

## LAMPIRAN

### 1. Tabel perhitungan Impak

No Sps	Variasi	Sudut ( $\beta^0$ )	Luas Penampang ( $\text{mm}^2$ )	Energi Serap (J)	Kekuatan Impak ( $\text{J}/\text{mm}^2$ )
1	Fraksi volume 30:70	80.93	28.43	0.438	0.0154
2		79.523	32.56	0.467	0.0143
3		85.808	28.28	0.362	0.0128
4		100.864	28.92	0.361	0.0124
5		101.576	29.21	0.321	0.011
Min				<b>0.321</b>	<b>0.011</b>
Max				<b>0.467</b>	<b>0.0154</b>
Rata-rata				<b>0.3902</b>	<b>0.0132</b>
Standar Deviasi				<b>0.06047</b>	<b>0.0017</b>

No Sps	Variasi	Sudut ( $\beta^0$ )	Luas Penampang ( $\text{mm}^2$ )	Energi Serap (J)	Kekuatan Impak ( $\text{J}/\text{mm}^2$ )
1	Fraksi volume 40:60	95.475	29.30	0.662	0.0226
2		97.458	28.842	0.551	0.0191
3		97.166	28.27	0.567	0.0200
4		96.181	29.362	0.622	0.0212
5		96.034	29.784	0.631	0.0211
Min				<b>0.551</b>	<b>0.0191</b>
Max				<b>0.662</b>	<b>0.0226</b>
Rata-rata				<b>0.6069</b>	<b>0.0208</b>
Standar Deviasi				<b>0.04632</b>	<b>0.00131</b>

No Sps	Variasi	Sudut ( $\beta^0$ )	Luas Penampang ( $\text{mm}^2$ )	Energi Serap (J)	Kekuatan Impak ( $\text{J}/\text{mm}^2$ )
1	Fraksi volume 50:50	97.089	33.256	0.572	0.01719
2		99.486	33.489	0.438	0.01307
3		97.517	33.194	0.549	0.016503
4		98.823	29.274	0.475	0.01621
5		98.947	29.753	0.468	0.01572
Min				<b>0.438</b>	<b>0.01307</b>
Max				<b>0.572</b>	<b>0.01719</b>
Rata-rata				<b>0.50001</b>	<b>0.01575</b>
Standar Deviasi				<b>0.05697</b>	<b>0.001585</b>

## 2. Tabel Perhitungan Bending

No. Sps	Var.	L (mm)	d (mm)	b (mm)	D (mm)	$\sigma$ (MPa)	$\epsilon$ (%)	E (GPa)
1	50/50	80	2.97	12.61	12.21	32	3.4	1.7
2		80	2.89	13.14	12.54	35.1	3.4	2.04
3		80	2.98	13.05	12.17	38.5	3.4	2.21
4		80	2.9	12.89	12.5	34.9	3.4	1.87
5		80	3.03	13.08	12.32	36.1	3.5	2.01
Min						<b>32</b>	<b>3.4</b>	<b>1.7</b>
Max						<b>38.5</b>	<b>3.5</b>	<b>2.21</b>
Rata - rata						<b>35.32</b>	<b>3.42</b>	<b>1.966</b>
Standar Dev						<b>2.34350</b>	<b>0.0447213</b>	<b>0.19165</b>

No. Sps	Var.	L (mm)	d (mm)	b (mm)	D (mm)	$\sigma$ (MPa)	$\epsilon$ (%)	E (GPa)
1	40/60	80	2.86	13.04	13.43	38.5	3.6	1.93
2		80	2.81	12.81	12.53	37.2	3.3	2.01
3		80	2.85	12.84	14.23	34.7	3.8	1.96
4		80	2.87	13	13.75	36.9	3.7	1.9
5		80	2.91	12.88	13.93	34.4	3.8	1.83
Min						<b>34.4</b>	<b>3.3</b>	<b>1.83</b>
Max						<b>38.5</b>	<b>3.8</b>	<b>2.01</b>
Rata - rata						<b>36.34</b>	<b>3.64</b>	<b>1.926</b>
Standar Dev						<b>1.7444</b>	<b>0.2073644</b>	<b>0.06730</b>

No. Sps	Var.	L (mm)	d (mm)	b (mm)	D (mm)	$\sigma$ (MPa)	$\epsilon$ (%)	E (GPa)
1	30/70	80	3.26	12.97	10.14	35.4	3.1	1.8
2		80	2.8	13.06	14.09	39.2	3.7	1.93
3		80	2.81	13.3	12.91	35.8	3.4	1.87
4		80	3.23	12.92	11.23	40.9	3.4	2.03
5		80	2.8	12.85	12.58	40.6	3.3	1.95
Min						<b>35.4</b>	<b>3.1</b>	<b>1.8</b>
Max						<b>40.9</b>	<b>3.7</b>	<b>2.03</b>
Rata - rata						<b>38.38</b>	<b>3.38</b>	<b>1.916</b>
Standar Dev						<b>2.6214</b>	<b>0.2167948</b>	<b>0.0864</b>