Adapun sifat-sifat dari material AA6061-T651 yang ditunjukkan pada tabel 1 dan 2 dibawah ini.

**Tabel 1.** Kandungan Sifat Kimia AA6061-T651

|  |  |
| --- | --- |
| *Element* | *Precent (%)* |
| *Silicon (Si)* | 0.50 – 0.90 |
| *Magnesium (Mg)* | 0.40 – 0.70 |
| *Manganese + Chromium (Mn+Cr)* | 0.12 – 0.50 |
| *Manganese (Mn)* | 0.0 – 0.50 |
| *Iron (Fe)* | 0.0 – 0.35 |
| *Copper (Cu)* | 0.0 – 0.30 |
| *Chromium (Cr)* | 0.0 – 0.30 |
| *Zinx (Zn)* | 0.0 – 0.20 |
| *Others (Total)* | 0.0 – 0.15 |
| *Titanium (Ti)* | 0.0 – 0.10 |
| *Other (Each)* | 0.0 – 0.05 |
| *Aluminium (Al)* | *Balance* |

**Tabel 2.** Kandungan Sifat Fisik dan Mekanik AA6061-T651

|  |  |
| --- | --- |
| *Property* | *Value* |
| *Density* | 2.70 Kg/m3 |
| *Melting Point* | 605 oC |
| *Thermal Expansion* | 24 x 10-6 |
| *Modulus of Elasticity* | 70 Gpa |
| *Thermal Conductivity* | 188 W/m.K |
| *Electrical Resistivity* | 0.034 x 10-6 Ω.m |

Berikut adalah desain OA yang ditunjukkan pada tabel 3 dibawah ini.

**Tabel 3**. Desain Eksperimen *L16* (44)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SI. No | KRT (rpm) | KP (mm/min) | SKT (deg.) | SBC (deg.) | K-Tarik (R) |
| (Kgf/mm²) |
| 1 | 765 | 24 | 2 | 2 |  |
| 2 | 765 | 43 | 2,5 | 5 |  |
| 3 | 765 | 65 | 3 | 8 |  |
| 4 | 765 | 90 | 3,5 | 11 |  |
| 5 | 1208 | 24 | 2,5 | 8 |  |
| 6 | 1208 | 43 | 2 | 11 |  |
| 7 | 1208 | 65 | 3,5 | 2 |  |
| 8 | 1208 | 90 | 3 | 5 |  |
| 9 | 1907 | 24 | 3 | 11 |  |
| 10 | 1907 | 43 | 3,5 | 8 |  |
| 11 | 1907 | 65 | 2 | 5 |  |
| 12 | 1907 | 90 | 2,5 | 2 |  |
| 13 | 3022 | 24 | 3,5 | 5 |  |
| 14 | 3022 | 43 | 3 | 2 |  |
| 15 | 3022 | 65 | 2,5 | 11 |  |
| 16 | 3022 | 90 | 2 | 8 |  |

**Tabel 4.** Hasil Pengukuran Kekuatan Tarik

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SI. No | KRT (rpm) | KP (mm/min) | SKT (deg.) | SBC (deg.) | K-Tarik (R) |
| (Kgf/mm²) |
| 1. | 765 | 24 | 2 | 2 | 18,510 |
| 2. | 765 | 43 | 2,5 | 5 | 12,868 |
| 3. | 765 | 65 | 3 | 8 | 15,973 |
| 4. | 765 | 90 | 3,5 | 11 | 10,243 |
| 5. | 1208 | 24 | 2,5 | 8 | 11,622 |
| 6. | 1208 | 43 | 2 | 11 | 10,452 |
| 7. | 1208 | 65 | 3,5 | 2 | 19,023 |
| 8. | 1208 | 90 | 3 | 5 | 13,464 |
| 9. | 1907 | 24 | 3 | 11 | 17,110 |
| 10. | 1907 | 43 | 3,5 | 8 | 11,102 |
| 11. | 1907 | 65 | 2 | 5 | 16,445 |
| 12. | 1907 | 90 | 2,5 | 2 | 18,269 |
| 13. | 3022 | 24 | 3,5 | 5 | 22,338 |
| 14. | 3022 | 43 | 3 | 2 | 19,265 |
| 15. | 3022 | 65 | 2,5 | 11 | 12,177 |
| 16. | 3022 | 90 | 2 | 8 | 12,338 |

##### 

##### Tabel 5. Hasil ANOVA untuk SN Ratio pada Kekuatan Tarik

