LAMPIRAN

Lampiran 1. Data Penggunaan Bahan Baku

Kategori	Jenis Benang	Nomor Benang
Multifilamen	Poliester	300D/68F
Monofilamen	Nilon	0,18 mm (213 D)
		0,20 mm (253 D)
		0,23 mm (332 D)

Perhitungan:

Nilon 0,18 mm = 0,00708”

$$\emptyset = \frac{1}{28\sqrt{Ne}}$$

$$0{,}00708'' = \frac{1}{28\sqrt{Ne}}$$

$$0{,}1984\sqrt{Ne} = 1$$

$$\text{Ne} = (5{,}044)^2$$

$$\text{Ne} = 25{,}44 \approx 25$$

$$\frac{591}{Ne} = \frac{D}{9}$$

$$D = \frac{591 \times 9}{Ne}$$

$$D = \frac{591 \times 9}{25}$$

$$D = 212{,}76 \approx \mathbf{213}$$

Nilon 0,20 mm = 0,00787”

$$\emptyset = \frac{1}{28\sqrt{Ne}}$$

$$0{,}00787'' = \frac{1}{28\sqrt{Ne}}$$

$$0{,}2204\sqrt{Ne} = 1$$

$$\text{Ne} = (4{,}538)^2$$

$$\text{Ne} = 20{,}59 \approx 21$$

$$\frac{591}{Ne} = \frac{D}{9}$$

$$D = \frac{591 \times 9}{Ne}$$

$$D = \frac{591 \times 9}{21}$$

$$D = 253{,}28 \approx \mathbf{253}$$

Nilon 0,23 mm = 0,00905”

$$\emptyset = \frac{1}{28\sqrt{Ne}}$$

$$0{,}00905'' = \frac{1}{28\sqrt{Ne}}$$

$$0{,}2534\sqrt{Ne} = 1$$

$$\text{Ne} = (3{,}946)^2$$

$$\text{Ne} = 15{,}57 \approx 16$$

$$\frac{591}{Ne} = \frac{D}{9}$$

$$D = \frac{591 \times 9}{Ne}$$

$$D = \frac{591 \times 9}{16}$$

$$D = 332{,}43 \approx \mathbf{332}$$

Lampiran 2. Data Hasil Pengujian CPI, WPI dan *Tuck Per Inch*

Sampel	n	*Course Per Inch* (CPI)	*Wale Per Inch* (WPI)	*Tuck Per Inch*
1 (0,18 mm)	10	24	15	8
		24	15	8
		24	15	7,5
		24	15	8
		23	15	7,5
		23	15	8
		24	15	8
		24	15	8
		23	15	7,5
		24	15	8
2 (0,20 mm)	10	25	14	1,8
		24	13	1,92
		24	13	1,9
		25	14	1,9
		25	14	1,96
		25	14	1,86
		25	14	1,88
		25	14	1,9
		25	13	1,89
		25	14	1,94

Sampel	n	*Course Per Inch* (CPI)	*Wale Per Inch* (WPI)	*Tuck Per Inch*
3 (0,23 mm)	10	25	13	1,61
		25	13	1,62
		26	12	1,64
		25	13	1,66
		25	13	1,58
		25	13	1,61
		25	13	1,64
		25	13	1,6
		25	12	1,61
		26	13	1,68

Lampiran 3. Data Hasil Pengujian Gramasi Kain

Sampel	Gramasi (g/m^2)	
	n	
1 (0,18 mm)	5	183
		177,5
		185,5
		180
		181,5
2 (0,20 mm)	5	176,5
		169
		168,5
		171
		166,5
3 (0,23 mm)	5	165
		162
		160,5
		160
		162,5

Lampiran 4. Data Hasil Pengujian Daya Tembus Udara Kain

Sampel	Daya Tembus Udara Kain (cm^3/cm^2/s)	
	n	
1 (0,18 mm)	5	320
		321
		317
		328
		321
2 (0,20 mm)	5	334
		331
		327
		326
		329
3 (0,23 mm)	5	356
		349
		358
		359
		359

Lampiran 5. Data Hasil Pengujian Ketebalan Kain

Sampel	Ketebalan Kain (mm)	
	n	
1 (0,18 mm)	10	2,48
		2,49
		2,47
		2,46
		2,47
		2,47
		2,48
		2,46
		2,46
		2,47
2 (0,20 mm)	10	1,8
		1,92
		1,9
		1,9
		1,96
		1,86
		1,88
		1,9
		1,89
		1,94
3 (0,23 mm)	10	1,61
		1,62
		1,64
		1,66
		1,58
		1,61
		1,64
		1,6
		1,61
		1,68

