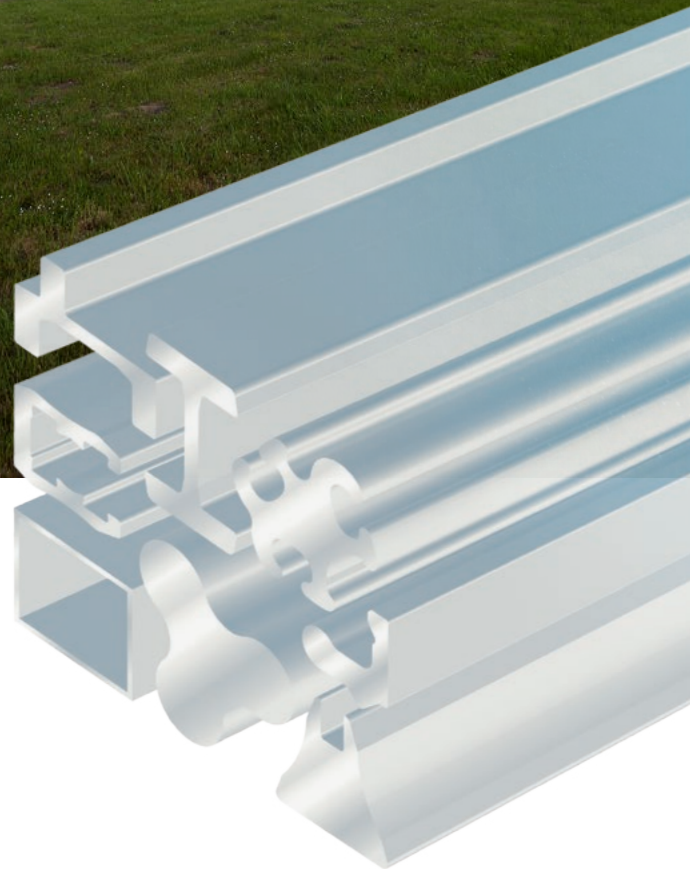


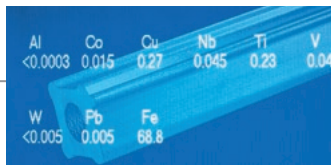
HOT EXTRUDED SPECIAL STEEL PROFILES

Custom-made Components and
Structural Elements



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Precision-made, Quality delivered



ECONOMIC PRODUCTION

The different profiling processes make it possible to form the material so that it can meet all respective economical, structural and optical conditions.

The use of special profiles offers many industries and individual users distinct advantages, e. g.

- best shape properties and fitting accuracy by maintenance of the tightest tolerances
- different material thicknesses within one profile cross-section thus allowing specific reinforcement of highly stressed segments of structural components
- seamless structure of solid and hollow sections, which have to withstand the demands of temperature, pressure, and aggressive media

Machining can be minimized and weight saved by choosing an optimum cross-section, and bottlenecks in machining capacity can thus be avoided.

Hoesch Schwerter Extruded Profiles GmbH develops special steel profiles in close collaboration with individual users or branches of industry. In contrast to the mass production of other suppliers, however, the Schwerte plants make products whose properties are determined by the customers according to their requirements.

Every profile that leaves the works in Schwerte solves a special construction or manufacturing problem.

Hoesch Schwerter Extruded Profiles GmbH is able to offer far more economical solutions by manufacturing steel profiles using state of the art technology.

Why?

- Costly processes such as welding, straightening, grinding, milling or turning can be eliminated.
- Material and labour time can be saved during downstream machining due to the near-net cross-section of the profile.
- The multitude of possible cross-sections often creates the possibility to fulfil the functions of adjacent components with a single special profile.

Steel is a material with a huge structural, economical and ecological potential. Easily shaped, fully recyclable and highly durable, these material advantages can be further enhanced using special profiles, because our customers are not necessarily bound to high tooling charges and long tooling-up times. Moreover, small batches of special profiles can also be manufactured economically.

To find out if a special profile or a conventionally produced product offers design or economic advantages for your requirements, ask for a personal discussion with our profile and applications advisors.

