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Victoria Metals – Aluminum Mosaics

The aluminum in Victoria Metals is <u>98% recycled</u> product. Here is the process used:

1. Aluminum is first divided from municipal waste, usually through an eddy current separator, and cut into little, equal pieces to lessen the volume and make it easier for the machines that separate them.

2. Pieces are cleaned chemically/mechanically, and blocked to minimize oxidation losses when melted. (The surface of aluminum readily oxidizes back into aluminum oxide when exposed to oxygen.).

3. Blocks are loaded into the furnace and heated to 750 °C ± 100 °C to produce molten aluminum.

4. Dross is removed and the dissolved hydrogen is degassed. (Molten aluminum readily disassociates hydrogen from water vapor and hydrocarbon contaminants.) This is typically done with chlorine and nitrogen gas. Hexachloroethane tablets are normally used as the source for chlorine. Ammonium perchlorate can also be used, as it decomposes mainly into chlorine, nitrogen, and oxygen when heated.

5. Samples are taken for spectroscopic analysis. Depending on the final product desired, high purity aluminum, copper, zinc, manganese, silicon, and/or magnesium is added to alter the molten composition to the proper alloy specification. The top 5 aluminum alloys produced are apparently 6061, 7075, 1100, 6063, and 2024.

6. The furnace is tapped, the molten aluminum poured out, and the process is repeated again for the next batch. Depending on the end product it may be cast into ingots, billets, or rods, formed into large slabs for rolling, atomized into powder, sent to an extruder, or transported in its molten state to manufacturing facilities for further processing.

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