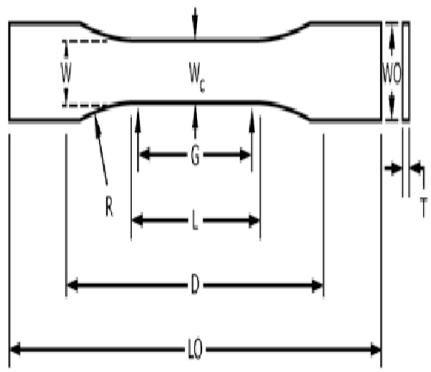
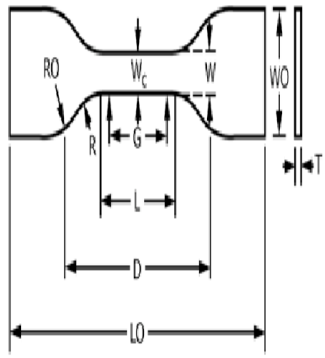
LAMPIRAN

No.	Urutan Penelitian	Blan ke-					
		I	II	III	IV	V	VI
1	Proposal						
2	Persiapan alat dan bahan						
3	Pembuatan Alat Bioplatik						
4	Pengambilan Data						
5	Pengolahan Data						
6	Seminar Hasil						
7	Ujian						



TYPES I, II, III & V



TYPE IV

Specimen Dimensions for Thickness, *T*, mm (in.)[A]

Dimensions (see drawings)	7 (0.28) or under		Over 7 to 14 (0.28 to 0.55), incl	4 (0.16) or under		Tolerances
	Type I	Type II	Type III	Type IV[B]	Type V[C,D]	
W–Width of narrow section[E,F]	13 (0.50)	6 (0.25)	19 (0.75)	6 (0.25)	3.18 (0.125)	±0.5 (±0.02)[B,C]
L–Length of narrow section	57 (2.25)	57 (2.25)	57 (2.25)	33 (1.30)	9.53 (0.375)	±0.5 (±0.02)[C]
WO–Width overall, min[G]	19 (0.75)	19 (0.75)	29 (1.13)	19 (0.75)	...	+ 6.4 (+ 0.25)
WO–Width overall, min[G]	...	...	...	...	9.53 (0.375)	+ 3.18 (+ 0.125)
LO–Length overall, min[H]	165 (6.5)	183 (7.2)	246 (9.7)	115 (4.5)	63.5 (2.5)	no max (no max)
G–Gage length[I]	50 (2.00)	50 (2.00)	50 (2.00)	...	7.62 (0.300)	±0.25 (±0.010)[C]
G–Gage length[I]	...	...	...	25 (1.00)	...	±0.13 (±0.005)
D–Distance between grips	115 (4.5)	135 (5.3)	115 (4.5)	65 (2.5)[J]	25.4 (1.0)	±5 (±0.2)
R–Radius of fillet	76 (3.00)	76 (3.00)	76 (3.00)	14 (0.56)	12.7 (0.5)	±1 (±0.04)[C]
RO–Outer radius (Type IV)	...	...	...	25 (1.00)	...	±1 (±0.04)

TABEL ASTM D638-14

TABLE A3.1 Poisson's Ratio Based on One Laboratory

Material	Extensometer Type	Average	V_r[A]	V_R[B]	r[C]	R[D]
PP Copolymer	2-point	0.408	0.011		0.031	
PP Copolymer	4-point	0.392	0.010		0.028	
PP Homopolymer with 20 % Glass	2-point	0.428	0.013		0.036	
PP Homopolymer with 20 % Glass	4-point	0.410	0.015		0.042	

