

LAMPIRAN 1

Tabel Hubungan *Load* dan *Displacement* Pengujian *Tearing* pada Semua Jenis Material Serbuk

Dari hasil pengujian *tearing* diperoleh data yang sudah disajikan pada Tabel 1, Tabel 2, Tabel 3, dan Tabel 4 sesuai dengan jenis material serbuk yang sudah ditentukan.

Tabel 1 *Adhesive* tanpa campuran serbuk

| No | Load | Displacement |
|----|--------|--------------|
| 1 | 0 | 0 |
| 2 | 0.2393 | 2.58 |
| 3 | 1.0569 | 16.95 |
| 4 | 1.0847 | 25.41 |
| 5 | 1.7846 | 39.78 |
| 6 | 1.9492 | 47.61 |
| 7 | 2.2383 | 52.41 |
| 8 | 2.3679 | 58.41 |
| 9 | 2.5573 | 65.01 |
| 10 | 2.8465 | 73.41 |
| 11 | 2.4576 | 74.61 |
| 12 | 2.6122 | 75.27 |
| 13 | 2.6731 | 75.78 |

Tabel 2 *Adhesive* dicampur *iron ore*

| No | Load | Displacement |
|----|--------|--------------|
| 1 | 0 | 0 |
| 2 | 0.2193 | 12.15 |
| 3 | 1.0169 | 30.87 |
| 4 | 2.0189 | 60.21 |
| 5 | 2.4427 | 78.93 |
| 6 | 2.9613 | 96.99 |
| 7 | 3.3001 | 129.96 |
| 8 | 3.3101 | 134.73 |
| 9 | 3.3848 | 147.87 |
| 10 | 3.4945 | 158.91 |
| 11 | 2.7368 | 204.48 |
| 12 | 2.7617 | 208.65 |
| 13 | 2.6072 | 216.78 |

Tabel 3 *Adhesive* dicampur pasir silika

| No | Load | Displacement |
|----|--------|--------------|
| 1 | 0 | 0 |
| 2 | 0.683 | 5.91 |
| 3 | 1.007 | 14.67 |
| 4 | 1.8495 | 39.36 |
| 5 | 2.2931 | 44.4 |
| 6 | 2.9811 | 83.97 |
| 7 | 3.1057 | 108.84 |
| 8 | 3.1306 | 110.64 |
| 9 | 3.1456 | 111.18 |
| 10 | 3.2352 | 117.78 |
| 11 | 2.9811 | 164.01 |
| 12 | 3.0309 | 168.78 |
| 13 | 2.9661 | 199.98 |

Tabel 4 *Adhesive* dicampur serbuk aluminium

| No | Load | Displacement |
|----|--------|--------------|
| 1 | 0 | 0 |
| 2 | 0.3739 | 12.78 |
| 3 | 1.3509 | 33.42 |
| 4 | 3.1157 | 100.47 |
| 5 | 3.2502 | 144.81 |
| 6 | 3.3549 | 150.78 |
| 7 | 3.3749 | 184.41 |
| 8 | 3.4746 | 210.12 |
| 9 | 3.5842 | 214.35 |
| 10 | 3.654 | 216.75 |
| 11 | 3.2004 | 286.38 |
| 12 | 2.996 | 294.81 |
| 13 | 2.8814 | 297.69 |

LAMPIRAN 2

Tabel Hubungan *Load* dan *Displacement* Pengujian *Peeling* pada Semua Jenis Material Serbuk

Dari hasil pengujian *peeling* diperoleh data yang sudah disajikan pada Tabel 5, Tabel 6, Tabel 7, dan Tabel 8 sesuai dengan jenis material serbuk yang sudah ditentukan.

Tabel 5 *Adhesive* tanpa campuran serbuk

| No | Load | Displacement |
|----|------|--------------|
| 1 | 0 | 0 |
| 2 | 0.17 | 2.25 |
| 3 | 0.28 | 7.08 |
| 4 | 0.39 | 13.59 |
| 5 | 0.4 | 17.94 |
| 6 | 0.48 | 28.05 |
| 7 | 0.46 | 28.68 |
| 8 | 0.41 | 30.30 |

Tabel 6 *Adhesive* dicampur *iron ore*

| No | Load | Displacement |
|----|------|--------------|
| 1 | 0 | 0 |
| 2 | 0.01 | 10.98 |
| 3 | 0.13 | 16.35 |
| 4 | 0.17 | 20.01 |
| 5 | 0.25 | 22.98 |
| 6 | 0.32 | 26.55 |
| 7 | 0.44 | 30.84 |
| 8 | 0.61 | 35.52 |
| 9 | 0.77 | 40.47 |
| 10 | 1 | 51.75 |
| 11 | 0.91 | 52.29 |
| 12 | 0.74 | 52.95 |
| 13 | 0.68 | 53.19 |

