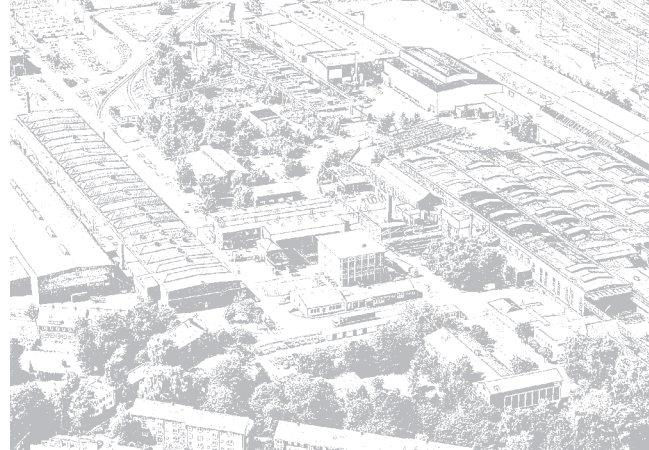


WE OPEN HORIZONS
Special Profiles made from Steel



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Schwerter Special Profiles made from Steel

WE PRODUCE TAILOR-MADE COMPONENTS
AND STRUCTURAL ELEMENTS ACCORDING
TO CUSTOMER WISHES.

Hoesch Special Profiles are used in almost all areas of the steel processing industry for construction elements and components: Whether mechanical engineering or the automobile industry, railroad engineering or facade construction – Hoesch Schwerter Profile GmbH develop their products in collaboration with individual users or branches. Every profile that leaves the works in Schwerte solves a special construction or manufacturing problem.

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

Three processing procedures are bundled at the Schwerte location:

- Hot rolling
- Hot extrusion
- Cold drawing



The employment of special profiles offers branches and users distinct advantages:

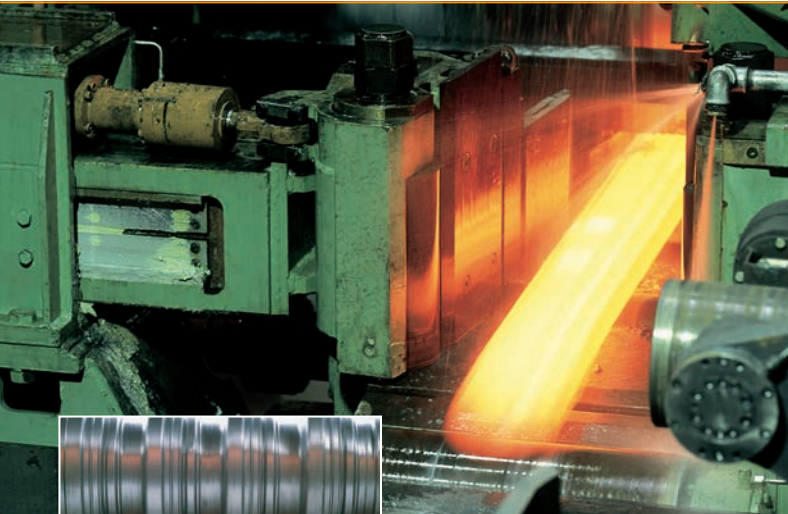
- Elimination of complex machining operations
- Materials savings
- Adaptation to the required function

Hoesch Schwerter Profile GmbH can even produce small quantities of special profiles economically due to the different production processes.

For many branches of industry and businesses Hoesch Schwerter Profile GmbH is also an interesting partner because alongside the different production methods, further processing steps are also offered, such as: sawing, milling, submerged arc welding, drilling, heat treatment and surface finishing.

Application-specific competence

Hot rolled special profiles



During the production of special profiles by hot rolling the input stock is shaped by two cylindrical, opposed rotating rolls into lengths up to 70 m. The products of this forming technique are employed in the most diverse economic situations. Hot rolled special profiles offer innovative solutions throughout many industries – whether it be for automotive, transport or railroad use.



Hot rolled profiles are roller straightened and sheared into individual lengths or sawn into fixed lengths according to customer wishes.

