



LP 1. Pohon pisang kepok (Musa acuminata)



LP 2. Proses pengambilan batang pisang



LP 3. Proses pemotongan batang pisang



LP 4. Proses penyisiran serat



PL 5. Pengeringan serat



LP 6. Pembuatan cetakan



LP 7. Proses perendaman HCL



LP 8. Proses pengeringan setelah di rendam HCL



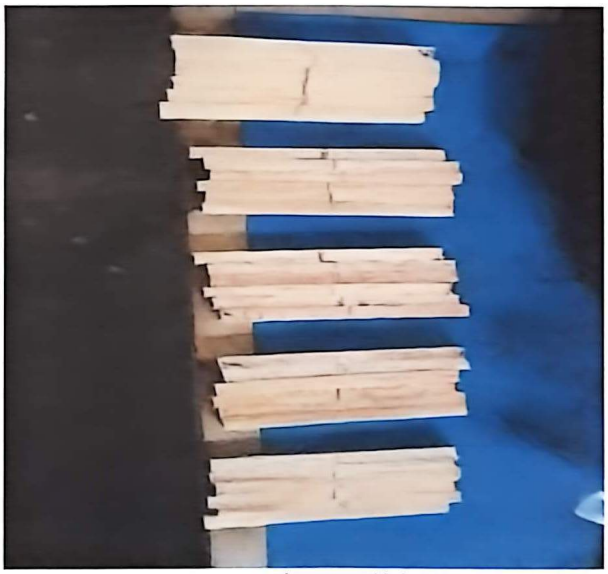
LP 9. Penuangan resin ke cetakan



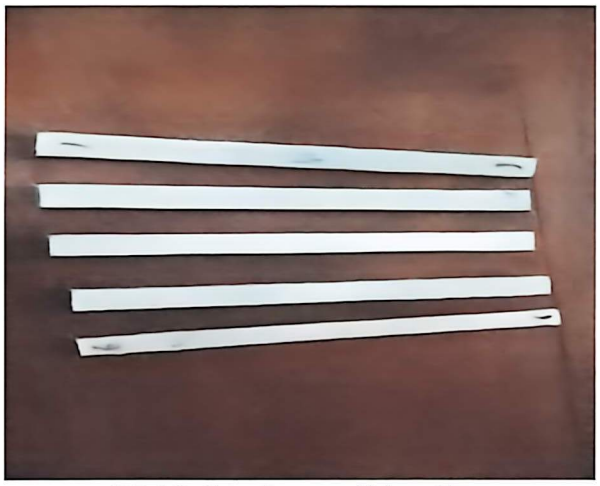
LP 10. Spesimen hasil cetakan



LP 11. Pemotongan spesimen



LP 12. Spesimen uji impak



LP 13. Spesimen uji bending



LP 14. Proses uji impak



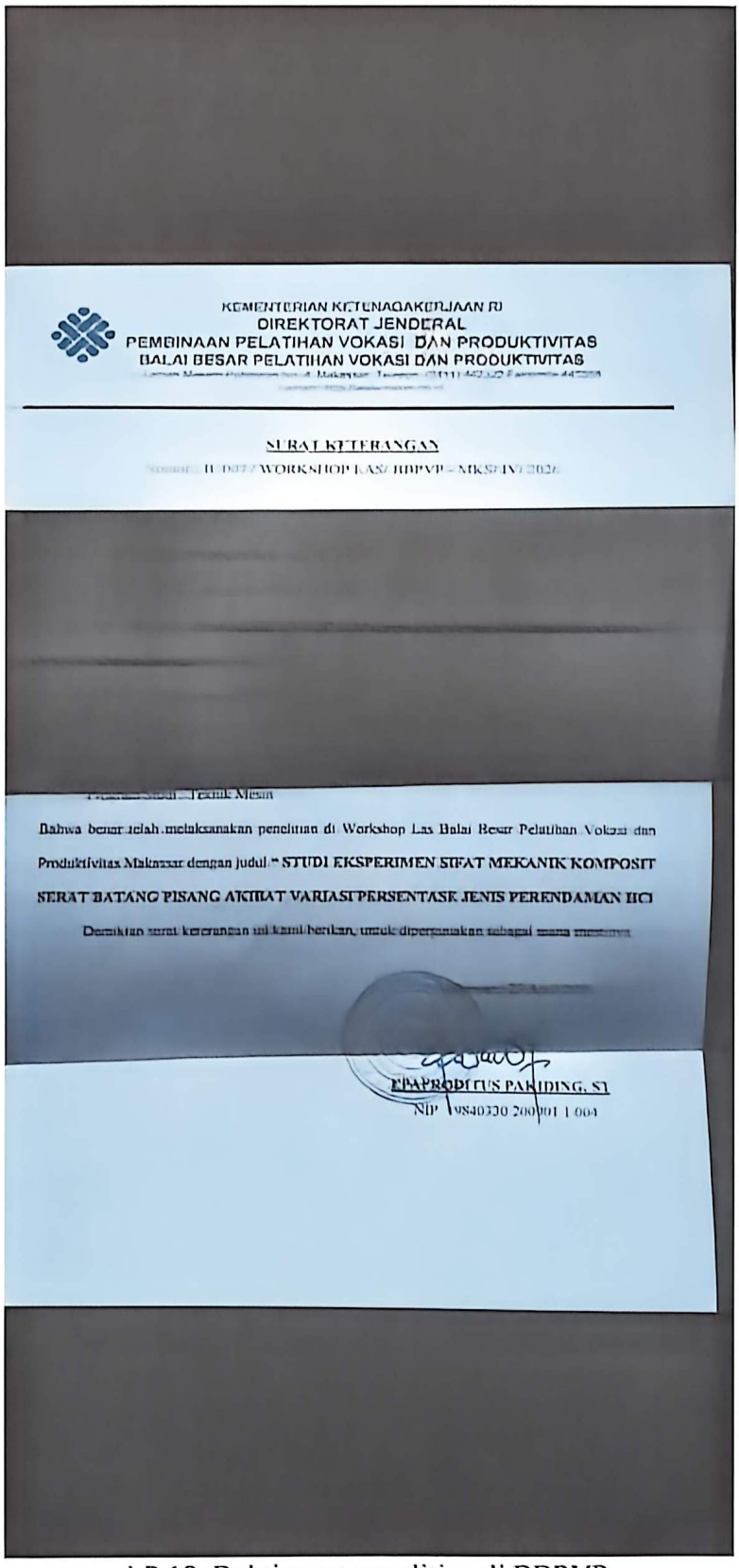
LP 15. Proses uji bending



LP 16. spesimen setelah uji impak



LP 17. Spesimen setelah uji bending



KEMENTERIAN KETENAGAKERJAAN RI
DIREKTORAT JENDERAL
PEMBINAAN PELATIHAN VOKASI DAN PRODUKTIVITAS
BALAI BESAR PELATIHAN VOKASI DAN PRODUKTIVITAS

SURAT KETERANGAN

WORKSHOP LAS/ BBPVP – MKSP.IV/2026

Teknik Mesin

Bahwa benar telah melaksanakan penelitian di Workshop Las Balai Besar Pelatihan Vokasi dan Produktivitas Makassar dengan judul " STUDI EKSPERIMEN SIFAT MEKANIK KOMPOSIT SERAT BATANG PISANG AKIBAT VARIASI PERSENTASE JENIS PERENDAMAN HCl

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

EPAPRODITUS PARIDING, ST

NIP 19840330 200801 1 004

LP 18. Bukti surat penelitian di BBPVP

KEMENTERIAN KETENAGAKERJAAN RI
DIREKTORAT JENDERAL
PEMBINAAN PELATIHAN VOKASI DAN PRODUKTIVITAS
BALAI BESAR PELATIHAN VOKASI DAN PRODUKTIVITAS
Jl. Jenderal Muhammad Ardiansyah No. 4 Makassar, Telepon (0411) 442322 Faksimile 441558
Laman: http://www.makassar.go.id

SURAT KETERANGAN

Nomor : B. 807 / WORKSHOP LAS/ BBPVP – MKS/ IV/ 2026

Yang bertanda tangan di bawah ini :

