# Bill of Materials (list of components)

## # of parts Item name Material used Cost(CAD)/part

12x Stair step Hardwood (oak) 1.64

1x Base post Steel 41.65

1x Post extension Steel 36.05

17x Rail 1 (low) Aluminum (6061-T6) 0.52

12x Rail 2 (med) Aluminum (6061-T6) 0.55

12x Rail 3 (high) Aluminum (6061-T6) 0.79

12x Railing Plastic (Polypropylene) 0.24

1x Safety railing (top) Plastic (Polypropylene) 0.34

1x Top step Aluminum (6061-T6) 74.42

### TOTAL COST 174.24 CAD

Note: All costs are based commodity price of materials, volume of part, and density. These values do not include secondary costs, such as the cost of labor, delivery, molds, and volume of production. All material prices are current to September, 26, 2013 and are subject to change.

**Density (coverted to kg per cubic meter) sources:**

Steel - <http://hypertextbook.com/facts/2004/KarenSutherland.shtml>

Aluminum - <http://en.wikipedia.org/wiki/6061_aluminium_alloy>

Hardwood (oak) - <http://www.engineeringtoolbox.com/wood-density-d_40.html>

Polypropylene - <https://www.google.ca/search?q=polypropylene+density&oq=polypropylene+density>

**Cost (converted to per kg) sources:**

Steel - <http://www.steelonthenet.com/steel-prices.html>

Aluminum - <http://www.metalprices.com/metal/aluminum/aluminum-alloy-6061-scrap-mill-grade>

Hardwood (oak) – <http://www.alibaba.com>

Polypropylene - <http://www.platts.com/news-feature/2013/petrochemicals/pgpi/polypropylene>