The advantages of hot rolled special profiles are as follows:

- deliberate strengthening of highly loaded component sections
- best mechanical properties through uninterrupted grain orientation
- best shape properties and fitting accuracy through maintenance of the tightest tolerances

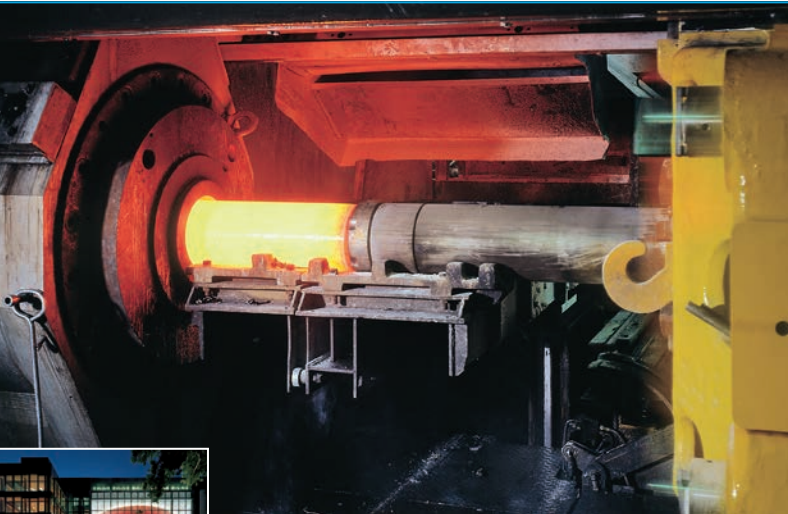
Technical possibilities of hot rolled special profiles

- profile circumscribed circle up to 220 mm Ø; for flat cross-section width up to 320 mm
- minimum wall thickness 4 mm
- lengths up to 19,500 mm
- meter weights of 7 to 80 kg/m
- straightness according to standard specification or by individual agreement
- surface structure as rolled; on request also shotblast or pickled
- employment of structural, high-grade and alloyed structural steels



Application-specific competence

Hot extruded special profiles



During hot extrusion a steel block, after leaving the furnace, is pressed into a profile bar (through a forming die) using a ram and an extrusion force of 2,200 t. Hot extrusion offers substantial advantages in comparison to such procedures as rolling, forging or machining.

Complex profile shapes, which cannot be produced by hot rolling, can be obtained even using metals which are difficult to form. In addition, small lot sizes can be produced economically.

Hoesch Schwerter Profile GmbH possesses highly sophisticated CAD and CAM systems and can purposefully support their customers during the design and engineering phases.

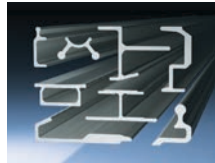
Hot extruded profiles offer the benefit of:

- different material thicknesses within one profile cross-section
- 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 with solid and hollow sections



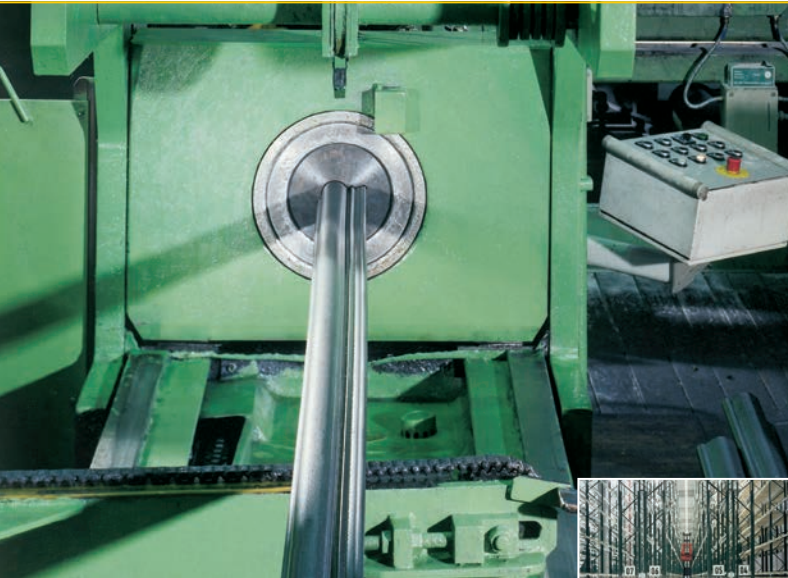
Technical possibilities of hot extruded special profiles