Nama : Epafroditus Pakiding, ST

NIP : 19840330 200901 1 004

Jabatan : Komplek BLK Blok D11 Makassar Jalan Jenderal Muhammad Ardiansyah no 4

Program Studi : Teknik Mesin

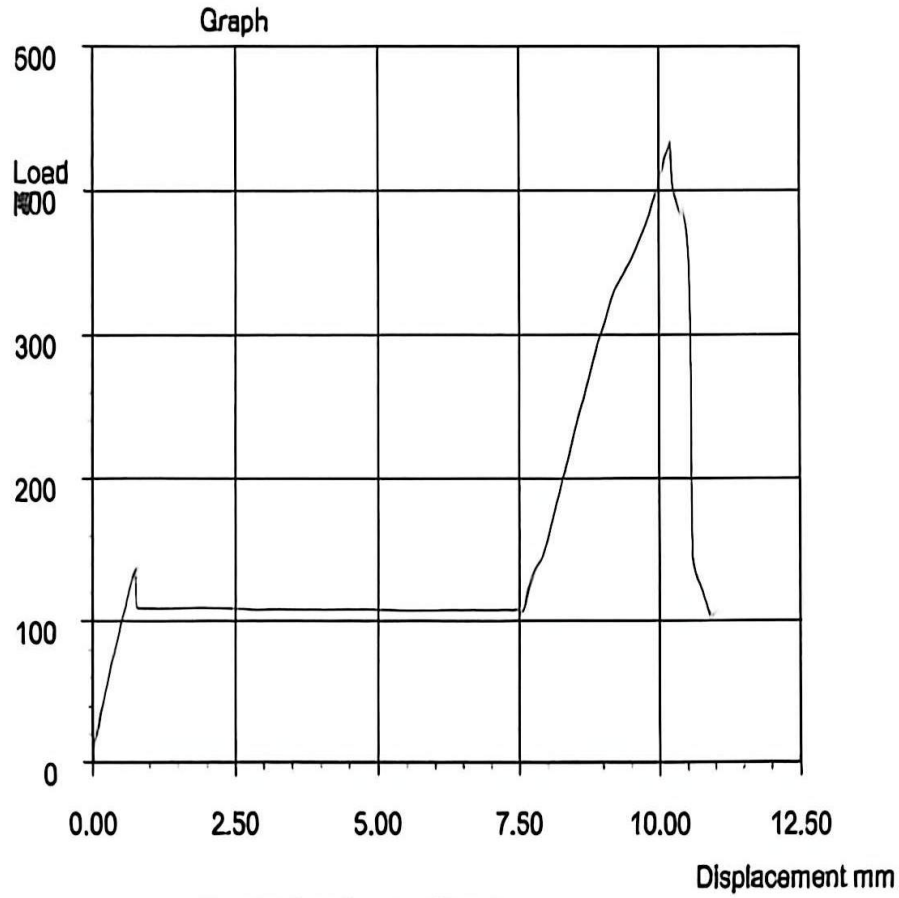
Bahwa benar telah melaksanakan penelitian di Workshop Las Balai Besar Pelatihan Vokasi dan Produktivitas Makassar dengan judul " **STUDI EKSPERIMEN SIFAT MEKANIK KOMPOSIT SERAT BATANG PISANG AKIBAT VARIASI PERSENTASE JENIS PERENDAMAN HCl**

