



BILLETS FROM CONTINUOUS CASTING



Zeleziarne Podbrezova (ZP) is a group operating in the production of carbon seamless tubes. Established 180 years ago in the heart of old Europe, with over 4,000 employees, it exports all over the world through its trading company **Pipex Italia**.

With an annual production of 380,000 tons of steel products, ZP is one of the most important European companies with a **fully integrated production cycle**. Its continuous casting billets cover a dimensional range from 105 to 280 mm, with square and round section.

High Quality, High Performance

BILLETS produced by ZP are primarily used for the production of **seamless steel tubes for various applications**. Their physical-chemical features and high quality allow to obtain a very high yield even in applications such as **hot forging** of various shapes and weights, used in those parts that transmit movement without undergoing deformation.

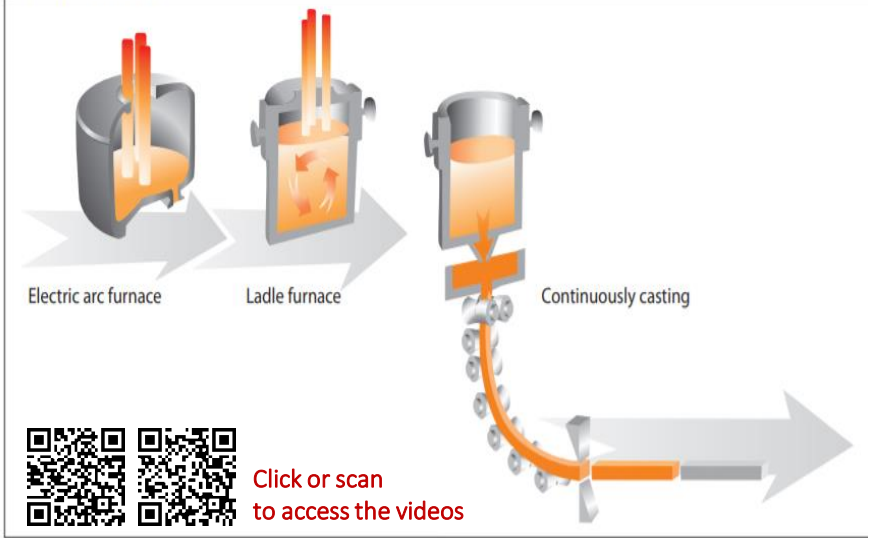
Sectors of application are mainly the following:

- Agriculture (wheel hubs)
- Earth movement (joints, levers, forks ...)
- Oil & Gas (flanges, valves)
- Railway (joints, levers ...)

Square Section Billets 105 mm

The square billet 105 mm is one of the most recent implementations of the steel mill and is suitable for a wide variety of applications on the market.

Flowchart of ZP Steel Production

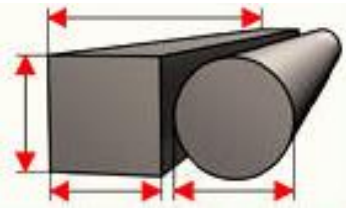


PIPEX ITALIA S.p.A. was founded 27 years ago as a commercial organization of one of the largest European producers of seamless steel tubes: **Zeleziarne Podbrezova (ZP)**. Over the years, Pipex has been able to build a consolidated relationship with its customers by meeting their needs with an offer that goes beyond the dimensional range produced by the Slovakian mother company and with other types of products. Today Pipex offering is composed by: hot rolled and cold drawn seamless steel tubes, seamless stainless steel tubes, billets, hot rolled and peeled bars, structural tubes, fittings and car components. The different suppliers that Pipex represents in the world have been able to fully understand the difference between Pipex and the trading companies: exactly like its many suppliers, Pipex belongs to a manufacturing group and therefore this is what makes it possible for Pipex to be able to transfer to its customers not just a product catalog but a set of technical-industrial knowledge that characterizes the products and their applicability in the different business sectors. Moreover, the possibility of taking advantage of Pipex warehouse in Italy allows the many producers it represents to have their goods immediately available from stock. Pipex today exports all over the world and provides a range of services related to technical and plant engineering aspects, legal, financial and commercial assistance, logistics and marketing & communication.



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Steel Range

Zeleziarne Podbrezova can supply a wide range of steels as shown in the below table, both in accordance with the main international standards and with customers' specifications. All steels are fully killed.

Chemical Composition in %									
	C	Mn	Si	Cr	Mo	Ni	V	S	P
Min	0,05	0,3	0,1	0,05	0,05	Min	0	Max	Max
Max	1,2	2,5	1,3	2,5	1,1	3,40	0,8	0,035	0,035

Lengths

Billets lengths are available from **4.000 mm** to **9.500 mm** with a length tolerance of **+50 mm**.
The deviation from straightness is $\leq 1\%$ of the length.
The obliquity of the front side is 5° .

Marking

Each billet is marked with the casting number, the steel grade and the number of casting line. The information is stamped or, by agreement, color-marked with indelible paint on the front of the billet.

Supply Conditions and Billet Surface

Billets are produced by continuous casting and supplied without additional heat treatments. Dimensional and surface features are in accordance with manufacturing standards or, on request, in accordance with specific customer request.



Square Section Billets

Section [mm]	Dimensional tolerance [mm]	Sidelong max [mm]	Section area [mm ²]	Metric weight [kg/m]	Fillet radius [mm]
105	± 3	± 4	11.000	86,0	R = 2,5 mm ± 1 mm
125	± 3	± 5	15.600	121,5	R = 3 mm ± 1 mm
150	± 3	± 6	22.420	175,5	R = 3,5 mm ± 1 mm
160	± 3	± 6	25.600	198,0	R = 4,5 mm ± 1 mm
180	± 3	± 7	32.100	253,5	R = 5,5 mm ± 1 mm
200	± 4	± 7	39.680	312,0	R = 6,5 mm ± 1 mm
205	± 4	± 7	40.652	317,0	R = 40 mm ± 2 mm
225	± 5	± 9	50.170	395,0	R = 7 mm ± 1 mm
280	± 6	± 11	76.662	615,0	R = 7,5 mm ± 1,5 mm

Round Section Billets

Diameter [mm]	Dimensional tolerance [mm]	Ovalization [mm]	Section area [mm ²]	Metric weight [kg/m]
150	± 2	3	17.662	138,5
180	± 3	5	25.434	199,6
210	± 4	5	34.618	270,0
240	± 4	5	45.216	352,7
260	± 5	6	53.066	414,0
280	± 5	7	61.575	475,0