- profile circumscribed circle for solid and hollow sections up to 240 mm \varnothing ; internal diameter or diagonal for hollow sections min. 20 mm, max. 160 mm
- minimum wall thickness 4 mm
- lengths up to 16,800 mm
- meter weights of 1.5 to 100 kg/m
- straightness according to standard specification or by individual agreement
- surface structure as extruded; on request also shotblast or pickled
- employment of structural, high-grade and alloyed structural steels, stainless steels and also special steels



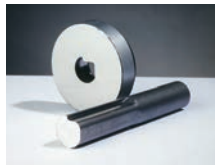
Application-specific competence

Cold drawn special profiles



The process of cold drawing is a procedure by which the metal is formed in order to achieve complex profile cross sections of excellent precision. Special profile bars are drawn through a forming die following careful pre-treatment and descaling in one or more operations.

Through the drawing process the cross-sectional tolerances of hot-rolled and hot extruded special profiles can be further tightened and thus the dimensional accuracy and the surface quality are significantly increased. Cold drawn special profiles offer the same precision which can be achieved by machine processing – contrary to the conventional process however without any waste.



Cold drawn special profiles offer extensive advantages, among other things:

- smooth and scale-free surface
- sharp edging
- undisturbed grain orientation
- increased tensile strength as well as yield point

Technical possibilities of cold drawn special profiles

- profile circumscribed circle up to 200 mm \varnothing ; with flat cross section up to 300 mm width
- minimum wall thickness 4 mm
- lengths up to 11,000 mm
- meter weights of 1.5 to 120 kg/m
- straightness and surface finish according to standard specification or individual agreement
- employment of structural, high grade and alloyed structural steels, stainless steels and also special steels



Quality management

The production-independent system of quality management and development monitors the manufacturing process from processing of orders and input stock controls up to final or release testing in order to ensure the quality standard required by the customers.

The quality management system of Hoesch Schwerter Profile GmbH also aids process development and continuous improvement of all manufacturing areas. Modern laboratories located on site in Schwerte, carry out chemical, physical, mechanical, metallographic and other metalwork-related investigations.

Furthermore, external laboratories are commissioned that are accredited in accordance with DIN EN ISO/IEC 17025. Hoesch Schwerter Profile GmbH is certified in accordance with ISO/TS 16949 on the basis of DIN EN ISO 9001. Beyond that specific permits exist for various special technical applications, for example ship building and boiler making.



Environmental management



Hoesch Schwerter Profile GmbH maintains a corporate policy which is not only focused on high product quality and optimum economic efficiency, but also concentrates in equal measures with the above 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 Profile 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.

Specialist in the large network

Hoesch Schwerter Profile GmbH is a company in the network of Calvi Holding and thus belongs to one of the biggest world-wide providers of customised special profile solutions made of steel.



- 1868** Establishment of **Eisen-Industrie zu Menden und Schwerte AG**. Production of hoops, puddle steel, forged parts and wire.
- 1926** Integration into the newly established **Vereinigte Stahlwerke AG** and the expansion to the steel profile works.
- 1936** Renamed as **Schwerter Profileisenwalzwerke AG**
- 1969** Merger of the Schwerter Profileisenwalzwerke AG and the Hoesch Walzwerke Hohenlimburg to form **Hoesch Werke Hohenlimburg-Schwerte AG**
- 1992** After the fusion of Hoesch AG with the Fried. Krupp AG, Hoesch Hohenlimburg AG becomes a member of **Fried.-Krupp AG Hoesch-Krupp**.
- 1999** After the fusion of Fried. Krupp AG Hoesch-Krupp and Thyssen AG, Hoesch Hohenlimburg GmbH become a member of **ThyssenKrupp AG**
- 2000** Hoesch Hohenlimburg GmbH becomes a 100 percent wholly-owned subsidiary of **ThyssenKrupp Stahl AG**
- 2005** Sale of the special profile division Schwerte from Hoesch Hohenlimburg GmbH to become a member of **Calvi Holding S.r.l., Italy**
- 2006** Newly established as **Hoesch Schwerter Profile GmbH**