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

Makassar, 23 April 2026

EPAFRODITUS PAKIDING, ST

NIP 19840330 200901 1 004

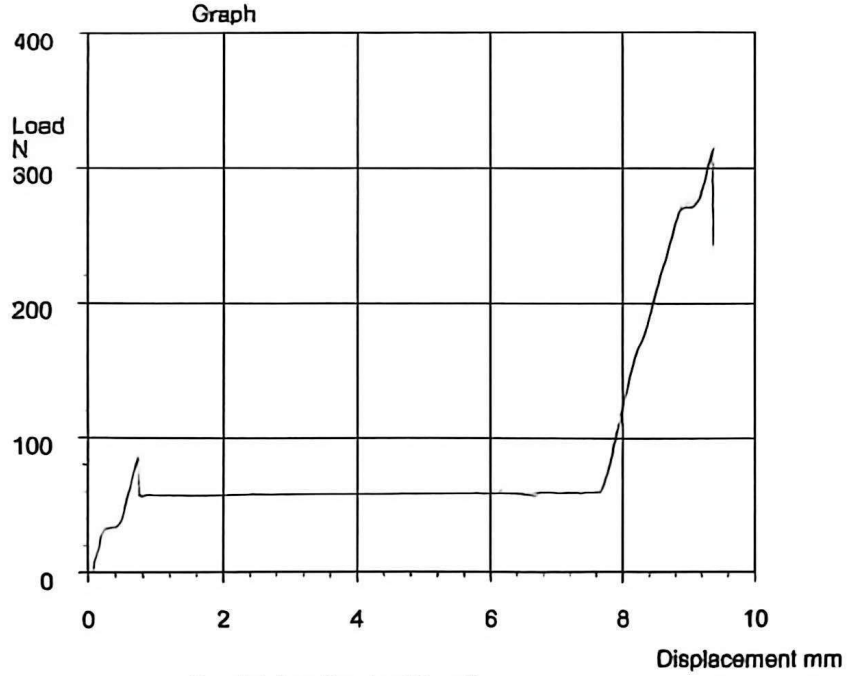


3-point bending testResult

Machine name	RTF			Test type	3-point bending			
Strain input 1	Not used			Test speed	10.0 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 spar	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	2026/04/25	Temperature	25 C
Humidity	60 %RH	Sample name	Komposit Serat Pisang
Lot No.		Preparation	
Operator	Epafroditus Pakiding, S.T	User	Suwardi
Comment 1	Perendaman HCl 2%	Comment 2	Sample 1

TestID=4431	Width	Height	Sectional ar	Maximum poin	Break point	Upper yield	Lower yield	Elastic modu
				Load	Displacement	Stress	Stress	
Test No	mm	mm	mm2	N	mm	N/mm2	N/mm2	N/mm2
1	10.000	20.000	200.00	433.76	[illegible]	[illegible]	[illegible]	574.68

