

LAMPIRAN

2

| | | | | | | | | |
|----|----|----|---------|--------------|--------------|--------------|-------------|-------------|
| 3. | 20 | 30 | Tarik | 1 01 | 2 32 | 3 43 | 4 54 | 5 3c |
| | | | | $l_1 = 66,7$ | $l_2 = 66,7$ | $l_3 = 66,7$ | $l_4 = 67$ | $l_5 =$ |
| | | | | $t = 5$ | $t = 5$ | $t = 5$ | $t = 5$ | $t =$ |
| | | | | $w = 5$ | $w = 5$ | $w = 5$ | $w = 5$ | $w =$ |
| | | | | $F = 0,91$ | $F = 0,23$ | $F = 0,24$ | $F = 0,48$ | $F =$ |
| | | | Bending | $l_1 =$ | $l_2 =$ | $l_3 =$ | $l_4 =$ | $l_5 =$ |
| | | | | $l_1 = 0,0$ | $l_2 = 0,0$ | $l_3 = 0,0$ | $l_4 = 0,0$ | $l_5 = 0,0$ |
| | | | | $t = 5$ | $t = 5$ | $t = 5$ | $t = 5$ | $t = 5$ |
| | | | | $w = 14$ | $w = 15$ | $w = 14$ | $w = 14$ | $w = 14$ |
| | | | | $F =$ | $F =$ | $F =$ | $F =$ | $F =$ |
| | | | Impact | 11,91 | 12,92 | 13,93 | 14,94 | 15,95 |
| | | | | $t = 5,4,8$ | $t = 5,5$ | $t = 5,5$ | $t = 5,5$ | $t = 5,5$ |
| | | | | $t = 10$ | $t = 10$ | $t = 10$ | $t = 9,8$ | $t = 9,5$ |
| | | | | $w = 9$ | $w = 9,5$ | $w = 10$ | $w = 9,7$ | $w = 10$ |
| | | | | $F = 0,6$ | $F = 0,9$ | $F = 0,9$ | $F = 0,9$ | $F =$ |

| No. | Kategori Pengujian (Strain) | Waktu Pengujian (detik) | TSP (Mikron) | Jumlah Spektrometer (g) | | | | |
|-----|-----------------------------|-------------------------|--------------|-------------------------|-------|-------|-------|----|
| | | | | 1 | 2 | 3 | 4 | 5 |
| 2. | 30 | Tarik | 1 | 2 | 3 | 4 | 5 | |
| | | | Bending | 0,0 | 0,14 | 0,1 | 0,1 | |
| | | | | 6 | 7 | 8 | 9 | 10 |
| | | | | 11,91 | 12,92 | 13,93 | 14,94 | |
| | | | | 11 | 12 | 13 | 14 | 15 |
| | 16 | 17 | | 18 | 19 | 20 | | |
| | 20 | Tarik | 16 | 17 | 18 | 19 | 20 | |
| | | | Bending | 0,05 | 0,10 | 0,05 | 0,1 | |
| | | | | 21 | 22 | 23 | 24 | 25 |
| | | | | 0,10 | 0,16 | 0,20 | 0,20 | |
| | | | | 26 | 27 | 28 | 29 | 30 |
| | 31 | 32 | | 33 | 34 | 35 | | |
| | 10 | Tarik | 31 | 32 | 33 | 34 | 35 | |
| | | | Bending | 0,12 | 0,08 | 0,08 | 0,05 | |
| | | | | 36 | 37 | 38 | 39 | 40 |
| 7,0 | | | | 7,04 | 7,07 | 7,14 | | |
| 41 | | | | 42 | 43 | 44 | 45 | |
| 41 | 42 | 43 | | 44 | 45 | | | |

| No. | Aspek yang diteliti | Waktu pengamatan (menit) | SD | Sifat Sifatnya (p) | | | | |
|-----|---------------------|--------------------------|----|--------------------|---|---|---|---|
| | | | | 1 | 2 | 3 | 4 | 5 |
| 1. | 30 | 10 | 10 | Terk | | | | |
| | | | | Berdng | | | | |
| | | | | Impact | | | | |
| 2. | 30 | 20 | 20 | Terk | | | | |
| | | | | Berdng | | | | |
| | | | | Impact | | | | |

