fonderiataroni
100% ITALIAN ALUMINUM GRAVITY CASTING

GRAVITY GREEN CASTING

ECOLOGICAL ADVANTAGES OF **GRAVITY CASTING** COMPARED TO **SAND CASTING** IN THE **LIGHT ALUMINUM ALLOYS** SECTOR

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INTRODUCTION

In the light **aluminum alloys sector**, the **choice of casting** method is fundamental for the **environmental impact of production**.

Gravity Casting and **Sand Casting** are two widely used methods, but Gravity Casting stands out for its **lower ecological impact**, offering significant advantages in terms of waste reduction, energy saving, improvement of air quality, minimization of water consumption and use of more sustainable materials.

GRAVITY CASTING

The molten metal is poured into a pre-heated permanent mold using gravity.

It is suitable for the production of **complex** and **precise components** with excellent surface quality

VS

SAND CASTING

The molten metal is poured into a sand mold prepared manually or mechanically.

It is used for the production of less complex and precise components with a lower surface quality

ENVIRONMENTAL ADVANTAGES

WASTE REDUCTION

70%

less foundry waste than Sand Casting

Specifically, for every 100 tons of aluminum alloy melted, Gravity Casting generates up to 70 tons less waste than Sand Casting.

This reduction in waste translates into less waste to be disposed of, preserving natural resources and reducing environmental pollution.

For example, if a company produces 1,000 tons of aluminum alloy components per year, switching from Sand Casting to Gravity Casting could reduce its foundry waste by 700 tons per year, a significant saving in environmental and economic terms.

ENVIRONMENTAL ADVANTAGES

LOWER ENERGY CONSUMPTION

50%

less energy than Sand Casting

To produce the same quantity of aluminum alloy components, Gravity Casting consumes up to 50% less energy than Sand Casting.

Lower energy consumption helps reduce greenhouse gas emissions and the impact on climate change, which is particularly important in the energy-intensive aluminum smelting sector.

If a company consumes 1,000,000 kWh of energy per year for the casting of aluminum alloys, switching to Gravity Casting could reduce its energy consumption by 500,000 kWh per year, a significant saving in environmental and economic terms.

ENVIRONMENTAL ADVANTAGES

BETTER AIR QUALITY

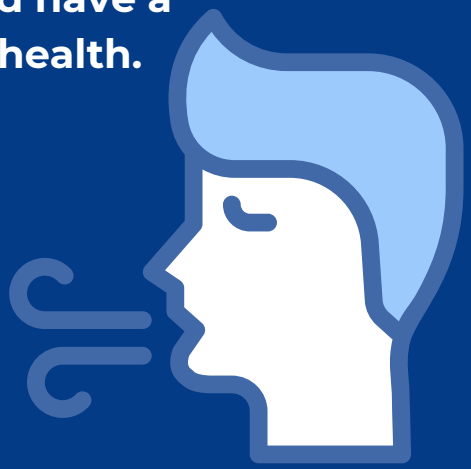
90%

fewer fine dust emissions compared to Sand Casting

During the casting process of aluminum alloys, Gravity Casting releases up to 90% less fine dust into the air compared to Sand Casting.

The lower emission of fine dust helps to improve air quality and protect human health, especially in areas close to foundries.

In areas with high levels of air pollution, the move to gravity casting could have a significant impact on public health.



ENVIRONMENTAL ADVANTAGES

LOWER WATER CONSUMPTION

Gravity Casting requires significantly less water than Sand Casting

This is because the process does not use water to prepare the sand molds, unlike Sand Casting, which is important for the protection of water resources, especially in areas with water scarcity.

If a company consumes 100,000 liters of water per year casting aluminum alloys, switching to Gravity Casting could reduce its water consumption by a significant amount, helping to protect water resources.

ENVIRONMENTAL ADVANTAGES

MORE SUSTAINABLE MATERIALS

Gravity Casting can be used with a wider range of recycled materials than Sand Casting

This is because the process is less sensitive to impurities present in recycled materials. The use of recycled materials reduces the extraction of virgin raw materials and contributes to a more sustainable circular economy, in line with the sector's decarbonisation objectives.

Companies that use Gravity Casting can increase the percentage of recycled materials in their aluminum alloy products, reducing the environmental impact of their production.

THE GREEN CHOICE

At Fonderia Taroni, we are proud to use Gravity Casting as our primary casting method.

Our commitment to sustainability extends to every phase of our manufacturing process, from selecting environmentally friendly materials to implementing efficient manufacturing practices.

We believe that industrial production must go hand in hand with environmental protection and Gravity Casting represents an important step in this direction.

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