



## Welcome to the Glassworks and Mini-brewery Novosad and Son in Harrachov, the oldest glass-factory in the Czech Republic!

Today, we not only wish to show you the beauty of our products, but we also want to expand your knowledge about glass-production itself, the most famous industry coming from the Czech Republic.

At the beginning of our tour we will first visit the melting house, then the cutting room, the beer brewery with the restaurant, and finally the glass and ski museum.

The glass-factory was founded by the count family Harrach, as early as in 1712. Glass-factories were always originating in mountainous areas where timber was abundant. It used to be also very common that glass-factories moved from one location to another depending on sources of wood.

After more than 200 years, the count family Harrach decided to sell the factory to a German citizen, Rudolf Endler, in 1943. After the German defeat in the 1945, the glass-factory became the ownership of the Czechoslovakian government, due to nation-wide confiscation of industries. The current owner, the jurist and former glass blower Frantisek Novosad, bought the factory in July 1993.

The production of the factory is aimed at the production of traditional stemware known for its high quality and fine design. Since 1993, the factory also produces crystal chandeliers. Vast majority of the production that the factory manufactures goes for export.

From the very beginnings, local glassmakers were able to melt glass in many different colors including: blue, yellow, red, green, violet, but also black and white. Today we melt glass in more than 40 different colors.

Currently the factory employs about 75 workers. In 2002, the mini-brewery together with restaurant was built next to the melting-house. The brewery produces healthy yeast beer, which is not pasteurized neither filtered; and all adult visitors are welcomed for degustation right after the excursion.

**Inside the melting house**, which you can see in front of you, we have two melting furnaces that are heated by gas. One of them is currently in operation while the other is cold, but always ready to be heated if necessary. The smaller furnace has 6 melting pots, while the bigger furnace has 8 melting pots. A pot is a big container made out of heatproof material that can contain up to 500 kilograms of glass. By having more pots in one furnace, we are allowed to have several different colors ready at the same time.

The glass by itself is made out of several different elements: glass sand, soda, potash, limestone and barium oxide. The so-called "glass batch" is then complemented with oxides of different metals, which give the glass a color. For example, cobalt makes the glass blue, selenium makes it pink, copper makes it green, etc...

The glass is melted during nights by a temperature of some 1450°C, while the processing temperature is about 1250°C.

At these days, the factory employs about 40 glass blowers that work in teams. The work of these 3-5 people is distributed, so that every person has a specific job to do during the whole day. The first person takes a small piece of glass from the pot and blows up a small ball. The same person than takes the ball back to the pot and covers it with a bigger piece of glass. The right amount of glass is than shaped in a form and later blown into a wooded mould. The mould is carved out of beech timber and is kept under water just until the blower uses it for cup production. The cup alone is than handed to another person in a group who than makes the stem. After the stem is produced, the semi-product goes to a person who makes the base of a glass. After finalizing the base, the products are attached to a cable railway that transports the product to a cooling furnace. The cooling furnace than cools down the hot glasses from some 500°C to some 40°C. The cooling process takes about 1hour and 45 minutes. After the product is cooled down, we need to further finalize it by cutting off the top part of the cup and by polishing sharp edges on top.

**Important Notice: BE AWARE OF ALL THE PRODUCTS MOVING ON THE CABLE RAIL ALONGSIDE THE YELLOW LINE.** The products going to the cooling furnace have a temperature higher than 500°C, even thought they seem to be cold. **DON'T TOUCH THEM** – they may burn you badly. Even the pipe alone that is coming back may be still dangerous.

**PLEASE STAY BEHIND THE YELLOW LINES AT ALL TIMES.  
DO NOT CROSS THE CABLE ROAD.  
PLEASE WALK ALONGSIDE THE WALL ONE AFTER ANOTHER, NOT NEXT TO EACH OTHER.**

The next place you will see is the cutting room established in 1895. Even thought the whole plant is more than 100 years old, it still functions dependably even today. A unique central water turbine powers all the cutting machines that you will see inside the cutting room. When a worker gets a plain shape, he firstly needs to draw a net of horizontal and vertical lines, which are used for orientation of the worker. Most of the products that you will see are being cut by carborundum stones. Later when a rough cut is produced, natural stones are used to create fine and shiny effect. After we finish cutting the whole product, we need to put it into acid in order to polish it. The whole cutting room is a very unique piece of equipment that you will not see anywhere else.

Now that we know how the glass is produced, it is the right time to visit the glass museum to see what the glass blowers are capable of. The museum is placed in historical building from 1712, Pansky Dum. The whole collection counts for almost 3 thousand pieces of historical glass, which makes it the largest collection of glass in the Czech Republic. Among the exhibits you can find pieces that are more 100, 200 or 300 years old.

After you tour the museum, you can also visit one of our shops that sell glass and porcelain for company prices. Purchase over 1 000 CZK will be granted 150 CZK discount, you are offered to use an entrance ticket as a discount coupon.