| No. | Aspek yang diteliti | Waktu pengamatan (menit) | SD | Sifat Sifatnya (p) | | | | |
|-----|---------------------|--------------------------|----|--------------------|---|---|---|---|
| | | | | 1 | 2 | 3 | 4 | 5 |
| 1. | 20 | 10 | 10 | Terk | | | | |
| | | | | Berdng | | | | |
| | | | | Impact | | | | |
| 2. | 20 | 20 | 20 | Terk | | | | |
| | | | | Berdng | | | | |
| | | | | Impact | | | | |

$$\sigma = \frac{F}{A_0} \times 1000 \text{ N}$$

$$\epsilon = \frac{\Delta L}{L_0} \times 100\%$$

$$E = \frac{\sigma}{\epsilon}$$

| No. | Kategori Pengangkutan (Bentuk) | Materi Pengangkutan (Jenis) | LSD (Membakar) | Beban Semula (kg) | | | | |
|-----|--------------------------------|-----------------------------|----------------|-------------------|------|------|------|------|
| | | | | 1 | 2 | 3 | 4 | 5 |
| 1. | 20 | 16 x 7 30 x 20 | Tarik | 1 | 2 | 3 | 4 | 5 |
| | | | Bending | 0,15 | 0,15 | 0,11 | 0,09 | 0,06 |
| | | | Impact | 11,24 | 1,63 | 1,0 | 0,4 | 0,20 |
| | | | Tarik | 11 | 12 | 13 | 14 | 15 |
| | | | Bending | 0,13 | 0,10 | 0,07 | 0,05 | 0,04 |
| | | Impact | 11 | 12 | 13 | 14 | 15 | |
| | | Tarik | 16 | 17 | 18 | 19 | 20 | |
| | | Bending | 0,13 | 0,10 | 0,07 | 0,05 | 0,04 | |
| | | Impact | 11 | 12 | 13 | 14 | 15 | |
| | | Tarik | 21 | 22 | 23 | 24 | 25 | |
| | | Bending | 0,13 | 0,10 | 0,07 | 0,05 | 0,04 | |
| | | Impact | 11 | 12 | 13 | 14 | 15 | |
| | | Tarik | 26 | 27 | 28 | 29 | 30 | |
| | | Bending | 0,13 | 0,10 | 0,07 | 0,05 | 0,04 | |
| | | Impact | 11 | 12 | 13 | 14 | 15 | |

| No. | Kategori Pengangkutan (Bentuk) | Materi Pengangkutan (Jenis) | LSD (Membakar) | Beban Semula (kg) | | | | |
|-----|--------------------------------|-----------------------------|----------------|-------------------|-------|-------|-------|-------|
| | | | | 1 | 2 | 3 | 4 | 5 |
| 3. | 30 | 30 | Tarik | 1 01 | 2 02 | 3 03 | 4 04 | 5 05 |
| | | | Bending | 6 06 | 7 07 | 8 08 | 9 09 | 10 10 |
| | | | Impact | 11 11 | 12 12 | 13 13 | 14 14 | 15 15 |
| | | | Tarik | 16 16 | 17 17 | 18 18 | 19 19 | 20 20 |
| | | | Bending | 21 21 | 22 22 | 23 23 | 24 24 | 25 25 |
| | | | Impact | 26 26 | 27 27 | 28 28 | 29 29 | 30 30 |
| | | | Tarik | 31 31 | 32 32 | 33 33 | 34 34 | 35 35 |
| | | | Bending | 36 36 | 37 37 | 38 38 | 39 39 | 40 40 |
| | | | Impact | 41 41 | 42 42 | 43 43 | 44 44 | 45 45 |
| | | | Tarik | 46 46 | 47 47 | 48 48 | 49 49 | 50 50 |
| | | | Bending | 51 51 | 52 52 | 53 53 | 54 54 | 55 55 |
| | | | Impact | 56 56 | 57 57 | 58 58 | 59 59 | 60 60 |
| | | | Tarik | 61 61 | 62 62 | 63 63 | 64 64 | 65 65 |
| | | | Bending | 66 66 | 67 67 | 68 68 | 69 69 | 70 70 |
| | | | Impact | 71 71 | 72 72 | 73 73 | 74 74 | 75 75 |