**Foam Board:**

Length = 0.27 m

Width = 0.2 m

Thickness = 0.008 m

Volume of foam board = Length x Width x Thickness

= 0.27 x 0.2 x 0.008

= 0.000432 m3

Density of foam board = 62 kg/m3

Mass of foam board = Density x Volume

= 62 x 0.000432

= 0.026784 kg

Unit embodied energy of foam board = 85 MJ/kg

Embodied energy of foam board = Mass x Unit embodied energy

= 0.026784 x 85

= 2.27664 MJ

**Motor Clamp:**

Weight = 0.024 kg

Quantity = 4

Total weight = 0.024 x 4 = 0.096 kg

Unit embodied energy of motor clamp = 153 MJ/kg

Embodied energy of motor clamp = Total weight x Unit embodied energy

= 0.096 x 153

= 14.688 MJ

**Nuts and Bolts:**

Quantity = 10

Weight = 0.003 kg

Total weight = 0.003 x 10 = 0.03 kg

Unit embodied energy of motor clamp = 153 MJ/kg

Embodied energy of motor clamp = Total weight x Unit embodied energy

= 0.03 x 153

= 4.59 MJ

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Consumables | Specifications as per BOM | | | | | Qty | Total | | Unit Embodied Energy | | Total embodied Energy | Alternate Material | Unit Embodied Energy of Alternate Material | Total embodied Energy of Alternate Material |
| Length (m) | Width (m) | Thickness (m) | Volume (m3) | Weight (kg) |  | Volume (m3) | Weight (kg) | MJ/m3 | MJ/kg | MJ |  | MJ /kg | MJ |
| Foam Board | 0.27 | 0.2 | 0.008 | 0.000432 | 0.026784 | 1 | 0.000432 | 0.026784 |  | 85 | 2.27664 |  |  |  |
| Motor Clamp |  |  |  |  | 0.024 | 4 |  | 0.096 |  | 153 | 14.668 |  |  |  |
| Nut and Bolts |  |  |  |  | 0.003 | 10 |  | 0.03 |  | 153 | 4.59 |  |  |  |
| Total Embodied Energy | | | | | | | | | | | 21.53464 |  |  |  |