# LAMPIRAN

Lampiran 1 Perhitungan komposisi komposit

Perhitungan komposit ini berdasarkan perhitungan volume total cetakan. Ukuran cetakan yang dipergunakan adalah 35,7 x 25 x 0,7 $cm^3$. Dengan fraksi volume serat sebagai berikut:

1) 70% Resin, 20% Serat Aren, dan 10% Serat Bambu Apus (1A).
2) 70% Resin, 10% Serat Aren, dan 20% Serat Bambu Apus (2B).
3) 70% Resin, 15% Serat Aren, dan 15% Serat Bambu Apus (3C).

Untuk massa jenis serat aren dan serat bambu didapatkan dari literatur jurnal-jurnal penelitian sebelumnya, massa jenis serat sebagai berikut:

1) Massa Jenis Serat Aren 0,51 $gr/cm^3$ (Rudi Hartono, 2019)
2) Massa Jenis Serat Bambu Apus 0,6 $gr/cm^3$ (A.H. Dawam Abdullah, 2017)

Sedangkan untuk massa jenis resin *polyeste*r didapatkan dari hasil pengujian massa jenis menggunakan piknometer dan didapatkan hasil sebagai berikut:

| **Berat Isi** | **Berat Kosong** | **Selisih Berat** | **Berat Jenis** |
|---|---|---|---|
| 53, 7708 | 25, 5223 | 28, 2485 | 1,12994 |

Berikut ini adalah perhitungan yang dilakukan, menghitung volume cetakan dengan asumsi yang dipakai volume cetakan = volume komposit, sehingga perhitungannya adalah:

Volume Cetakan ($V_{cet}$) = Volume Komposit ($V_{komp}$)

Sehingga, = 35,7 x 25 x 0,7 $cm^3$

= 637, 245 $cm^3$ = 637, 245 ml

Perhitungan volume resin menggunakan perbandingan 70% resin dan 30% serat. Perhitungan volume resin sebagai berikut:

Volume Matrik ($V_m$) = 70 % x $V_{Komp}$

= $\frac{70}{100}$ x 637, 245 $cm^3$

= 446, 071 $cm^3$ = 446, 071 ml

Massa Matrik ($m_m$) = $\rho \; x \; V_m$

= 1,1 $gr/cm^3$ x 446, 071 $cm^3$

= 490, 6781

Untuk perhitungan fraksi volume serat sebagai berikut:

1) 70% Resin, 20% Serat Aren, dan 10% Serat Bambu Apus, yaitu:
   a. Menghitung volume serat:

   Volume Serat Aren $(V_s)_A$ = 20 % x $V_{Komp}$
   = $\frac{20}{100}$ x 637, 245 $cm^3$
   = 127, 449 $cm^3$ = 127, 449 ml

   Volume Serat Bambu $(V_s)_B$ = 10 % x $V_{Komp}$
   = $\frac{10}{100}$ x 637, 245 $cm^3$
   = 63, 72 $cm^3$ = 63, 72 ml

   b. Massa serat dapat dihitung dengan menggunakan perhitungan volume serat.

   $\rho = \frac{m}{v}$ , dengan massa jenis serat aren = 0,51 gr/$cm^3$ dan serat bambu apus = 0,6 gr/$cm^3$.

   Sehingga, massa serat $(m_s)_A$ :

   Massa Serat Aren $(m_s)_A$ = $\rho$ x $V_s$
   = 0,51 gr/$cm^3$ x 127, 449 $cm^3$
   = 64, 998 gr

   Massa Serat Bambu $(m_s)_B$ = $\rho$ x $V_s$
   = 0,6 gr/$cm^3$ x 63, 72 $cm^3$
   = 38 gr

2) 70% Resin, 10% Serat Aren, dan 20% Serat Bambu Apus.
   a. Menghitung volume serat:

   Volume Serat Aren $(V_s)_A$ = 10 % x $V_{Komp}$
   = $\frac{10}{100}$ x 637, 245 $cm^3$
   = 63, 72 $cm^3$ = 63, 72 ml

   Volume Serat Bambu $(V_s)_B$ = 10 % x $V_{Komp}$
   = $\frac{10}{100}$ x 637, 245 $cm^3$
   = 127, 449 $cm^3$ = 126, 449 ml

   b. Massa serat dapat dihitung dengan menggunakan perhitungan volume serat.