FURTHER PROCESSING

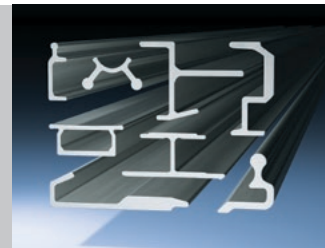
To round off our production program, we also offer our customers in combination with our co-operation partners the following additional processing steps:

- sawing
- milling
- turning
- grinding
- welding
- drilling
- thread cutting
- heat treatment
- surface treatment



Specific Solutions for Specific Applications

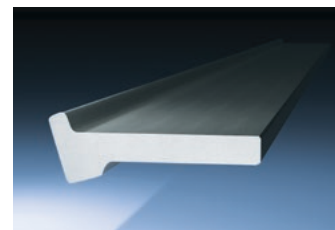
Railroad Cars and Aircraft



Special profiles for railroad cars



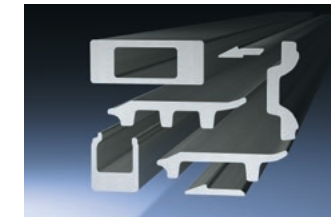
Special profiles for rails in automatic sliding doors



Special profiles for jet rings in aircraft engines



Construction and Agricultural Machinery



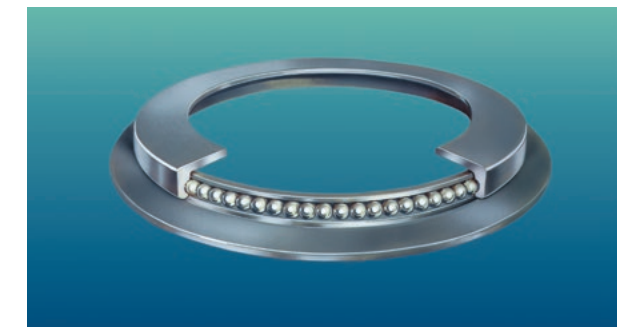
Special profiles for construction machinery



Special profiles for agricultural machinery



The answer is often hidden in the detail: Schwerte special profiles form essential components in the production of construction and agricultural machinery. From frame profiles and special slewing ring shapes to clamping rails and blade-holder profiles, often complex parts are manufactured according to the individual demands of our customers.



Special profiles for ball bearing slewing rings

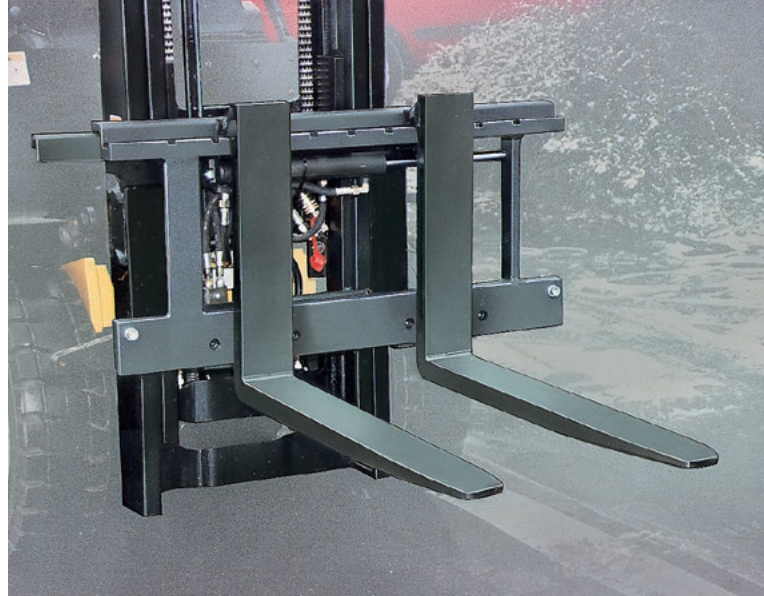


Specific Solutions for Specific Applications

Materials Handling

For many years the manufacturers of storage systems and industrial lift trucks have fallen back on the know-how and experience of Hoesch Schwerter Extruded Profiles GmbH. The design of special profiles for these industries requires a profound understanding of the logistical requirements. Additionally, the profiles must be able to withstand extreme stresses and strains.