Tabel 7 *Adhesive* dicampur pasir silika

| No | Load | Displacement |
|----|--------|--------------|
| 1 | 0 | 0 |
| 2 | 0.1545 | 12.12 |
| 3 | 0.3141 | 16.44 |
| 4 | 0.4437 | 23.49 |
| 5 | 0.4985 | 27.3 |
| 6 | 0.5982 | 29.04 |
| 7 | 0.683 | 32.04 |
| 8 | 0.6929 | 34.35 |
| 9 | 0.8076 | 40.44 |
| 10 | 1.0319 | 44.64 |
| 11 | 0.997 | 44.7 |
| 12 | 0.8275 | 46.14 |
| 13 | 0.7976 | 46.65 |

Tabel 8 *Adhesive* dicampur serbuk aluminium

| No | Load | Displacement |
|----|--------|--------------|
| 1 | 0 | 0 |
| 2 | 0.1396 | 4.29 |
| 3 | 0.329 | 7.86 |
| 4 | 0.4088 | 10.29 |
| 5 | 0.4437 | 15.57 |
| 6 | 0.5733 | 20.43 |
| 7 | 0.5833 | 24 |
| 8 | 0.6979 | 24.6 |
| 9 | 0.5085 | 31.98 |
| 10 | 0.4935 | 32.52 |

LAMPIRAN 3

Tabel Hubungan Jenis Material Serbuk terhadap Kekuatan Normal dan Geser pada Epoxy Adhesive Layer

Tabel 9 Data Hasil Pengujian Kekuatan Geser

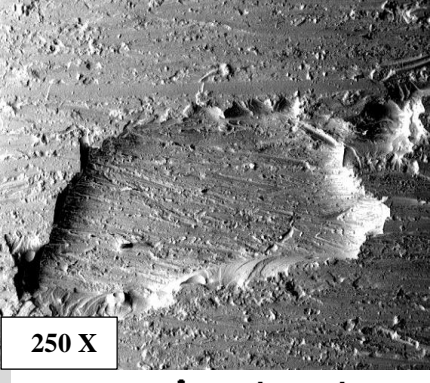
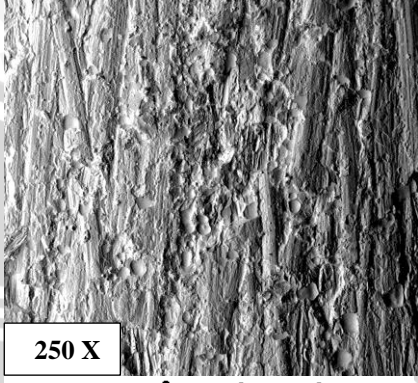
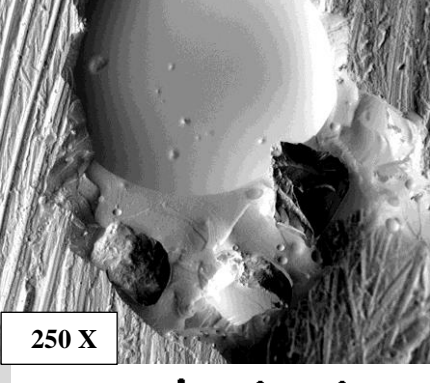
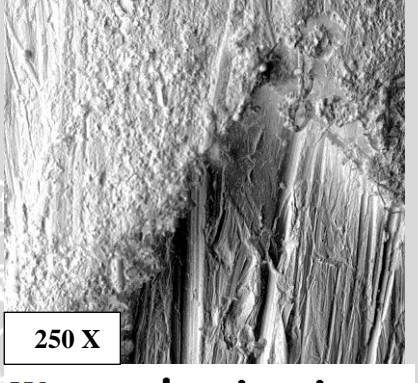
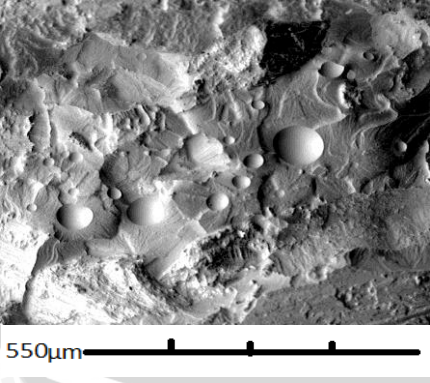
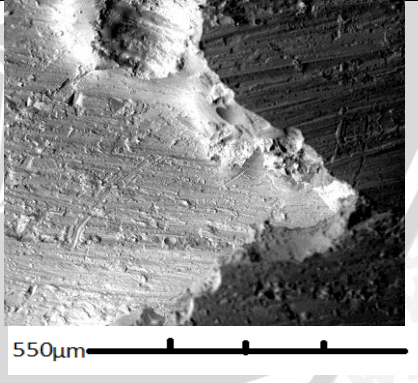
| Jenis Serbuk | Beban Maksimum (kN) | Kekuatan Geser(Mpa) |
|------------------|---------------------|---------------------|
| Tanpa Serbuk | 2.8465 | 7.12 |
| Iron Ore | 3.4945 | 8.74 |
| Pasir Silika | 3.2353 | 8.09 |
| Serbuk Aluminium | 3.654 | 9.14 |