$\rho = \frac{m}{v}$ , dengan massa jenis serat aren = 0,51 gr/cm$^3$ dan serat bambu apus = 0,6 gr/cm$^3$.

Sehingga, massa serat $(m_s)_A$ :

Massa Serat Aren $(m_s)_A$ = $\rho$ x $V_s$
= 0,51 gr/cm$^3$ x 63, 72 cm$^3$
= 32, 49 gr

Massa Serat Bambu $(m_s)_B$ = $\rho$ x $V_s$
= 0,6 gr/cm$^3$ x 127, 449 cm$^3$
= 76,46 gr

3) 70% Resin, 15% Serat Aren, dan 15% Serat Bambu Apus.

a. Menghitung volume serat:

Volume Serat Aren $(V_s)_A$ = 15 % x $V_{Komp}$
= $\frac{15}{100}$ x 637, 245 cm$^3$
= 95, 58 cm$^3$ = 95, 58 ml

Volume Serat Bambu $(V_s)_B$ = 15 % x $V_{Komp}$
= $\frac{15}{100}$ x 637, 245 cm$^3$
= 95, 58 cm$^3$ = 95, 58 ml

b. Massa serat dapat dihitung dengan menggunakan perhitungan volume serat.

$\rho = \frac{m}{v}$ , dengan massa jenis serat aren = 0,51 gr/cm$^3$ dan serat bambu apus = 0,6 gr/cm$^3$.

Sehingga, massa serat $(m_s)_A$ :

Massa Serat Aren $(m_s)_A$ = $\rho$ x $V_s$
= 0,51 gr/cm$^3$ x 95, 58 cm$^3$
= 48, 74 gr

Massa Serat Bambu $(m_s)_B$ = $\rho$ x $V_s$
= 0,6 gr/cm$^3$ x 95, 58 cm$^3$
= 57, 34 gr

Lampiran 2 Data hasil perhitungan kekuatan tarik maksimum (*stress*)

Rumus Kekuatan Tarik Maksimum $\sigma = \frac{F\ (Gaya/Kekuatan\ (N))}{A_0\ (Luas\ Penampang)}$

| Sample | Spesimen | F (Kgf) | F (N) | Area ($A_0$) | $\sigma$ (N/mm$^2$) |
|---|---|---|---|---|---|
| A1 | 1 | 158,6 | 1555,33 | 101,11 | 15,38255365 |
| | 2 | 218,6 | 2143,73 | 101,58 | 21,10385903 |
| | 3 | 172,22 | 1688,9 | 103,2 | 16,36531008 |
| B2 | 1 | 183,98 | 1804,22 | 94,824 | 19,02703957 |
| | 2 | 163,2 | 1600,44 | 88,423 | 18,09981566 |
| | 3 | 115,22 | 1129,92 | 87,067 | 12,97759197 |
| C3 | 1 | 67,502 | 661,96 | 101,48 | 6,523058731 |
| | 2 | 110,22 | 1080,88 | 100,3 | 10,77647059 |
| | 3 | 102,34 | 1003,61 | 94,287 | 10,64420334 |

| No | Kekuatan Tarik Maksimum (N/mm$^2$) | | | $(X_1 - \bar{X})^2$ | $(X_2 - \bar{X})^2$ | $(X_3 - \bar{X})^2$ |
|---|---|---|---|---|---|---|
| | (20%) A : B (10%) ($X_1$) | (10%) A : B (20%) ($X_2$) | (15%) A : B (15%) ($X_3$) | | | |
| 1 | 15,3826 | 19,027 | 6,5230 | 4,99383 | 5,40822 | 7,79258 |
| 2 | 21,1039 | 18,099 | 10,776 | 12,1565 | 1,95534 | 2,13713 |
| 3 | 16,3653 | 12,977 | 10,644 | 1,56733 | 13,8674 | 1,7679 |
| ∑ | 52,8517 | 50,104 | 27,943 | 18,7177 | 21,2309 | 11,6976 |
| $\bar{X}$ | 17,6172 | 16,701 | 9,3145 | | | |