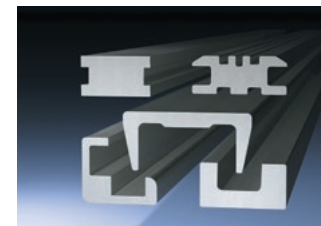
Stressable joints, lifting equipment for heavy loads, good visibility and stability are all specific functions required in the industrial lift truck industry, all of which can only be fulfilled by Schwerte special extruded profiles. We produce special profiles of varying load capacities for use in materials handling equipment, from the smallest stackers up to heavy duty industrial forklift trucks, as well as for high storage and shelving systems.



Special profiles for forklift truck attachments

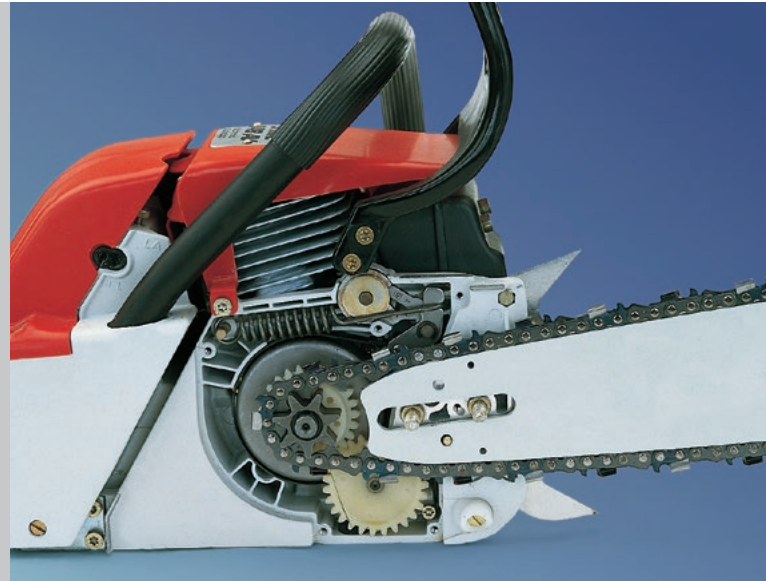


Special profiles for mast and telescopic guide rails in high storage systems



Specific Solutions for Specific Applications

Mechanical Engineering



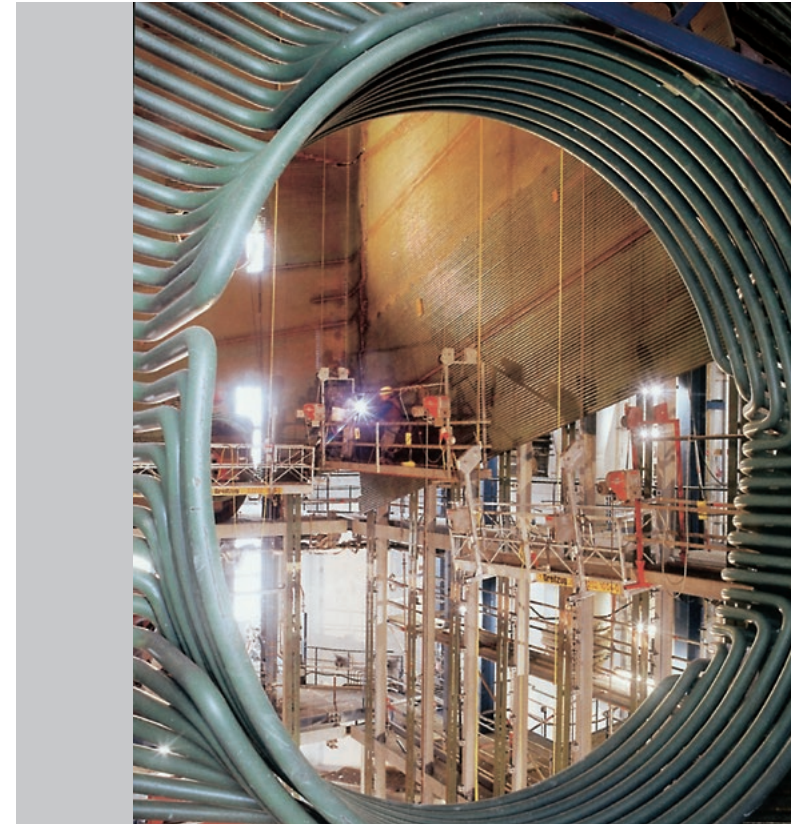
Special profile for
chain saw drive sprocket