Lampiran 6. Data Hasil Pengujian Kekakuan Kain Diameter Benang 0,18 mm

Kekakuan Kain Diameter Benang 0,18 mm											
Sampel	**n**	**Panjang lengkung Lusi (cm)**	**Panjang lengkung Pakan (cm)**	**Panjang Lengkung Rata-Rata Lusi x 0,5 (cm)**	**Panjang Lengkung Rata-Rata Pakan x 0,5 (cm)**	**Kekakuan lentur Lusi (mg.cm)**	**Kekakuan lentur Pakan (mg.cm)**	**Bending Modulus Lusi (kg/cm²)**	**Bending Modulus Pakan (kg/cm²)**	**Kekakuan Total (mg.cm)**	**Bending Modulus Total (kg/cm²)**
1	1	3,65	2,35	2,027	2,167	151,179	184,609	0,120	0,147	167,060	0,133
	2	3,6	3,1								
	3	3,95	6,4								
	4	3,8	6,45								
2	5	4,8	1,6								
	6	3,45	2,45								
	7	4,1	6,15								
	8	4,9	6,45								
3	9	4,5	1,8								
	10	3,75	2,4								
	11	4,15	6,4								
	12	4	6,45								
$\bar{x}$		**4,054**	**4,333**								
W (g/m²)		**181,5**									
g (cm)		**0,2471**									

Perhitungan:

- Panjang lengkung rata-rata lusi (C_l) x 0,5 = $4{,}054 \times 0{,}5 = 2{,}027$ cm
- Panjang lengkung rata-rata pakan (C_p) x 0,5 = $4{,}333 \times 0{,}5 = 2{,}167$ cm
- Kekakuan lentur lusi

  $G_l = 0{,}1 \times W \times (C_l)^3 = 0{,}1 \times 181{,}5 \times (2{,}027)^3 = 151{,}179$ mg.cm
- Kekakuan lentur pakan

  $G_p = 0{,}1 \times W \times (C_p)^3 = 0{,}1 \times 181{,}5 \times (2{,}167)^3 = 184{,}609$ mg.cm
- Bending Modulus Lusi

  $Q_l = \frac{12\,G_l \times 10^{-6}}{g^3} = Q_l = \frac{12\,.151{,}179 \times 10^{-6}}{0{,}2471^3} = 0{,}120$ kg/cm²
- Bending Modulus Pakan

  $Q_p = \frac{12\,G_p \times 10^{-6}}{g^3} = Q_p = \frac{12\,.184{,}609 \times 10^{-6}}{0{,}2471^3} = 0{,}147$ kg/cm²
- Kekakuan total

  $G_T = \sqrt{G_l \times G_p} = \sqrt{151{,}179 \times 184{,}609} = 167{,}060$ mg.cm
- Bending Modulus Total

  $Q_T = \frac{12\,G_T \times 10^{-6}}{g^3} = Q_T = \frac{12\,.167{,}060 \times 10^{-6}}{0{,}2471^3} = 0{,}133$ kg/cm²

Lampiran 7. Data Hasil Pengujian Kekakuan Kain Diameter Benang 0,20 mm

Kekakuan Kain Diameter Benang 0,20 mm											
Sampel	**n**	**Panjang lengkung Lusi (cm)**	**Panjang lengkung Pakan (cm)**	**Panjang Lengkung Rata-Rata Lusi x 0,5 (cm)**	**Panjang Lengkung Rata-Rata Pakan x 0,5 (cm)**	**Kekakuan lentur Lusi (mg.cm)**	**Kekakuan lentur Pakan (mg.cm)**	**Bending Modulus Lusi (kg/cm²)**	**Bending Modulus Pakan (kg/cm²)**	**Kekakuan Total (mg.cm)**	**Bending Modulus Total (kg/cm²)**
1	1	3,9	2,2	1,802	2,233	99,664	189,703	0,176	0,335	137,501	0,242
	2	4	1,45								
	3	3,1	6,2								
	4	2,6	6,05								
2	5	4,4	4								
	6	4,3	2								
	7	2,15	6,15								
	8	2,35	6,2								
3	9	4,55	4,9								
	10	4,7	2,1								
	11	3,85	6,25								
	12	3,35	6,1								
$\bar{x}$		**3,604**	**4,467**								
W (g/m²)		**170,3**									
g (cm)		**0,1895**									

Perhitungan:

- Panjang lengkung rata-rata lusi (C_l) x 0,5 = $3{,}604 \times 0{,}5 = 1{,}802$ cm
- Panjang lengkung rata-rata pakan (C_p) x 0,5 = $4{,}647 \times 0{,}5 = 2{,}631$ cm
- Kekakuan lentur lusi

  $G_l = 0{,}1 \times W \times (C_l)^3 = 0{,}1 \times 170{,}3 \times (1{,}802)^3 = 99{,}664$ mg.cm
- Kekakuan lentur pakan

  $G_p = 0{,}1 \times W \times (C_p)^3 = 0{,}1 \times 170{,}3 \times (2{,}233)^3 = 189{,}703$ mg.cm
- Bending Modulus Lusi