a) Simpangan Baku$_1$ ($S_1$) = $\sqrt{\frac{\sum(X1 - \bar{X})2}{n-1}}$

= 3,06

b) Simpangan Baku$_2$ ($S_2$) = $\sqrt{\frac{\sum(X2 - \bar{X})2}{n-1}}$

= 3,26

c) Simpangan Baku$_3$ ($S_3$) = $\sqrt{\frac{\sum(X3 - \bar{X})2}{n-1}}$

= 2,24

d) Koefisien Variasi$_1$ ($CV_1$) = $\frac{s}{\bar{X}}$ x 100%

= 17, 36

e) Koefisien Variasi$_2$ ($CV_2$) = $\frac{s}{\bar{X}}$ x 100%

= 19,51

f) Koefisien Variasi$_3$ ($CV_3$) = $\frac{s}{\bar{X}}$ x 100%

= 25, 96

g) Standard Error$_1$ ($E_1$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 1,77

$E_1$ (%) = 15, 22 %

h) Standard Error$_2$ ($E_2$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 1,88

$E_2$ (%) = 17,10 %

i) Standard Error$_3$ ($E_3$) = $\frac{t\ (1{,}96) x\ CV}{\sqrt{n}}$

= 1,40

$E_3$ (%) = 22, 76 %

Lampiran 3 Data hasil perhitungan mulur komposit (*strain*)

Rumus perhitungan mulur/strain = $\frac{\Delta L\ (pertambahan\ panjang\ maks\ (elongation))}{L_0\ (panjang\ awal)}$

| Sample | Spesimen | Panjang awal (mm) | Elongation (mm) | Strain (%) |
|---|---|---|---|---|
| A1 | 1 | 50 | 0,19 | 0,38 |
| | 2 | 50 | 0,7275 | 1,455 |
| | 3 | 50 | 0,56 | 1,12 |
| B2 | 1 | 50 | 0,425 | 0,85 |
| | 2 | 50 | 0,3025 | 0,605 |
| | 3 | 50 | 0,315 | 0,63 |
| C3 | 1 | 50 | 0,66 | 1,32 |
| | 2 | 50 | 0,5975 | 1,195 |
| | 3 | 50 | 0,6775 | 1,355 |

| No | Mulur Komposit (%) | | | $(X_1 - \bar{X})^2$ | $(X_2 - \bar{X})^2$ | $(X_3 - \bar{X})^2$ |
|---|---|---|---|---|---|---|
| | (20%) A : B (10%) ($X_1$) | (10%) A : B (20%) ($X_2$) | (15%) A : B (15%) ($X_3$) | | | |
| 1 | 0,38 | 0,85 | 1,32 | 0,36603 | 0,02403 | 0,0009 |
| 2 | 1,455 | 0,605 | 1,195 | 0,2209 | 0,0081 | 0,00902 |
| 3 | 1,12 | 0,63 | 1,355 | 0,01823 | 0,00422 | 0,00422 |
| ∑ | 2,955 | 2,085 | 3,87 | 0,60515 | 0,03635 | 0,01415 |
| $\bar{X}$ | 0,985 | 0,695 | 1,29 | | | |

a) Simpangan Baku$_1$ ($S_1$) = $\sqrt{\frac{\sum(X1 - \bar{X})2}{n-1}}$

= 0, 55

b) Simpangan Baku$_2$ ($S_2$) = $\sqrt{\frac{\sum(X2 - \bar{X})2}{n-1}}$

= 0, 13

c) Simpangan Baku$_3$ ($S_3$) = $\sqrt{\frac{\sum(X3 - \bar{X})2}{n-1}}$

= 0, 08

d) Koefisien Variasi$_1$ ($CV_1$) = $\frac{s}{\bar{X}}$ x 100%

= 55, 84

e) Koefisien Variasi$_2$ ($CV_2$) = $\frac{s}{\bar{X}}$ x 100%

= 19, 40

f) Koefisien Variasi$_3$ ($CV_3$) = $\frac{s}{\bar{X}}$ x 100%

= 6, 52

g) Standard Error$_1$ ($E_1$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 0, 32

