SIDERVAL
SPECIAL PROFILES IN STEEL

Mech. Engineering

Custom Carbon Steel Profiles for Plastic Recycling Machinery

Profile:
Custom structural profiles
Material grade:
Carbon steel
Execution:
Hot Extruded
Destination:
Worldwide

BACKGROUND

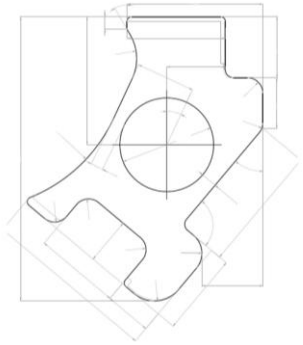
In the plastic **recycling industry**, machinery must operate under demanding mechanical conditions, ensuring structural rigidity, dimensional stability, and long-term reliability.

Components used in shredding systems are subjected to vibrations, dynamic loads, and continuous operational stress.

A European manufacturer specializing in machinery for **plastic size reduction** and recycling processes required custom carbon steel profiles for the construction of structural elements within their shredding machines.

The solution needed to combine mechanical strength, geometric precision, and efficient integration into the machine assembly.

CHALLENGE



The project required **structural profiles** capable of supporting heavy-duty mechanical applications while optimizing manufacturability and downstream processing.

- Profiles designed for **high mechanical loads** and structural stability
- Complex cross-sections not achievable with standard commercial profiles
- Need to reduce subsequent machining operations
- Requirement for **improved workability** during fabrication

SOLUTION

Siderval developed custom hot-extruded carbon steel profiles tailored to the machine design, including a specially engineered tubular section that optimizes structural performance within the shredding system.

Thanks to the **hot extrusion process**, the required shapes were obtained as precise near-net sections, reducing the need for extensive mechanical machining. In addition, the profiles undergo a controlled-atmosphere stress-relief heat treatment, improving material homogeneity and enhancing workability during subsequent fabrication phases.

The result is a structurally reliable and production-efficient solution that supports the demanding operational requirements of plastic recycling machinery while simplifying manufacturing processes.