SIDERVAL
SPECIAL PROFILES IN STEEL

Mech. Engineering & Machinery

Hot Extruded Stainless Steel Profiles for Furnace Guide Systems

Profile:
Special profiles
Material grade:
AISI 310S and AISI 310
Execution:
Hot Extruded
Destination:
Worldwide

BACKGROUND

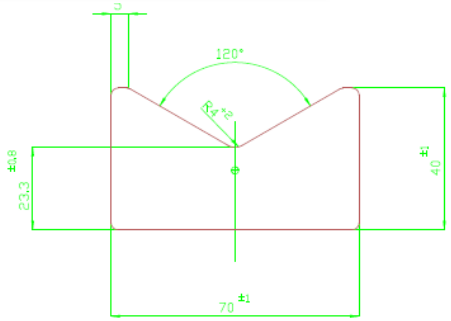
In the industrial thermal processing sector, **furnace systems** are exposed to extreme temperatures and intense operational stress.

Components such as **guide rails** must deliver both structural strength and long-term performance, as they are critical to the smooth operation of high-temperature equipment like heat treatment furnaces, kilns, and incinerators.

These applications demand materials that can retain **mechanical integrity** despite repeated heating and cooling cycles, oxidation, and mechanical wear.

A well-established manufacturer in this field approached Siderval to develop a **more durable solution** for their guide profiles, which are used in high-temperature environments and subjected to repeated thermal cycles.

CHALLENGE



Although the guide geometries were relatively simple, the customer experienced **excessive wear** on previous profiles and a high frequency of maintenance. The new profiles had to:

- Withstand **high temperatures** without losing mechanical properties
- Offer **extended service life** to reduce downtime and maintenance operations;
- Maintain dimensional stability **over time**

SOLUTION

Siderval proposed the use of **AISI 310S stainless steel**, known for its excellent corrosion and oxidation resistance at elevated temperatures. Thanks to the **hot extrusion process**, we were able to produce profiles with a dense structure, high dimensional accuracy, and strong mechanical characteristics.

The **near-net shape** of the extruded profile also minimized the need for additional machining, significantly reducing production costs and assembly time.

The new guide profile **improved system durability**, lowered maintenance costs, and increased the overall reliability of the furnace.