$E_1$ (%) = 48, 96%

h) Standard Error$_2$ ($E_2$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 0, 08

$E_2$ (%) = 17, 00%

i) Standard Error$_3$ ($E_3$) = $\frac{t\ (1{,}96) x\ CV}{\sqrt{n}}$

= 0, 05

$E_3$ (%) = 5, 72%

Lampiran 4 Data hasil perhitungan *modulus elastisitas*

Rumus *Modulus Elastisitas* = $\frac{\sigma\ (kekuatan\ tarik\ maks(stress))}{\varepsilon\ (strain)}$

| Sample | Spesimen | Stress | Strain | E |
|---|---|---|---|---|
| A1 | 1 | 15,383 | 0,0038 | 4048,157895 |
| | 2 | 21,103 | 0,01455 | 1450,378007 |
| | 3 | 16,365 | 0,0112 | 1461,160714 |
| B2 | 1 | 19,028 | 0,0085 | 2238,588235 |
| | 2 | 18,1 | 0,00605 | 2991,735537 |
| | 3 | 12,977 | 0,0063 | 2059,84127 |
| C3 | 1 | 6,523 | 0,0132 | 494,1666667 |
| | 2 | 10,777 | 0,01195 | 901,8410042 |
| | 3 | 10,644 | 0,01355 | 785,5350554 |

| No | Modulus Elastisitas (N/mm$^2$) | | | $(X_1 - \bar{X})^2$ | $(X_2 - \bar{X})^2$ | $(X_3 - \bar{X})^2$ |
|---|---|---|---|---|---|---|
| | (20%) A : B (10%) ($X_1$) | (10%) A : B (20%) ($X_2$) | (15%) A : B (15%) ($X_3$) | | | |
| 1 | 4048,16 | 2238,5 | 494,16 | 2986878,019 | 36659,4589 | 6,85613 |
| 2 | 1450,38 | 2991,7 | 901,84 | 756065,6101 | 315484,647 | 6,85399 |
| 3 | 1461,16 | 2059,8 | 785535 | 737431,5251 | 137058,11 | 2,74202 |
| ∑ | 6959,7 | 7290,1 | 785674 | 4480375,154 | 489202,216 | 4,11304 |
| $\bar{X}$ | 2319,9 | 2430,0 | 261891 | | | |

a) Simpangan Baku$_1$ ($S_1$) = $\sqrt{\frac{\sum(X1 - \bar{X})2}{n-1}}$

= 1496, 73

b) Simpangan Baku$_2$ ($S_2$) = $\sqrt{\frac{\sum(X2 - \bar{X})2}{n-1}}$

= 494, 57

c) Simpangan Baku$_3$ ($S_3$) = $\sqrt{\frac{\sum(X3 - \bar{X})2}{n-1}}$

= 210, 01

d) Koefisien Variasi$_1$ ($CV_1$) = $\frac{s}{\bar{X}}$ x 100%

= 64, 52

e) Koefisien Variasi$_2$ ($CV_2$) = $\frac{s}{\bar{X}}$ x 100%

= 20, 36

f) Koefisien Variasi$_3$ ($CV_3$) = $\frac{s}{\bar{X}}$ x 100%

= 28, 88

g) Standard Error$_1$ ($E_1$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 864, 13

$E_1$ (%) = 56, 55 %

h) Standard Error$_2$ ($E_2$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 285, 54

$E_2$ (%) = 17, 84 %

i) Standard Error$_3$ ($E_3$) = $\frac{t\ (1{,}96) x\ CV}{\sqrt{n}}$

= 121, 25

$E_3$ (%) = 25, 31 %

Lampiran 5 Data hasil pengujian ketebalan sampel komposit

| No | Ketebalan Komposit (mm) | | | $(X_1 - \bar{X})^2$ | $(X_2 - \bar{X})^2$ | $(X_3 - \bar{X})^2$ |
|---|---|---|---|---|---|---|
| | (20%) A : B (10%) ($X_1$) | (10%) A : B (20%) ($X_2$) | (15%) A : B (15%) ($X_3$) | | | |
| 1 | 6,44 | 5,96 | 6,82 | 0,027778 | 0,018678 | 0,064178 |
| 2 | 6,67 | 5,69 | 6,59 | 0,004011 | 0,017778 | 0,000544 |
| 3 | 6,71 | 5,82 | 6,29 | 0,010678 | 1,11E-05 | 0,076544 |
| ∑ | 19,82 | 17,47 | 19,7 | 0,042467 | 0,036467 | 0,141267 |
| $\bar{X}$ | 6,6066 | 5,8233 | 6,5666 | | | |

