2023-2024 Ergonomic Testing Rig

# Material Selection

Table 1: Weighted evaluation matrix for wood vs aluminium.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Wood** |  | **Aluminium** |  |
| Criteria | Importance weighting (%) | Rating | Weighted Rating | Rating | Weighted Rating |
| Appearance | 5% | 2 | 0.1 | 4 | 0.2 |
| Longevity | 15% | 2 | 0.3 | 4 | 0.6 |
| Surface Finish | 5% | 1 | 0.05 | 5 | 0.25 |
| Durability | 15% | 2 | 0.3 | 4 | 0.6 |
| Assembly Simplicity | 20% | 4 | 0.8 | 2 | 0.4 |
| Weight | 10% | 4 | 0.4 | 3 | 0.3 |
| Cost | 30% | 4 | 1.2 | 3 | 0.9 |
|  | Total | / | 3.15 | / | 3.25 |

1 – Inadequate

2 – Sub par

3 – Adequate

4 – Good

5 – Excellent

The weighted evaluation matrix demonstrates that aluminum is the most suitable option for construction of the ergonomic testing rig.

# Cost Analysis

\*all costs are estimated and subject to change

Table 2: estimated cost analysis for ergo rig.

|  |  |
| --- | --- |
| **Part** | **Cost** |
| Aluminum square tubing | 300$ |
| hardware | 10$ |
| Plywood for seat | 60$ |
| **Total** | **370$** |