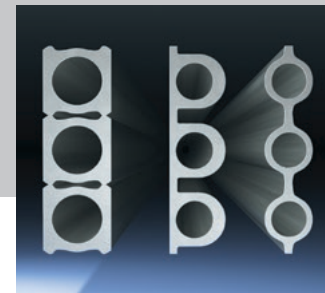
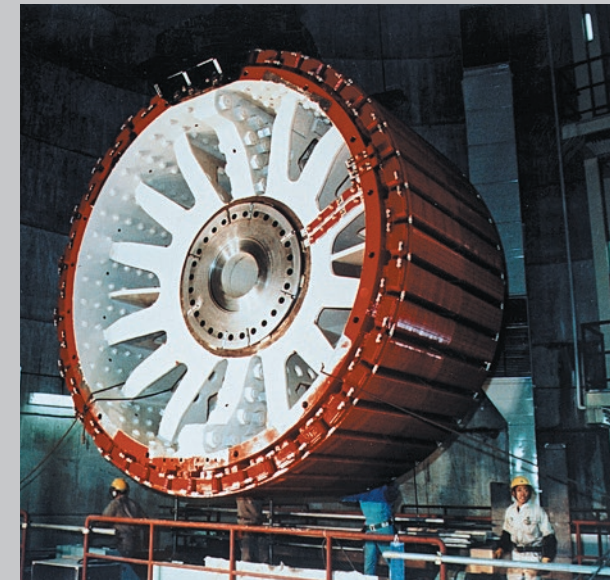
Special profiles as chain guide
rails in chipboard
manufacturing plants

Precision and durability are essential criteria for components used in mechanical engineering. Whether for high-precision tools or industrial production facilities, or machines for the textile and the wood working industries, highly innovative manufacturing technologies are required to satisfy the extreme demands of different machine manufacturers.

Plant Building and Power Station Engineering



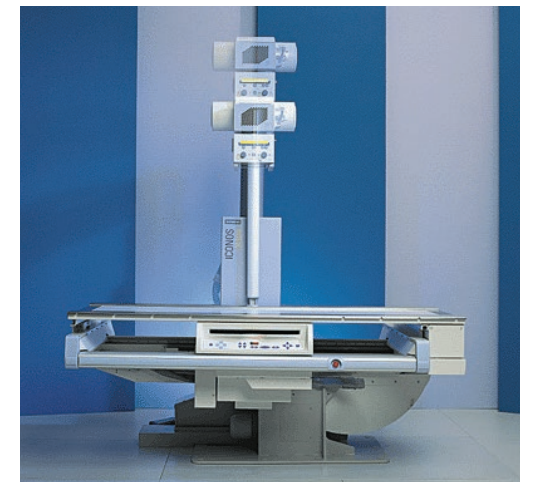
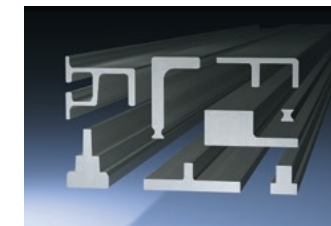
Special profile
as stator element
in generators



Finned, omega and double omega tubes
for gas-tight membrane walls in boiler
construction as well as tubing for walking
beam furnaces

Compared with the rest of the world, German heavy plant builders and power plant construction companies have maintained a leading position in this market for many years. Profitability and reliability are the distinguishing factors of the projects. Hoesch Schwerter Extruded Profiles GmbH is seen as a competent partner for the development and manufacture of special components for heavy industrial and power generating plants.