a) Simpangan Baku$_1$ ($S_1$) = $\sqrt{\frac{\sum(X1 - \bar{X})2}{n-1}}$

= 0,15

b) Simpangan Baku$_2$ ($S_2$) = $\sqrt{\frac{\sum(X2 - \bar{X})2}{n-1}}$

= 0,14

c) Simpangan Baku$_3$ ($S_3$) = $\sqrt{\frac{\sum(X3 - \bar{X})2}{n-1}}$

= 0,327

d) Koefisien Variasi$_1$ ($CV_1$) = $\frac{S}{\bar{X}}$ x 100%

= 2,21

e) Koefisien Variasi$_2$ ($CV_2$) = $\frac{S}{\bar{X}}$ x 100%

= 2,32

f) Koefisien Variasi$_3$ ($CV_3$) = $\frac{S}{\bar{X}}$ x 100%

= 4,05

g) Standard Error$_1$ ($E_1$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 0,08

$E_1$ (%) = 1,93 %

h) Standard Error$_2$ ($E_2$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 0,08

$E_2$ (%) = 2,03 %

i) Standard Error$_3$ ($E_3$) = $\frac{t\ (1{,}96) x\ CV}{\sqrt{n}}$

= 0,15

$E_3$ (%) = 3,55 %

Lampiran 6 Data hasil pengujian massa jenis (*density*) komposit.

| Variasi | Berat (g) | D | r | Tinggi | Volume | Densitas (g/cm$^3$) |
|---|---|---|---|---|---|---|
| $AX_1$ | 2,8 | 3,78 | 1,89 | 0,19 | 2,131115 | 1,313866 |
| $AX_1$ | 2,7 | 3,78 | 1,89 | 0,18 | 2,018951 | 1,337328 |
| $BX_2$ | 2,4 | 3,78 | 1,89 | 0,17 | 1,906787 | 1,258662 |
| $BX_2$ | 2,3 | 3,78 | 1,89 | 0,16 | 1,794623 | 1,281606 |
| $CX_3$ | 2,5 | 3,78 | 1,89 | 0,17 | 1,906787 | 1,311106 |
| $CX_3$ | 2,57 | 3,78 | 1,89 | 0,17 | 1,906787 | 1,347817 |

| **No** | **Densitas Komposit (g/cm$^3$)** | | | **$(X_1 - \bar{X})^2$** | **$(X_2 - \bar{X})^2$** | **$(X_3 - \bar{X})^2$** |
|---|---|---|---|---|---|---|
| | **(20%) A : B (10%) ($X_1$)** | **(10%) A : B (20%) ($X_2$)** | **(15%) A : B (15%) ($X_3$)** | | | |
| 1 | 1,31386 | 1,2586 | 1,3111 | 0,00014 | 0,00013 | 0,00034 |
| 2 | 1,33732 | 1,2816 | 1,3478 | 0,00014 | 0,00013 | 0,00034 |
| ∑ | 2,65119 | 2,5402 | 2,6589 | 0,00028 | 0,00026 | 0,00067 |
| $\bar{X}$ | 1,32559 | 1,2701 | 1,3294 | | | |

a) Simpangan Baku$_1$ ($S_1$) $= \sqrt{\frac{\sum(X1 - \bar{X})2}{n-1}}$

$= 0,02$

b) Simpangan Baku$_2$ ($S_2$) $= \sqrt{\frac{\sum(X2 - \bar{X})2}{n-1}}$

$= 0,02$

c) Simpangan Baku$_3$ ($S_3$) $= \sqrt{\frac{\sum(X3 - \bar{X})2}{n-1}}$

= 0,03

d) Koefisien Variasi$_1$ ($CV_1$) = $\frac{S}{\bar{X}}$ x 100%

= 1,25

e) Koefisien Variasi$_2$ ($CV_2$) = $\frac{S}{\bar{X}}$ x 100%

= 1,28

f) Koefisien Variasi$_3$ ($CV_3$) = $\frac{S}{\bar{X}}$ x 100%

= 1,95

g) Standard Error$_1$ ($E_1$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 0,01