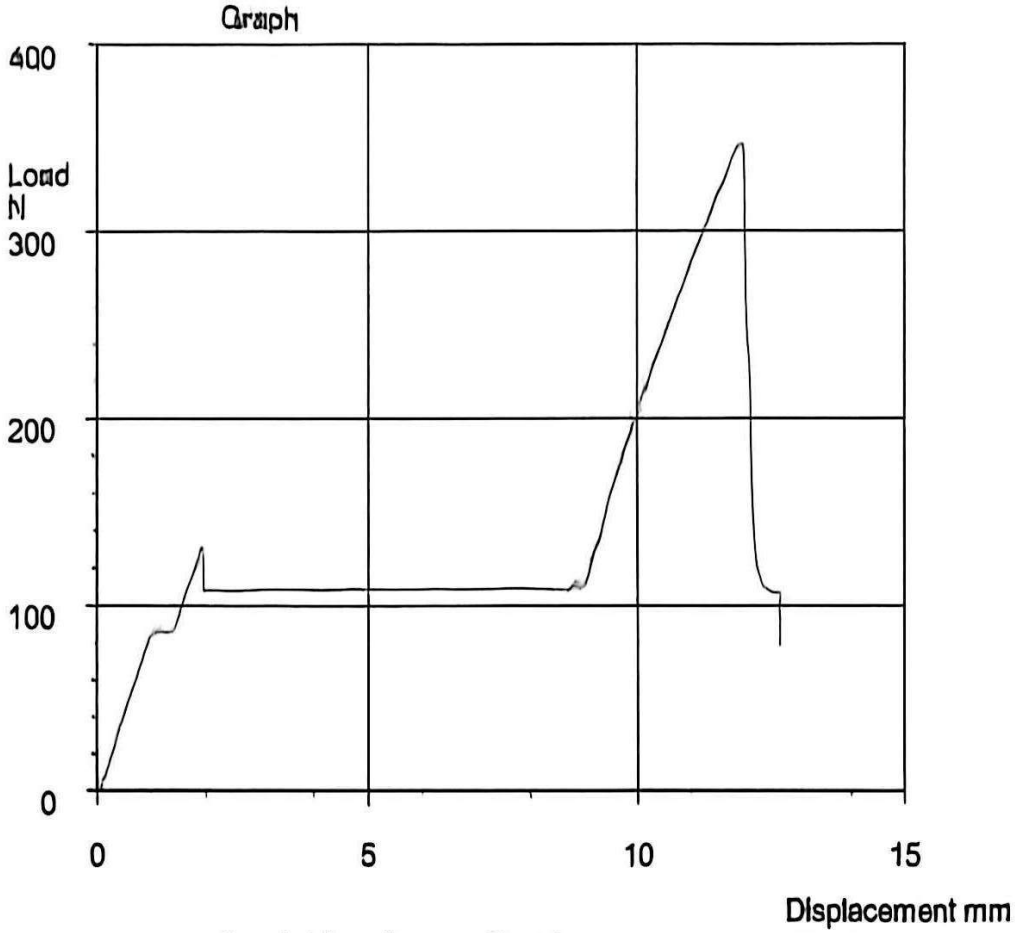


3-point bending testResult

Mechine name	RTF			Test type	3-point bending		
Strain input 1	Not used			Test speed	10.0 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 spar	100 mm	
Load	Pitch	5 N		Origin of elongation	Init. load	0.3 %RO	
Elong adjust	No			Break point measurem	0.6 kN		
Save SS curve	Yes						

Test date	2026/04/25	Temperature	25 C
Humidity	60 %RH	Sample name	Komposit Serat Pisang
Lot No.		Preparation	
Operator	Epafroditus Pakiding, S.T	User	Suwardi
Comment 1	Perendaman HCl 4%	Comment 2	Sample 1

TestID=4437	Width	Height	Sectional ar	Maximum poin	Break point	Upper yield	Lower yield	Elastic modu
				Load	Displacement	Stress	Stress	
Test No	mm	mm	mm2	N	mm	N/mm2	N/mm2	N/mm2
1	10.000	20.000	200.00	313.24	[illegible]	[illegible]	[illegible]	23.087

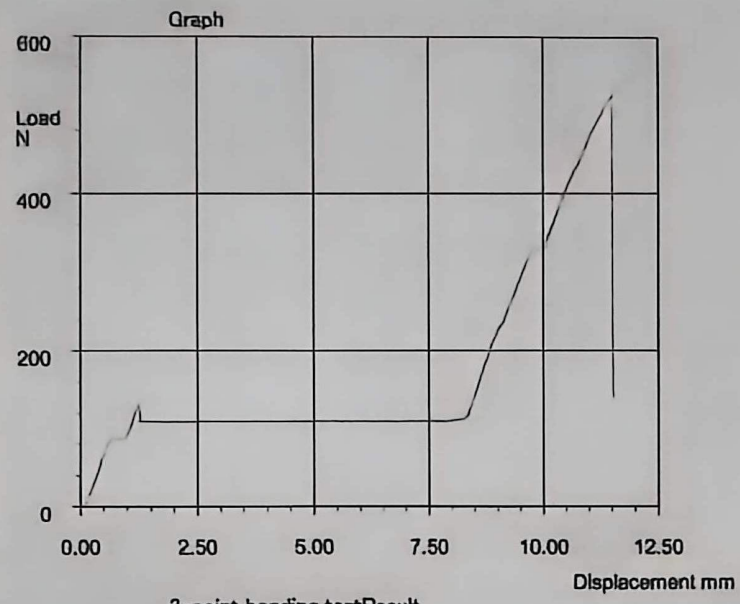


3-point bending testResult

Machine name	RTF			Test type	3-point bending		
Strain input 1	Not used			Test speed	10.0 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 spar	100 mm	
Load	Pitch	6 N		Origin of elongation	Init. load	0.3 %RO	
Elong adjust	No			Break point measurem	0.5 kN		
Save SS curve	Yes						