  $Q_l = \frac{12\, G_l \times 10^{-6}}{g^3} = Q_l = \frac{12\, .99{,}664 \times 10^{-6}}{0{,}1895^3} = 0{,}176$ kg/cm²
- Bending Modulus Pakan

  $Q_p = \frac{12\, G_p \times 10^{-6}}{g^3} = Q_p = \frac{12\, .189{,}703 \times 10^{-6}}{0{,}1895^3} = 0{,}335$ kg/cm²
- Kekakuan total

  $G_T = \sqrt{G_l \times G_p} = \sqrt{99{,}664 \times 189{,}703} = 137{,}501$ mg.cm
- Bending Modulus Total

  $Q_T = \frac{12\, G_T \times 10^{-6}}{g^3} = Q_T = \frac{12\, .137{,}501 \times 10^{-6}}{0{,}1895^3} = 0{,}242$ kg/cm²

Lampiran 8. Data Hasil Pengujian Kekakuan Kain Diameter Benang 0,23 mm

Kekakuan Kain Diameter Benang 0,23 mm											
Sampel	**n**	**Panjang lengkung Lusi (cm)**	**Panjang lengkung Pakan (cm)**	**Panjang Lengkung Rata-Rata Lusi x 0,5 (cm)**	**Panjang Lengkung Rata-Rata Pakan x 0,5 (cm)**	**Kekakuan lentur Lusi (mg.cm)**	**Kekakuan lentur Pakan (mg.cm)**	**Bending Modulus Lusi (kg/cm²)**	**Bending Modulus Pakan (kg/cm²)**	**Kekakuan Total (mg.cm)**	**Bending Modulus Total (kg/cm²)**
1	1	3,2	3,35	1,573	2,192	63,042	170,545	0,176	0,477	103,690	0,290
	2	2,8	3,4								
	3	3,05	5,3								
	4	3,4	5,7								
2	5	4,05	3,1								
	6	3,15	3,05								
	7	2,9	5,45								
	8	2,55	5,7								
3	9	3,95	3,4								
	10	3,25	3,25								
	11	2,85	5,3								
	12	2,6	5,6								
$\bar{x}$		**3,146**	**4,383**								
W (g/m²)		**162**									
g (cm)		**0,1625**									

Perhitungan:

- Panjang lengkung rata-rata lusi (C_l) x 0,5 = $3{,}146 \times 0{,}5 = 1{,}573$ cm
- Panjang lengkung rata-rata pakan (C_p) x 0,5 = $4{,}383 \times 0{,}5 = 2{,}192$ cm
- Kekakuan lentur lusi

  $G_l = 0{,}1 \times W \times (C_l)^3 = 0{,}1 \times 162 \times (1{,}573)^3 = 63{,}024$ mg.cm
- Kekakuan lentur pakan

  $G_p = 0{,}1 \times W \times (C_p)^3 = 0{,}1 \times 162 \times (2{,}192)^3 = 170{,}545$ mg.cm
- Bending Modulus Lusi

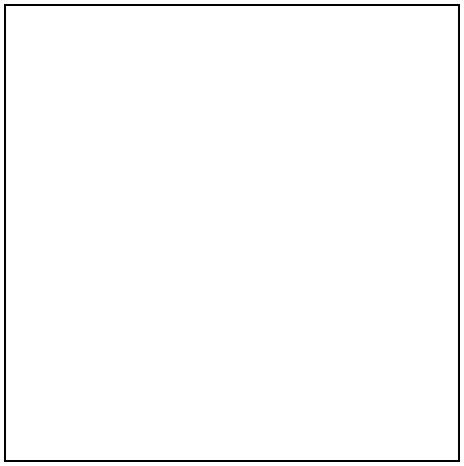
  $Q_l = \frac{12\,G_l \times 10^{-6}}{g^3} = Q_l = \frac{12\,.63{,}024 \times 10^{-6}}{0{,}1625^3} = 0{,}176$ kg/cm²
- Bending Modulus Pakan

  $Q_p = \frac{12\,G_p \times 10^{-6}}{g^3} = Q_p = \frac{12\,.170{,}545 \times 10^{-6}}{0{,}1625^3} = 0{,}447$ kg/cm²
- Kekakuan total

  $G_T = \sqrt{G_l \times G_p} = \sqrt{63{,}024 \times 170{,}545} = 103{,}690$ mg.cm
- Bending Modulus Total

  $Q_T = \frac{12\,G_T \times 10^{-6}}{g^3} = Q_T = \frac{12\,.103{,}690 \times 10^{-6}}{0{,}1625^3} = 0{,}290$ kg/cm²

Lampiran 9. Kain *Spacer* Rajut Pakan Variasi Benang Monifilamen 0,18 mm



Lampiran 10. Kain *Spacer* Rajut Pakan Variasi Benang Monifilamen 0,20 mm

Lampiran 11. Kain *Spacer* Rajut Pakan Variasi Benang Monifilamen 0,23 mm