$E_1$ (%) = 1,10 %

h) Standard Error$_2$ ($E_2$) = $\frac{t\ (1{,}96)\ x\ CV}{\sqrt{n}}$

= 0,01

$E_2$ (%) = 1,12 %

i) Standard Error$_3$ ($E_3$) = $\frac{t\ (1{,}96) x\ CV}{\sqrt{n}}$

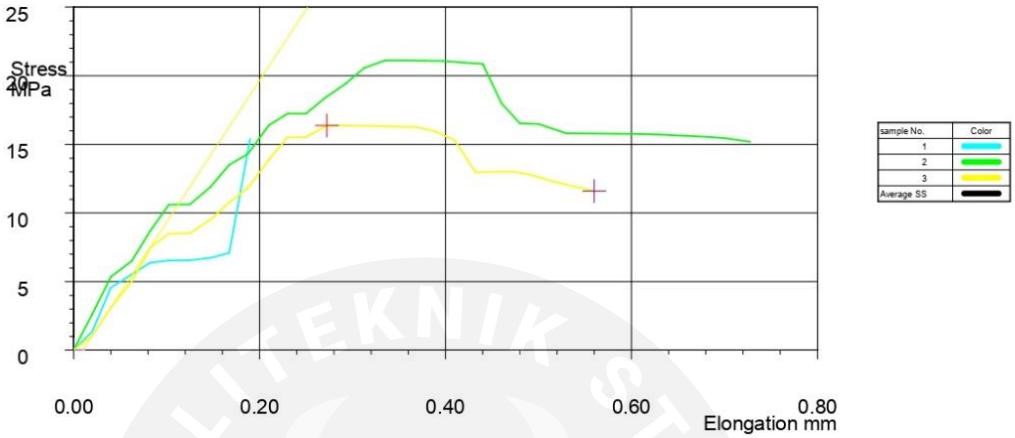
= 0,02

$E_3$ (%) = 1,71 %

Lampiran 7 Data hasil pengujian kekuatan tarik sample A1

| | |
|---|---|
| Sample name | KOMPOSIT KODE SAMPEL A |
| Lot No. | 205-1898 |
| Preparation | NELA ROHMAWATI |
| Operator | HARITS |
| User | NELA ROHMAWATI |

Tension testResult




Tension testResult

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Machine name | RTF | | | Test type | Tension | | |
| Strain input 1 | 50 mm | | 100 %RO | Test speed | 5.0 mm/min | | |
| Strain input 2 | Not used | | | Chart speed OFF | | | |
| Machine rigidity | 0 mm/kgf | | | | | | |
| Point data(Load) | 0 | 0 | 0 | Point data(Elong) | 0 | 0 | 0 |
| N | 0 | 0 | 0 | mm | 0 | 0 | 0 |
| Elastic modulus anal. | Interval | 1 | 100 | Initial sample length | Gage leng | 50 mm | |
| Load | Pitch | 5 N | | Origin of elongation | Start | | |
| Elong adjust | No | | | Break point measurem | 0.5 N | | |
| Save SS curve | Yes | | | | | | |