Special profiles for X-ray
equipment



Specific Solutions for Specific Applications

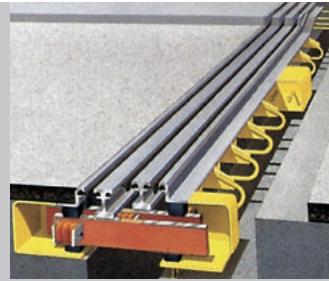
Construction Industry



Special profiles for façades



Special profiles for expansion joints in bridge building



Special profiles as corner and locking profiles for sheet piling



Aesthetics, precision and variety of form: Schwerte special profiles offer the construction industry advantages in many fields. On a daily basis, profiles are shipped from Schwerte to construction sites all over the world in a multitude of various forms. They could be facade profiles for ambitious architecture projects or locking profiles for technically demanding sheet piling structures or even expansion joint profiles for use in bridge building. In every profile you

will find minimum weight combined with maximum load capacity. Furthermore, architects and engineers value the collaboration with Hoesch Schwerter Extruded Profiles GmbH, because expensive welding and downstream mechanical manufacturing processes are not necessary.

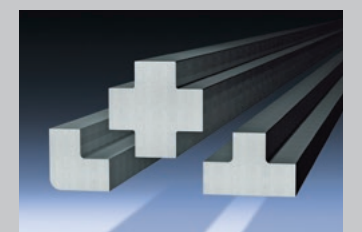
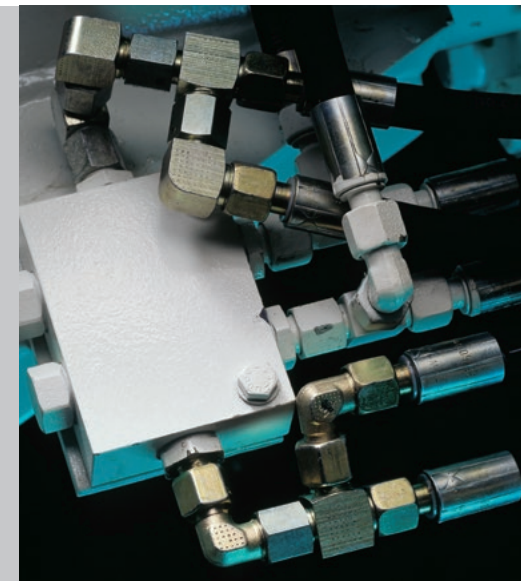
Armatures and Piping Systems

Hoesch Schwerter Extruded Profiles GmbH supplies to the excavation and deep mining industries as well as to structural engineering companies. This is one of the areas where the Schwerte plants put a decisive stamp on the German and international markets. Hoesch

Schwerter Extruded Profiles GmbH, supplies highly innovative components in the fields of water and gas transportation as well as for heating and ventilation systems, thus contributing to the continuous development of trendsetting technologies.



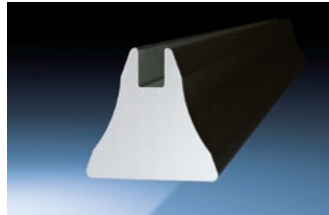
Special profiles made from stainless steel for high-pressure valve and ball valve bodies



Special cross, T and angle profiles for high pressure valve joints

Material-specific Solutions

Special profiles for façade construction



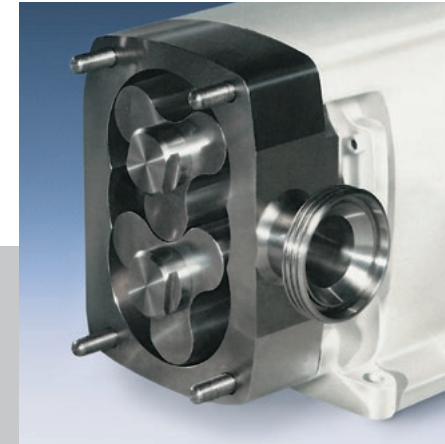
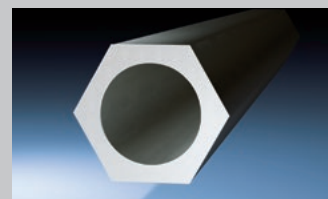
Special profiles, standard shapes and seamless solid and hollow sections made from corrosion and heat resistant stainless steels form a large part of our extensive production program. Thanks to their outstanding chemical and mechanical characteristics these materials have created new and fast-growing fields of application, e. g., in the chemical industry, in reactor technology, in power plant engineering, in the foodstuffs and in the construction industries.



