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

|  |  |
| --- | --- |
| *Element* | *% Present* |
| *Silicon (Si)* | 0.40 - 0.80 |
| *Magnesium (Mg)* | 0.80 - 1.20 |
| *Manganese (Mn)* | 0.0 - 0.15 |
| *Iron (Fe)* | 0.0 - 0.70 |
| *Copper (Cu)* | 0.15 - 0.40 |
| *Chromium (Cr)* | 0.04 - 0.35 |
| *Zinx (Zn)* | 0.0 - 0.25 |
| *Others (Total)* | 0.0 - 0.15 |
| *Titanium (Ti)* | 0.0 - 0.15 |
| *Other (Each)* | 0.0 - 0.05 |
| *Aluminium (Al) B* | *Balance* |

**Tabel 2**. Hasil Pengujian Impak Dan Perhitungan Impact Strenght

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SPC** | Kecepatan Rotasi Tool (rpm) | Kecepatan pengelasan (mm/min) | *Tilt Angle* (°) | Sudut Bahu Cekung (°) | **E** | **IS** |
| (*Joule*) | (*Joule*/mm²) |
| 1 | 2.192 | 36,3 | 3,4 | 9 | 32,6 | 0,815 |
| 2 | 2.192 | 36,3 | 3,4 | 9 | 30,9 | 0,775 |
| 3 | 2.192 | 36,3 | 3,4 | 9 | 27,8 | 0,698 |
| 4 | 2.192 | 36,3 | 3,4 | 9 | 26.3 | 0,659 |

**Tabel 3.** Nilai Pengujian Kekerasan Vickers

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SPC** | | **1** | **2** | **3** | **4** |
| **Parameter** | Kecepatan Rotasi Tool (rpm) | 2.192 | 2.192 | 2.192 | 2.192 |
| Kecepatan pengelasan (mm/min) | 36,3 | 36,3 | 36,3 | 36,3 |
| Tilt Angle (°) | 3,4 | 3,4 | 3,4 | 3,4 |
| Sudut Bahu Cekung (°) | 9 | 9 | 9 | 9 |
| **Nilai Kekerasan (HV)** | -25 | 105 | 105.4 | 109.6 | 108.4 |
| -20 | 101.5 | 102.9 | 108.5 | 107.8 |
| -15 | 99.4 | 103 | 106.1 | 107.3 |
| -10 | 86.7 | 97.1 | 98.4 | 101.3 |
| -5 | 73.8 | 84.8 | 80.2 | 81.9 |
| 0 | 76.6 | 75.1 | 76.3 | 71.8 |
| 5 | 74.6 | 74.3 | 72.7 | 74.1 |
| 10 | 81.4 | 87.8 | 94 | 89.7 |
| 15 | 94.3 | 103 | 105.1 | 101.1 |
| 20 | 100 | 104.9 | 109.1 | 107.3 |
| 25 | 104.5 | 106.1 | 109.8 | 108.2 |
| **Rata-Rata** | | 90.71 | 94.95 | 97.25 | 96.26 |