**Team 4: Body Handout: Materials**

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**Engineering Principles:**

* Durability
* Strength-to-Weight Ratio

**Housing Electrical Components**

20% Glass Filled Polycarbonate [1]

* Durable
* Lightweight
* Good Flammability Rating
* Electrical Insulation Properties
* High Compressive Strength
* High Impact Resistance

**Table 1 : Compressive strengths of Polycarbonate [1]**



***Baseball bat vs Polycarbonate*** Video Source**:** <http://www.youtube.com/watch?v=7TDnPLHXbyI>

**Outer Shell**

Glass-Fiber Reinforced Polyester

* Durable
* Can be made in large, intricate panels
* Comes in virtually any colour or finish
* Graffiti Proof
* Attractive Appearance

**Picture Sources:** [[1] http://www.solarwebsite.nl/en/2007/08/proefrit-aerorider/](http://www.solarwebsite.nl/en/2007/08/proefrit-aerorider/)

[[2] http://www.velovision.com/showStory.php?storynum=607](http://www.velovision.com/showStory.php?storynum=607)

[[3] http://www.examiner.com/article/aerorider-the-ultimate-single-seat-hybrid](http://www.examiner.com/article/aerorider-the-ultimate-single-seat-hybrid)

**References:** [1] Plastics International (2013) *Zelux (Glass Filled Polycarbonate)* [Online] Available: http://www.plasticsintl.com/datasheets/Polycarbonate\_40\_GF.pdf