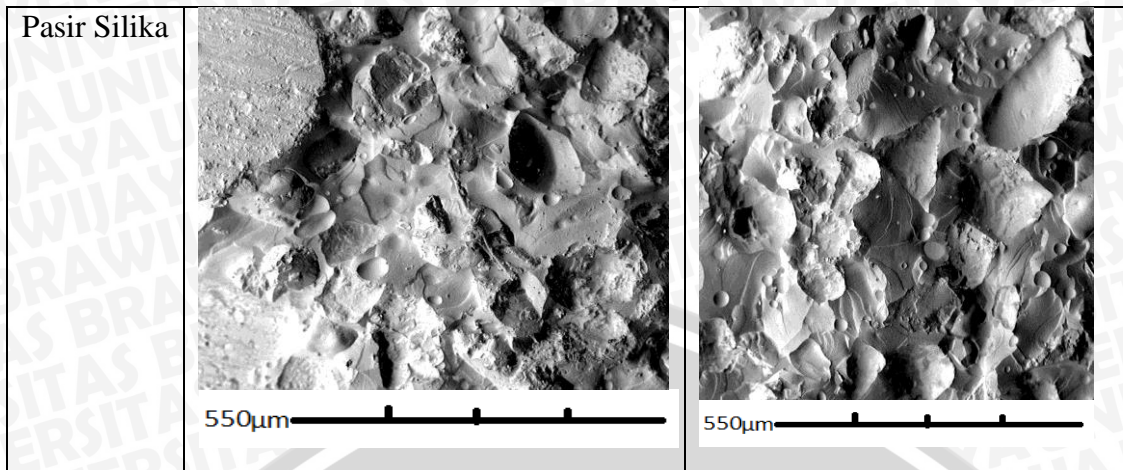
Tabel 10 Data Hasil Pengujian Kekuatan Normal

| Jenis Serbuk | Beban Maksimum (kN) | Kekuatan Geser(Mpa) |
|------------------|---------------------|---------------------|
| Tanpa Serbuk | 0.4835 | 1.21 |
| Iron Ore | 0.992 | 2.48 |
| Pasir Silika | 1.0319 | 2.58 |
| Serbuk Aluminium | 0.6979 | 1.74 |

LAMPIRAN 4

Data Hasil *Scanning Electron Microscopy* (SEM) dengan Perbesaran 250x

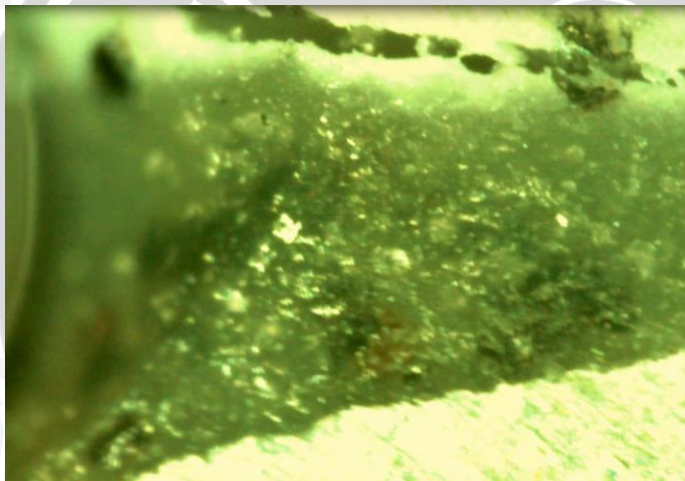
| Jenis Serbuk | <i>Peeling Test</i> | <i>Tearing Test</i> |
|------------------------|---|--|
| Tanpa |  |  |
| <i>Iron Ore Powder</i> |  |  |
| Serbuk Aluminium |  |  |



Lampiran 5

Foto Patahan Adhesive Perspektif Samping

a. Patah *Cohesive*



b. Patah *Adhesive*