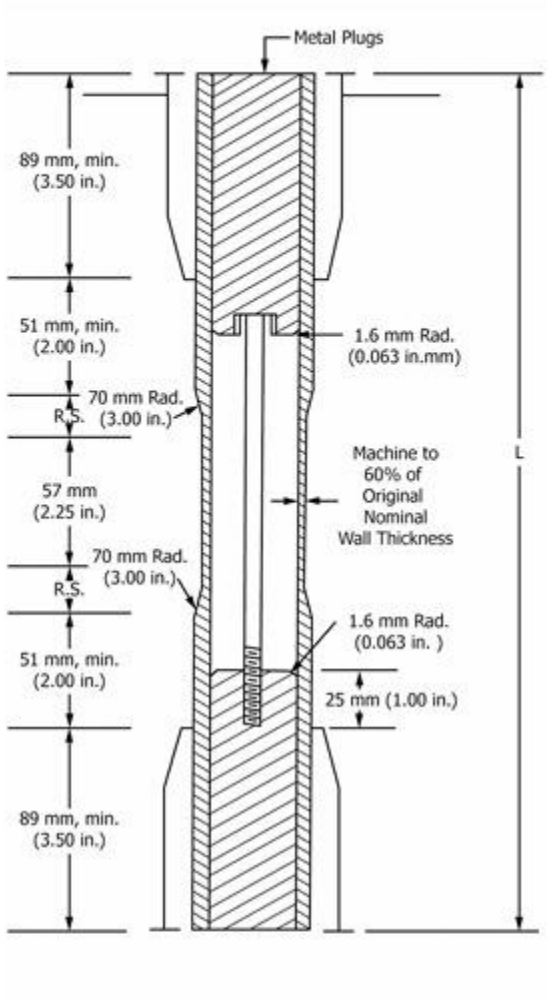
[A] S_r = within laboratory standard deviation for the indicated material. It is obtained by first pooling the with-laboratory standard deviations of the test results from all the participating laboratories:

$$S_r = [[(S_1)^2 + (S_2)^2 + \ldots + (S_n)^2]/n]^{1/2}$$

[B] S_R = between-laboratories reproducibility, expressed as standard deviation: $S_R = [S_r^2 + S_L^2]^{1/2}$

[C] r = within-laboratory critical interval between two test results = 2.8 x S_r

[D] R = between-laboratories critical interval between two test results = 2.8 x S_R



DIMENSIONS OF TUBE SPECIMENS

Nominal Wall Thickness	Length of Radial Sections, 2R.S.	Total Calculated Minimum Length of Specimen	Standard Length, *L*, of Specimen to Be Used for 89-mm (3.5-in.) Jaws[A]
	mm (in.)		
0.79 (1/32)	13.9 (0.547)	350 (13.80)	381 (15)
1.2 (3/64)	17.0 (0.670)	354 (13.92)	381 (15)
1.6 (1/16)	19.6 (0.773)	356 (14.02)	381 (15)
2.4 (3/32)	24.0 (0.946)	361 (14.20)	381 (15)
3.2 (1/8)	27.7 (1.091)	364 (14.34)	381 (15)
4.8 (3/16)	33.9 (1.333)	370 (14.58)	381 (15)
6.4 (1/4)	39.0 (1.536)	376 (14.79)	400 (15.75)
7.9 (5/16)	43.5 (1.714)	380 (14.96)	400 (15.75)
9.5 (3/8)	47.6 (1.873)	384 (15.12)	400 (15.75)
11.1 (7/16)	51.3 (2.019)	388 (15.27)	400 (15.75)
12.7 (1/2)	54.7 (2.154)	391 (15.40)	419 (16.5)

[A]For jaws greater than 89 mm (3.5 in.), the standard length shall be increased by twice the length of the jaws minus 178 mm (7 in.). The standard length permits a slippage of approximately 6.4 to 12.7 mm (0.25 to 0.50 in.) in each jaw while maintaining the maximum length of the jaw grip.

