CLAIMS

What is claimed is:

1. A cladded foil comprising:

a core comprising a balance of Al and between 0.2-0.4 wt. % Si, between 0.15-0.4 wt. % Cu, between 0.8-1.2 wt. % Mg, and between 0.04-0.35 wt. % Cr; and

a cladding comprising a balance of Al and between 1.5-4.5 wt. % Si, between 0.15-0.4 wt. % Cu, between 0.4-1.2 wt. % Mg, and between 0.04-0.35 wt. % Cr,

with the trace elements in the core and clad compositions comprising between 0-0.3 wt. % Fe, between 0-0.1 wt. % Mn, between 0-0.25 wt. % Zn, and between 0-0.15 wt. % Ti with any other elements less than 0.05 wt. % and the total of all other elements less than 0.15 wt. %.

2. The cladded foil of claim 1, wherein each foil is between 25 μm and 1000 μm in thickness.

3. The cladded foil of claim 1, wherein the core is a first layer of the foil and the cladding is a second layer of the foil.

4. The cladded foil of claim 1, wherein a first layer forms a first cladding of the foil, a second layer forms the core of the foil, and a third layer forms a second cladding of the foil.

5. The cladded foil of claim 1, wherein the cladding is between 8% and 45% of the total thickness of the cladded foil.

6. A cladded foil comprising:

a core comprising a balance of Al and between 0.2-0.4 wt. % Si, between 0.15-0.4 wt. % Cu, between 0.8-1.2 wt. % Mg, and between 0.04-0.35 wt. % Cr; and

a cladding comprising a balance of Al and between 1.5-4.5 wt. % Si, between 0.15-0.4 wt. % Cu, between 0.4-1.2 wt. % Mg, and between 0.04-0.35 wt. % Cr,

wherein the proportions of the core and cladding are selected so that the homogenization of the core and cladding yields an aluminum alloy having between 0.4-0.8 wt % Si, 0.15-0.40 wt % Cu, 0.8-1.2 wt % Mg, and 0.04-0.35 wt % Cr.

7. The cladded foil of claim 6, with the trace elements in the core and clad compositions comprising between 0-0.3 wt. % Fe, between 0-0.1 wt. % Mn, between 0-0.25 wt. % Zn, and between 0-0.15 wt. % Ti with any other elements less than 0.05 wt. % and the total of all other elements less than 0.15 wt. %.

8. The cladded foil of claim 6, wherein each foil is between 25 μm and 1000 μm in thickness.

9. The cladded foil of claim 6, wherein the core is a first layer of the foil and the cladding is a second layer of the foil.

10. The cladded foil of claim 6, wherein a first layer forms a first cladding of the foil, a second layer forms the core of the foil, and a third layer forms a second cladding of the foil.

11. The cladded foil of claim 6, wherein the cladding is between 8% and 45% of the total thickness of the cladded foil.

12. The cladded foil of claim 6, wherein the resulting alloy is 6061 aluminum alloy.

13. A cladded foil comprising:

a core comprising a balance of Al and between 0.2-0.4 wt. % Si, between 0.15-0.4 wt. % Cu, between 0.8-1.2 wt. % Mg, between 0.04-0.35 wt. % Cr, and less than 0.1 wt. % Mn; and

a cladding comprising a balance of Al and between 1.5-4.5 wt. % Si, between 0.15-0.4 wt. % Cu, between 0.4-1.2 wt. % Mg, and between 0.04-0.35 wt. % Cr.

14. The cladded foil of claim 13, with the trace elements in the core and clad compositions comprising between 0-0.3 wt. % Fe, between 0-0.1 wt. % Mn, between 0-0.25 wt. % Zn, and between 0-0.15 wt. % Ti with any other elements less than 0.05 wt. % and the total of all other elements less than 0.15 wt. %.

15. The cladded foil of claim 13, wherein each foil is between 25 μm and 1000 μm in thickness.

16. The cladded foil of claim 13, wherein the core is a first layer of the foil and the cladding is a second layer of the foil.

17. The cladded foil of claim 13, wherein a first layer forms a first cladding of the foil, a second layer forms the core of the foil, and a third layer forms a second cladding of the foil.

18. The cladded foil of claim 13, wherein the cladding is between 8% and 45% of the total thickness of the cladded foil.