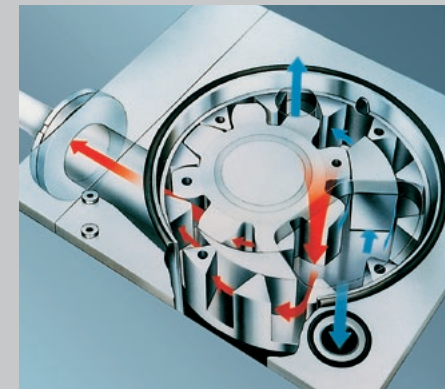
Depth measurement indicator



Hollow sections for ball valves



Special profile for pump impellers for feed pumps

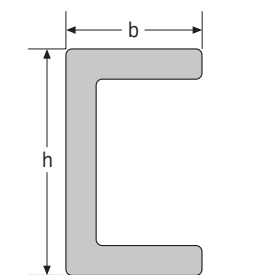
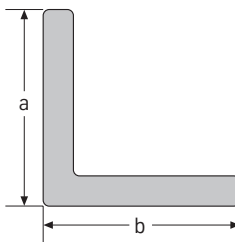
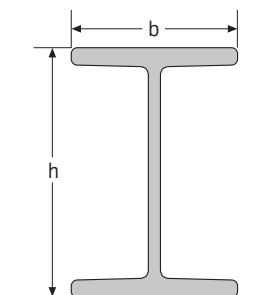
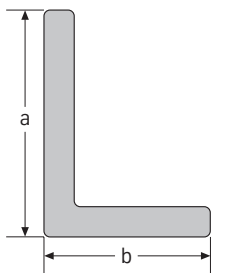
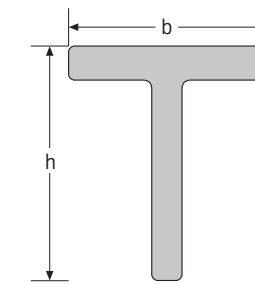