Test date	2026/04/25	Temperature	25 C
Humidity	60 %RH	Sample name	Komposit Serat Pisang
Lot No.		Preparation	
Operator	Epafroditus Pakiding, S.T	User	Suwardi
Comment 1	Perendaman HCl 6%	Comment 2	Sample 1

TestID=4442	Width	Height	Sectional ar	Maximum poin	Break point	Upper yield	Lower yield	Elastic modu
				Load	Displacement	Stress	Stress	
Test No	mm	mm	mm2	N	mm	N/mm2	N/mm2	N/mm2
1	10.000	20.000	200.00	346.97	[illegible]	[illegible]	[illegible]	276.24

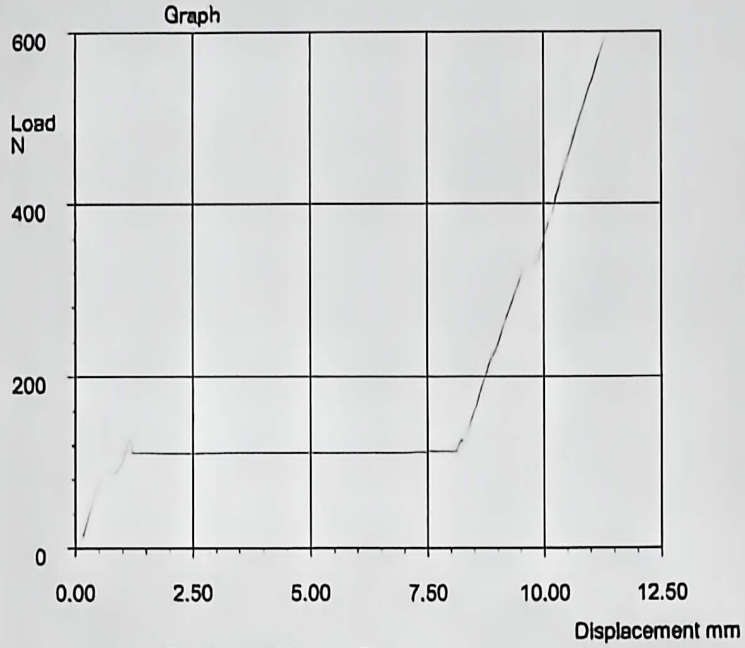


3-point bending testResult

Machine name	RTF			Test type	3-point bending		
Strain input 1	Not used			Test speed	10.0 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 spar	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	2026/04/25	Temperature	25 C
Humidity	60 %RH	Sample name	Komposit Serat Pisang
Lot No.		Preparation	
Operator	Epafroditus Pakiding, S.T	User	Suwardi
Comment 1	Perendaman HCl 8%	Comment 2	Sample 1

TestID=4447	Width	Height	Sectional ar	Maximum poin	Break point	Upper yield	Lower yield	Elastic modu
				Load	Displacement	Stress	Stress	
Test No	mm	mm	mm2	N	mm	N/mm2	N/mm2	N/mm2
1	10.000	20.000	200.00	526.18	[illegible]	[illegible]	[illegible]	207.59



3-point bending testResult

Machine name	RTF			Test type	3-point bending			
Strain input 1	Not used			Test speed	10.0 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 spar	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	2026/04/25	Temperature	25 C
Humidity	60 %RH	Sample name	Komposit Serat Pisang
Lot No.		Preparation	
Operator	Epafroditus Pakiding, S.T	User	Suwardi
Comment 1	Perendaman HCl 10%	Comment 2	Sample 1

TestID=4452	Width	Height	Sectional ar	Maximum poin	Break point	Upper yield	Lower yield	Elastic modu
				Load	Displacement	Stress	Stress	
Test No	mm	mm	mm2	N	mm	N/mm2	N/mm2	N/mm2
1	10.000	20.000	200.00	585.76	*******	*******	*******	617.33

Tabel Jadwal Penelitian

No	Urutan penelitian	Bulan					
		I	II	III	IV	V	VI
1	Proposal						
2	Persiapan bahan						
3	Pembuatan cetakan						
4	Pengambilan data						
5	Pengolahan data						
6	Seminar hasil						
7	Ujian tutup						