**Tabel 1.** Ukuran Utama *Chassis*

|  |  |  |
| --- | --- | --- |
| **Item** | **Unit (mm)** | **Regulasi kmhe 2023 (mm)** |
| Panjang | 2800 | Maks 3500 |
| Lebar | 500 | Maks 1300 |
| Tinggi | 500 | Maks 1000 |
| Profil | 20x20x2 dan Ø 20 | Bebas |

**Tabel 2.** spesifikasi material aluminium 6061

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nama Material** | ***Young’s Modulus*** | ***Yield Strength*** | ***Tensile Strength*** | ***Mass Density*** |
| Aluminium 6061 | 68,9 GPa | 275 Mpa | 310 MPa | 2700 kg/m3 |

**Tabel 3.** Variabel penelitian

|  |  |  |
| --- | --- | --- |
| **Variabel penelitian** | **Jenis variasi** | |
| **Desain A** | **Desain B** |
| Jenis material | Aluminium 6061 | |
| Bentuk penampang | Bentuk *hollow* | Bentuk pipa |
| Bentuk *rollbar* | Bentuk sudut siku | Bentuk *fillet* |

**Tabel 4.** Tabel morfologi

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Option** | **Keterangan** | |
| ***Chassis* A** | ***Chassis* B** |
| 1. | Material *Chassis* | Aluminium 6061 | |
| 2. | Model bentuk penampang *Chassis* | Bentuk penampang *hollow* | Bentuk penampang pipa |
| 3. | Model *Rollbar* *Chassis* | Bentuk siku | Bentuk *fillet* |

**Tabel 5.** Berat pembebanan simulasi

|  |  |  |
| --- | --- | --- |
| **No** | **Jenis Beban** | **Berat Beban** |
| 1. | Berat *driver* (diasumsikan) | 50 kg |
| 2. | Berat mesin | 20 kg |
|  | Total | 70 kg |

**Tabel 6.** Data hasil simulasi pada *chassis*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Variable  Model Body** | **Nilai Maksimal** | | | **Nilai Minimum** | | | ***Safety  Factor*** |
| ***Von  Misses  Stress* (MPa)** | ***Displacement*  (mm)** | ***Strain*** | ***Von  Misses  Stress* (MPa)** | ***Displacement*  (mm)** | ***Strain*** |
| Model *chassis*  Konsep A | 257,5 | 11,66 |  | 0 | 0 | 0 | 0,21 |
| Model *chassis*  Konsep B | 168 | 0,5953 |  | 0 | 0 | 0 | 1,64 |