

In the clouds



Stainless steel is a widely used material in the aerospace industry due to its mechanical strength, durability and ability to withstand extreme environmental conditions. Its resistance to corrosion and high temperatures makes it suitable for the manufacture of structures, propulsion systems and other critical components in aircraft and spacecraft.

Stainless steel is an alloy composed mainly of iron and chromium. The latter improves its resistance to corrosion and oxidation, essential qualities in the aerospace industry, where materials are exposed to factors such as humidity, pressure and extreme temperatures. Depending on the grade of stainless steel used, the alloy will contain some elements or others and this will affect the mechanical resistance and structural stability, among other factors.

In aircraft manufacturing, stainless steel is used in several structural components due to its strength and ability to withstand mechanical loads. In this respect, precipitation hardening stainless steels are particularly required.

In aerospace propulsion systems, stainless steel has been increasingly used because of its corrosion resistance and ability to withstand high temperatures. It is used in exhaust manifolds and in fuel and lubricant lines, where AISI 321 and AISI 347 alloys have proven to be particularly efficient.



Other key applications of stainless steel in the aerospace industry are in landing gears, because of their mechanical properties that help to absorb the impact generated during landing, and in structural joints, which are made of stainless steel to improve durability and reduce the risk of failure during flight.

The use of stainless steel in the aerospace industry continues to evolve. A recent example is its incorporation in the design of SpaceX's Starship rocket made of 300 series stainless steel. This development demonstrates the potential of this material, which exceeds expectations and opens up endless possibilities.