Conveying pinion in meat processing machinery

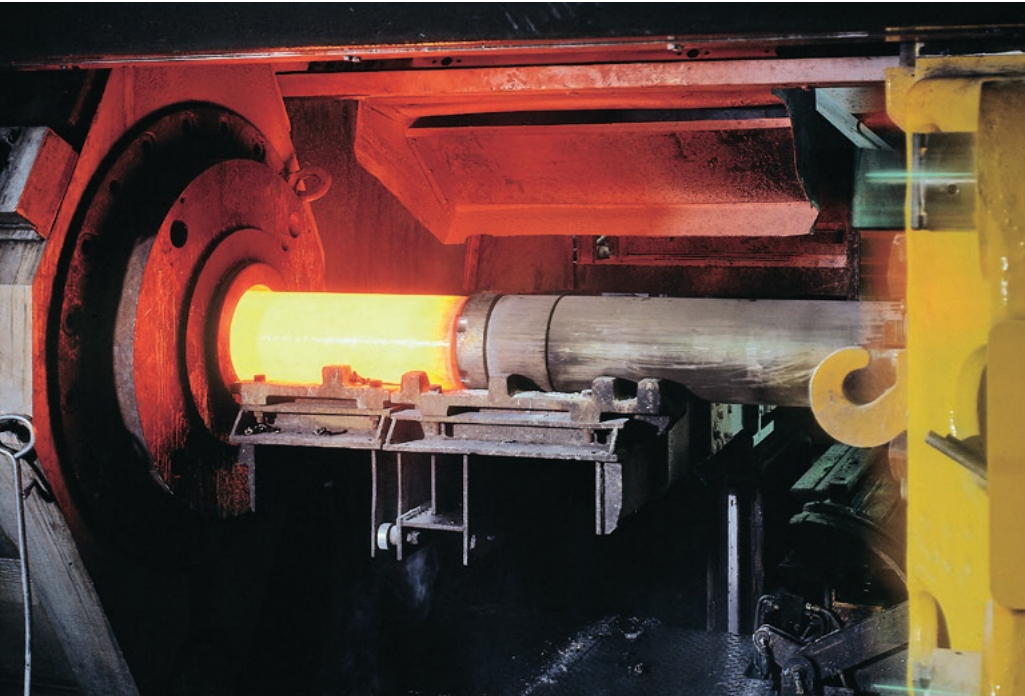


Special profiles for handrails on bridges

Special profile or standard shape? A thorough discussion with our profile and applications advisors can help you decide which profile is the most economical for your needs. Hoesch Schwerter Extruded Profiles GmbH, offers standard profiles made from corrosion and acid-resistant stainless steel, according to DIN EN 10 088-3/DIN 17 440 inside the following dimensions: circumscribed circle up to 255 mm \varnothing and a minimum wall thickness of 4 mm.



Hot extruding



During hot extrusion a round steel billet is pre-heated and, after leaving the furnace, is pushed through a forming die into a profile bar using a ram with an extrusion force of 2,200 t. Hot extrusion offers substantial advantages in comparison with hot rolling, forging or machining.

Hot extrusion can be used to make complex profile shapes even using metals which are difficult to form. In addition, small lot sizes can be produced economically.



Hoesch Schwerter Extruded Profiles GmbH possesses highly sophisticated CAD and CAM systems which are used to support our customers during the design and engineering phases.

Hot extruded profiles offer the benefit of:

- different material thicknesses within one profile cross-section
- the possibility to use in highly sensitive areas, where the special profiles must withstand specific demands of temperature, pressure, aggressive media or hygienic requirements
- seamless structure of solid and hollow sections

Technical possibilities

Dimensions:

- circumscribed circle for solid and hollow profiles up to 255 mm Ø
- inside diameters or diagonals for hollow profiles of at least 20 mm to a maximum of 160 mm
- minimum wall thickness: 4 mm

Lengths:

- up to c. 16,800 mm (depending on profile cross-section); with sawn ends, (fixed lengths by agreement)

Weight per meter:

- up to maximum c. 110 kg/m

Cross-Sectional Tolerances/ Straightness Tolerances:

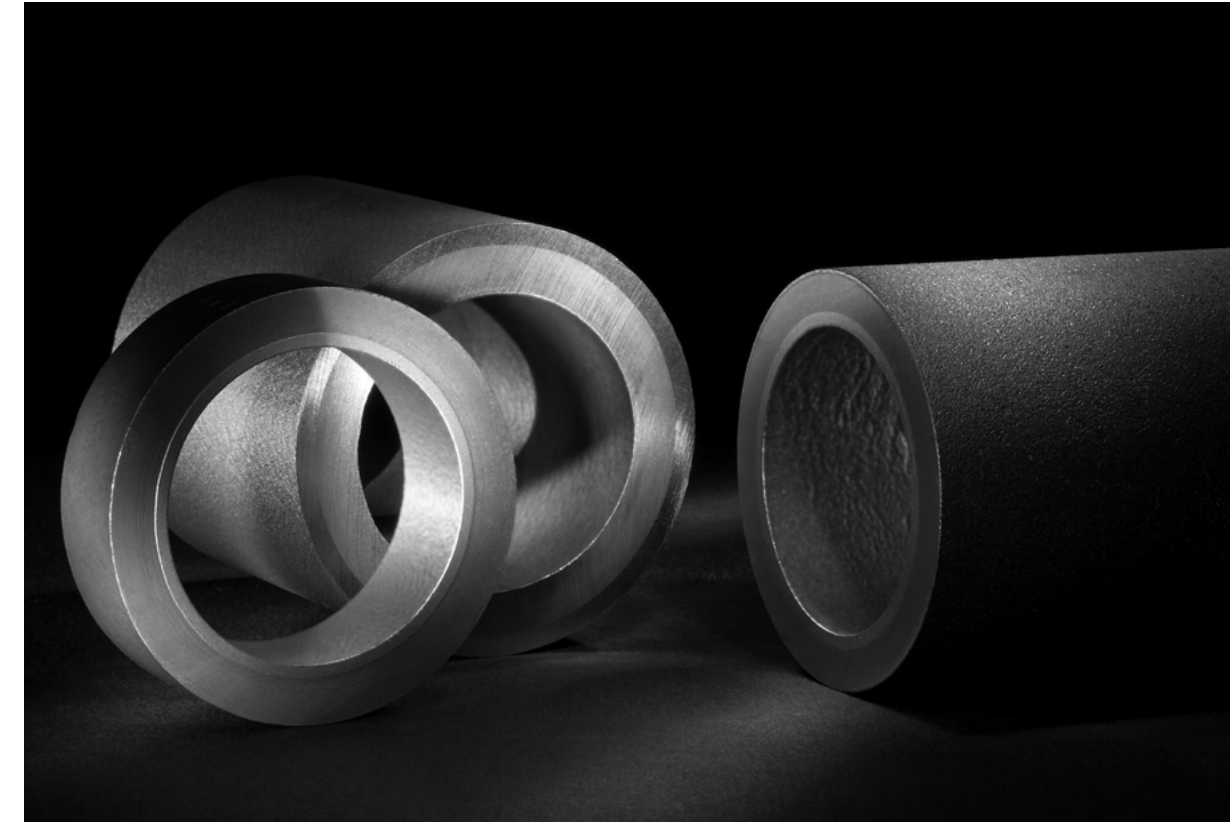
- by agreement, depending on the profile cross-section and material grade; reductions possible, e. g. for functional areas, by agreement