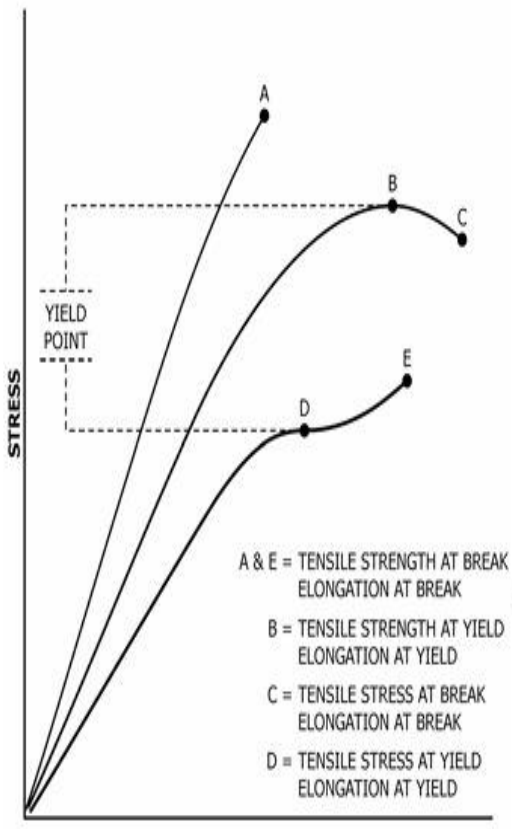


FIG. A2.3 Tensile Designations

A2.24 *Symbols*—The following symbols may be used for the above terms:

Symbol	Term
W	Load
ΔW	Increment of load
L	Distance between gage marks at any time
L_o	Original distance between gage marks
L_u	Distance between gage marks at moment of rupture
ΔL	Increment of distance between gage marks = elongation
A	Minimum cross-sectional area at any time
A_o	Original cross-sectional area
ΔA	Increment of cross-sectional area
A_u	Cross-sectional area at point of rupture measured after breaking specimen
A_T	Cross-sectional area at point of rupture, measured at the moment of rupture
t	Time
Δt	Increment of time
σ	Tensile stress
$\Delta\sigma$	Increment of stress
σ_T	True tensile stress
σ_U	Tensile strength at break (nominal)
σ_{UT}	Tensile strength at break (true)
ε	Strain
$\Delta\varepsilon$	Increment of strain
ε_U	Total strain, at break
ε_T	True strain
%*El*	Percentage elongation
Y.P.	Yield point
E	Modulus of elasticity

A2.25 Relations between these various terms may be defined as follows:

$\sigma = W/A_o$

$\sigma_T = W/A$

$\sigma_U = W/A_o$ (where W is breaking load)

$\sigma_{UT} = W/A_T$ (where W is breaking load)

$\varepsilon = \Delta L/L_o = (L - L_o)/L_o$

$\varepsilon_U = (L_u - L_o)/L_o$

$\varepsilon_T = \int_{L_o}^{L} dL/L = \ln L/L_o$

$\%El = [(L - L_o)/L_o] \times 100 = \varepsilon \times 100$

Percent reduction of area (nominal) = $[(A_o - A_u)/A_o] \times 100$
Percent reduction of area (true) = $[(A_o - A_T)/A_o] \times 100$
Rate of loading = $\Delta W/\Delta t$
Rate of stressing (nominal) = $\Delta\sigma/\Delta = (\Delta W]/A_o)/\Delta t$
Rate of straining = $\Delta\varepsilon/\Delta t = (\Delta L/L_o)\Delta t$

For the case where the volume of the test specimen does not change during the test, the following three relations hold:

$$\sigma_T = \sigma(1+\varepsilon) = \sigma L/L_o \qquad (A2.2)$$

$$\sigma_{UT} = \sigma_U(1+\varepsilon_U) = \sigma_U L_u/L_o$$

$$A = A_o/(1+\varepsilon)$$

DOKUMENTASI PENELITIAN

Gambar L.1 Proses pembuatan pati Kentang

Gambar L.2 Proses menimbangan pati Kentang

Gambar L.3 proses menimbangan gliserin

Gambar L. 4 proses menimbang kitosan

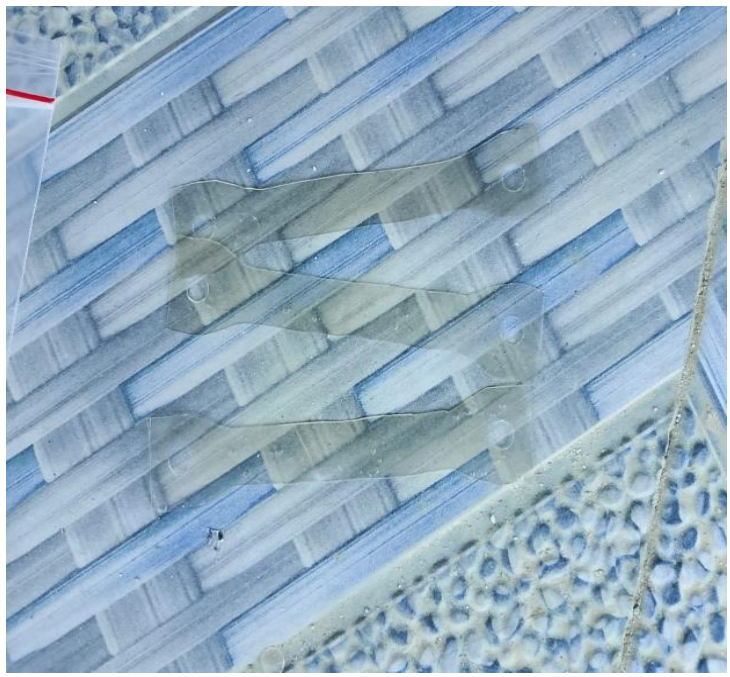
Gambar L. 5 proses menimbang cuka (Asam asetat)

Gambar L. 6 Digunakan untuk mengaduk dan mencampur bahan adonan pembuatan plastik

Gambar L.7 Proses memanaskan campuran hingga bening

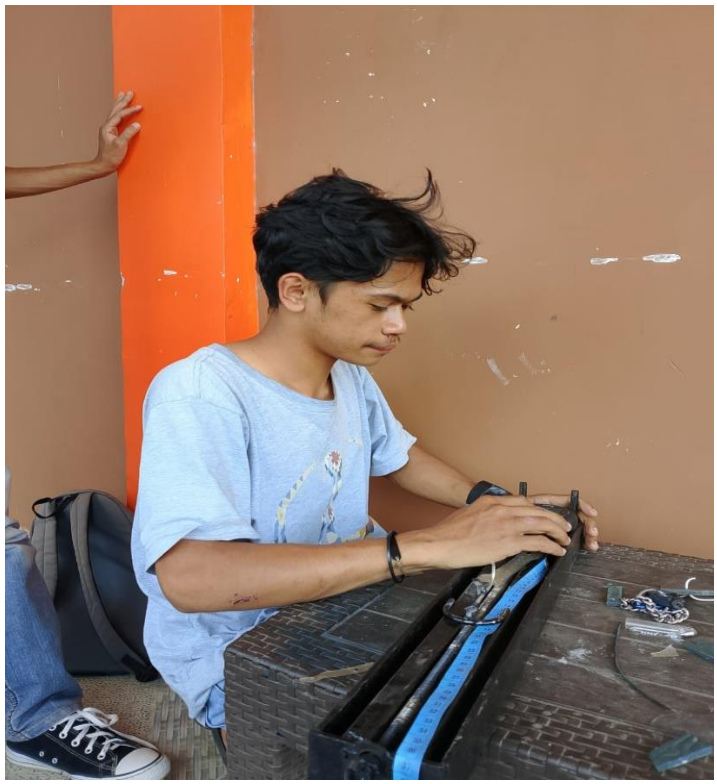
Gambar L. 8 Proses pengeringan

Gambar L. 9 hasil pengeringan bioplastik pati kentang



Gambar L. 10 hasil pengeringan bioplastik

Gambar L. 11 Alat uji tarik



Gambar L.12 Pengambilan data

Gambar L.13 Hasil penelitin