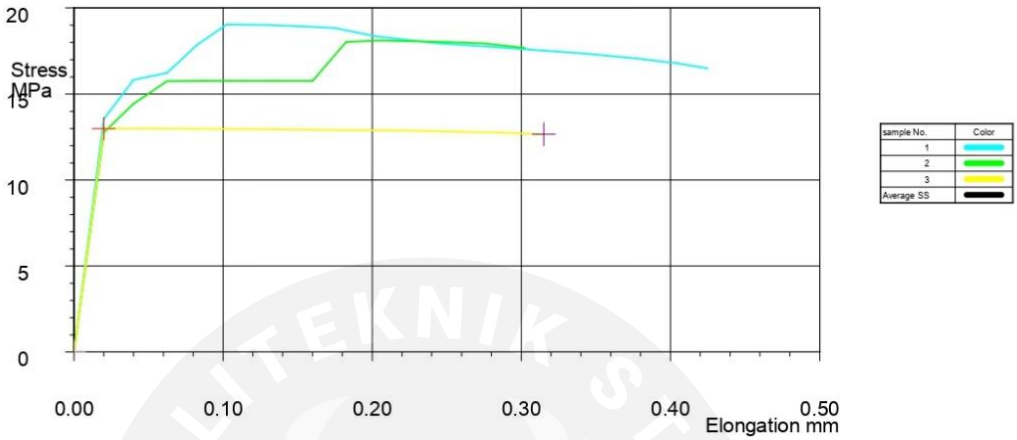
| | | | |
|---|---|---|---|
| Test date | 2022/06/13 | Temperature | 25 C |
| Humidity | 60 %RH | Sample name | KOMPOSIT KODE SAMPEL A |
| Lot No. | 205-1898 | Preparation | NELA ROHMAWATI |
| Operator | HARITS | User | NELA ROHMAWATI |

| TestID=1489 | Width | Thickness | Sectional ar | Maximum poin | Maximum poin | Break | Break |
|---|---|---|---|---|---|---|---|
| | | | | Load | Stress | Elongation | Strain |
| Test No | mm | mm | mm2 | kgf | N/mm2 | mm | %GL |
| 1 | 15.700 | 6.4400 | 101.11 | 158.60 | 15.383 | 0.1900 | 0.3800 |
| 2 | 15.230 | 6.6700 | 101.58 | 218.60 | 21.103 | 0.7275 | 1.4550 |
| 3 | 15.380 | 6.7100 | 103.20 | 172.22 | 16.365 | 0.5600 | 1.1200 |
| Average | 15.437 | 6.6067 | 101.96 | 183.14 | 17.617 | 0.4925 | 0.9850 |

Lampiran 8 Data hasil pengujian kekuatan tarik sample B2

| | |
|---|---|
| Sample name | KOMPOSIT KODE SAMPEL B |
| Lot No. | 205-1898 |
| Preparation | NELA ROHMAWATI |
| Operator | HARITS |
| User | NELA ROHMAWATI |

Tension testResult




Tension testResult

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Machine name | RTF | | | Test type | Tension | | | |
| Strain input 1 | 50 mm | | 100 %RO | Test speed | 5.0 mm/min | | | |
| Strain input 2 | Not used | | | Chart speed OFF | | | | |
| Machine rigidity | 0 mm/kgf | | | | | | | |
| Point data(Load) | 0 | 0 | 0 | Point data(Elong) | 0 | 0 | 0 | |
| N | 0 | 0 | 0 | mm | 0 | 0 | 0 | |
| Elastic modulus anal. | Interval | 1 | 100 | Initial sample length | Gage leng | 50 mm | | |
| Load | Pitch | 5 N | | Origin of elongation | Start | | | |
| Elong adjust | No | | | Break point measurem | 0.5 N | | | |
| Save SS curve | Yes | | | | | | | |