Surface:

- as extruded; descaled or pickled on request

Materials/Treatments:

- nearly all quality and stainless steels in the iron and steel list, special steels, non-ferrous heavy metal alloys
- all required heat treatments are available



Materials with powerful bonding

In practice, components for thermal processing plants are required to meet diverse structural demands. Together with the minimum tensile requirement, these consist of defined resistance to oxidation, corrosion and abrasive wear.

For this application as well as for other cases where a thermal-corrosive load is present, the plant designers took a path to equip the classical boiler pipe – with its existing inherent strength in normal atmospheres – with a “coating” of highly corrosion resistant austenitic material.

As a result of this composition of materials, closely bonded together, a tube is made whose carbon steel element withstands

typical thermomechanical demands whilst the austenitic materials take care of corrosion resistance. The carbon steel and high alloy layer are formed simultaneously during the hot extrusion process at temperatures from 1150°C to 1250°C.

Further advantages of these composite tubes can be described as follows:

- metallurgical bond
- smooth surface
- no dilution
- no cast structure
- high level of endurance strength
- high level of resistance against brittleness

- high level of resistance against oxidation
- simple processing (welding, forming, etc.)





Hoesch Schwerter Extruded Profiles GmbH runs a management system to ensure quality and environmental protection which is certified by an independent accredited institute in accordance with DIN EN 9100.

The following list of norms determine our supply conditions: National standards and regulations, including DIN EN standards as well as international EN ISO standards; Technical Rules for Pressure Vessels (TRD), Stahl-Eisen Werkstoffblätter (SEW), AD Code of Practice (Association of Pressure Vessel Manufacturers), VdTÜV Material Sheets, ASTM (USA) and many more.

If required, the following tests can be carried out:

- mechanical tests
- corrosion tests
- physical tests
- non-destructive tests

The material tests can be certified according to DIN EN 10 204.

Hoesch Schwerter Extruded Profiles GmbH maintains a corporate policy which is not only focused on high product quality and optimum economic efficiency, but also concentrates in equal measure on comprehensive environmental protection, safety and health.

Thus environmental protection is not detached from other goals but is an integral component of a business strategy geared towards long term appreciation. All production processes are examined regularly for their environmental effects and are adjusted appropriately in a continuous improvement process.

Environmental protection for Hoesch Schwerter Extruded Profiles GmbH means:

- development of products which are characterized through longevity

- employment of materials with high recycling capabilities
- continuous improvement of production processes with regard to the highest possible environmental compatibility
- preservation of resources
- continuous monitoring and assessment of environmental effects which result from current and planned activities
- application of necessary and practical measures for the continuous reduction of environmental pollution

The existing environmental protection system was adapted to the international standard specification DIN EN 14001 and applies uniformly for all product areas.



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