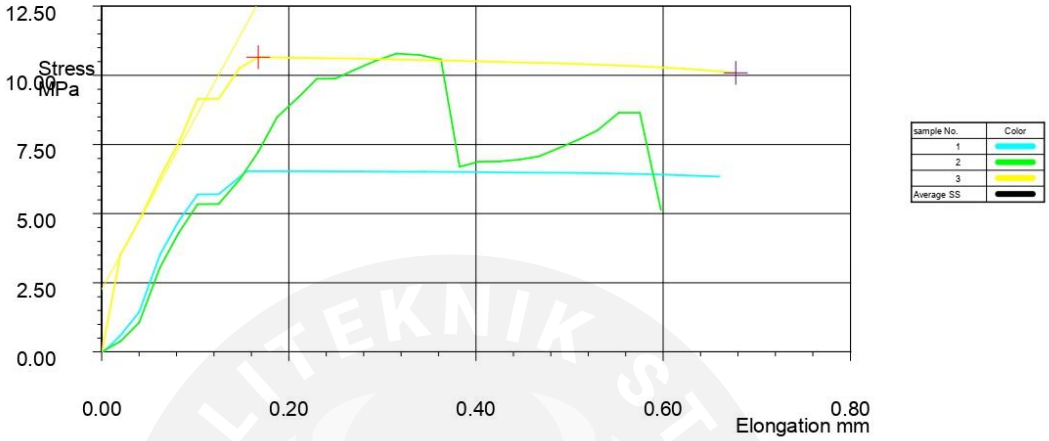
| | | | |
|---|---|---|---|
| Test date | 2022/06/13 | Temperature | 25 C |
| Humidity | 60 %RH | Sample name | KOMPOSIT KODE SAMPEL B |
| Lot No. | 205-1898 | Preparation | NELA ROHMAWATI |
| Operator | HARITS | User | NELA ROHMAWATI |

| TestID=1490 | Width | Thickness | Sectional ar | Maximum poin | Maximum poin | Break | Break |
|---|---|---|---|---|---|---|---|
| | | | | Load | Stress | Elongation | Strain |
| Test No | mm | mm | mm2 | kgf | N/mm2 | mm | %GL |
| 1 | 15.910 | 5.9600 | 94.824 | 183.98 | 19.028 | 0.4250 | 0.8500 |
| 2 | 15.540 | 5.6900 | 88.423 | 163.20 | 18.100 | 0.3025 | 0.6050 |
| 3 | 14.960 | 5.8200 | 87.067 | 115.22 | 12.977 | 0.3150 | 0.6300 |
| Average | 15.470 | 5.8233 | 90.104 | 154.13 | 16.702 | 0.3475 | 0.6950 |

Lampiran 9 Data hasil pengujian kekuatan tarik sample C3

| | |
|---|---|
| Sample name | KOMPOSIT KODE SAMPEL C |
| Lot No. | 205-1898 |
| Preparation | NELA ROHMAWATI |
| Operator | HARITS |
| User | NELA ROHMAWATI |

Tension testResult




Tension testResult

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Machine name | RTF | | | Test type | Tension | | | |
| Strain input 1 | 50 mm | | 100 %RO | Test speed | 5.0 mm/min | | | |
| Strain input 2 | Not used | | | Chart speed OFF | | | | |
| Machine rigidity | 0 mm/kgf | | | | | | | |
| Point data(Load) | 0 | 0 | 0 | Point data(Elong) | 0 | 0 | 0 | |
| N | 0 | 0 | 0 | mm | 0 | 0 | 0 | |
| Elastic modulus anal. | Interval | 1 | 100 | Initial sample length | Gage leng | 50 mm | | |
| Load | Pitch | 5 N | | Origin of elongation | Start | | | |
| Elong adjust | No | | | Break point measurem | 0.5 N | | | |
| Save SS curve | Yes | | | | | | | |

| | | | |
|---|---|---|---|
| Test date | 2022/06/13 | Temperature | 25 C |
| Humidity | 60 %RH | Sample name | KOMPOSIT KODE SAMPEL C |
| Lot No. | 205-1898 | Preparation | NELA ROHMAWATI |
| Operator | HARITS | User | NELA ROHMAWATI |

| TestID=1491 | Width | Thickness | Sectional ar | Maximum poin | Maximum poin | Break | Break |
|---|---|---|---|---|---|---|---|
| | | | | Load | Stress | Elongation | Strain |
| Test No | mm | mm | mm2 | kgf | N/mm2 | mm | %GL |
| 1 | 14.880 | 6.8200 | 101.48 | 67.502 | 6.5230 | 0.6600 | 1.3200 |
| 2 | 15.220 | 6.5900 | 100.30 | 110.22 | 10.777 | 0.5975 | 1.1950 |
| 3 | 14.990 | 6.2900 | 94.287 | 102.34 | 10.644 | 0.6775 | 1.3550 |
| Average | 15.030 | 6.5667 | 98.690 | 93.356 | 9.3148 | 0.6450 | 1.2900 |