



SILMETA Sicherheitssysteme Patentverwertungsgesellschaft m. b. H.  
A-3124 Oberwöbling \ Oberer Markt 13 \ T. +43 2786 2432 \ info@silmeta.at

SILMETA GesmbH und CoKG  
A-3124 Unterwöbling \ Silmetaplatz 1 \ T. +43 2786 2432 \ info@silmeta.at

www.silmeta.at

## SILMETA

Silmeta – founded in 1976 - is a family owned and operated business in the midst of a vast landscaped park. Accordingly, its ecological footprint is small. Biotopes and wet zones, artificially created with Foam Ceramis technology, nicely break up the industrial campus, against the backdrop of a scenic rock formation and take appropriate consideration for fauna and flora. Production takes place in single-shift operation from Monday to Thursday.

### Our products

- |  |  |   |
|--|--|---|
| <b>INDUSTRIAL FURNACE CONSTRUCTION</b>         | \ Stove setter mortar                          | \ Sleeve filler sand for slide gate closures    |
| \ Refractory concretes                         | \ Stove setter chamotte                        | \ Inoculants                                    |
| \ Refractory industrial paving                 | \ Industrial and hard aggregate screeds        | \ Cupola furnace packets (SiC, FeSi, coke, ...) |
| \ Refractory concrete molded parts             | \ Plastics                                     | \ Metallurgical SiC                             |
| \ Mica foil                                    | \ Flue pipe connections                        | \ Mg master alloys                              |
| \ Highly insulating insulation boards and mats | \ Refractory concretes                         | \ Slag binders                                  |
| \ Ceramic fibers                               | \ Fast binder cements                          |   |
| \ Assembly cement                              | \ Composite slabs                              | <b>AID MATERIALS</b>                            |
| \ Mortars and adhesives                        | <b>SAND / CLAY</b>                             | \ Fiber adhesives                               |
| \ 2K concretes                                 | \ Bentonite                                    | \ Mould black                                   |
| \ Ladle concrete                               | \ Chromite sand                                | \ Silver graphite                               |
| \ Gutter concrete                              | \ Molding sand                                 | \ Blasting abrasives                            |
| \ Coil levelling concrete                      | \ Artificial casting sand                      |   |
| \ Dry ramming mix                              | \ OBB sand                                     | <b>RAMMABLES AND REPAIR COMPOUNDS</b>           |
| \ Turbine stirrer for aluminum swarf furnace   | \ Ground clay                                  | \ Patch compounds                               |
| \ Vacuum formed parts                          | <b>METALLURGY</b>                              | \ Ladle compounds                               |
|  | \ Carburizing agents                           | \ Plastics                                      |
|  | \ Ferroalloys ... (FeSi, FeMn, FeS, FeCr, ...) | \ Gunning mixes                                 |
| <b>STOVE SETTER NEEDS</b>                      |  | \ Foam Ceramic KS 91                            |
| \ Calcium silicate boards                      |  |   |

## SILMETA SYSTEMS

### WORLDWIDE MARKET AND TECHNOLOGY LEADER OF EMERGENCY RUN-OUT PITS

EMERGENCY RUN-OUT PITS FROM SILMETA SYSTEMS GUARANTEE SAFETY FOR THE LIFESPAN OF THE PIT. FOR MORE THAN 40 YEARS.

For multiple reasons, melt can spill from any melting or holding plant. Therefore, such plants must be equipped with emergency run-out pits that can hold at least the entire contents of the furnace and must be positioned directly below the furnace.

Furthermore, it must be ensured that the pits are dry or - as soon as this is not the case - the melting operation must be stopped immediately for safety reasons. Emergency run-out pits that must be drained at the bottom area by means of drainage material (slag, gravel, aerated concrete, etc.) only partially meet the requirement. Especially if sheets and gutters on the furnace road are required for drainage, in order to drain off any water occurring in front of the furnace pit to keep the pit dry. The same applies to pipes inside the pit that are used for steam drainage. Since the innovation of Foam Ceramic applied as a solid drainage material in 1992 by Silmeta Systems, emergency run-out pits are drained not only in the area of the floor, but also inside walls. Silmeta Systems installations do not require sheet metal, pipes or any other individual parts that, once defective or knowingly or unknowingly removed, could in any way affect the safety in the case of a steam explosion. Different designs are influenced both by the size of the plant and the type of melt, and affect the maintenance costs incurred.



## MILESTONES AND FACTS

**2023**

The first 20 foot container stacked with emergency run-out pit modules leaves our factory heading to the US.

**2022**

Incorporating the idea of producing "water- and water-vapor-permeable barrels", it is possible for the first time to produce hollow bodies made of water-permeable material to hold 1,000 kg of molten iron (the contents of a 200-liter barrel) without reinforcement.

**2021**

Silmeta Systems received patent 523521. It provides the basis for emergency run-out pits in modular technology.

**2020**

Start of production for Drain Bricks.

**2019**

Commissioning of a bagging plant with special features: No product segregation, as well as the greatest possible safety regarding grade purity. Three silos with three separate filling spouts are the prerequisite.

**2018**

Commissioning of a vibrating mill for grinding fineness up to DIN70.

**2017**

Foundation of Silmeta Umwelttechnik  
Development of the world's first „overgrowable concrete“. The material sets under water and is primarily used for the construction of embankments in biotopes and retention basins.

**2016**

Patent USA (1992)

**2015**

The takeover of Frings increases the total company footprint to 70,000 m². Mr. Erwin Siegmund is the sole owner of Silmeta. In the following years, products were streamlined and the production focus shifted to foundry products, as well as general needs for stove setting and furnace construction companies. The production of prefabricated parts made of refractory concrete is expanded.

**2014**

On the basis of this scientific work, the VDG Code of Practice S80 is developed.

**2013**

Set up of an e-charging station and purchase of three e-cars.

**2012**

Report ÖGI-A-No. 43.272/1 Surface behavior of a solid drainage material when exposed to molten iron.

**2011**

Silmeta Systems awards the Institute for Risk Research the following research contract: Steam expansion behavior in emergency run-out pits.

**2010**

Construction of the world's first twin-shell emergency run-out pit (pit in the pit) with a containment volume of 130 tons of molten iron. In the following years, about 60 systems of similar design and capacity are built, as well as about 400 further systems of various sizes and specifications in Europe, Asia and the USA. During its participation at GIFA 1994, Silmeta Systems presents a measuring device that shows the exact difference between three different drainage materials or drainage options and, moreover, also records the speed in liters per second.

**2009**

Real-time operations show that loosely placed cupola furnace slag in emergency run-out pits tend to compact, and floors produced in this way practically build an impervious layer after a short time.

**2008**

The VDG task force presents and publishes a solution for the prevention of explosions through the use of emergency run-out pits. Granulated cupola furnace slag is applied as drainage material in a layer thickness of about 30 cm at the bottom. To prevent the slag from floating, it is covered with graphite perforated plates.

**2007**

A major explosion happens in the melting shop of a German foundry. It is caused by cooling water contacting molten metal. The water-cooled electric melting units, which were becoming ever larger and more powerful at the time, were called into question by the authorities.

**2006**

Silmeta is the first company in Austria to use so-called big bags for packaging and transporting up to 1,000 kg units.

**2005**

Volcanic rock is processed in the screening and crushing plant for the first time and introduced into the foundry as a slag binder. Until then, crushed glass and sand were used in foundries to bind the slag.

**2004**

During this period, 4,000 m² of halls, several bulk boxes for a total of 12,000 tons, as well as 25 elevated silos, a covered silo loading dock, a weighbridge, etc. are built ...

**2003**

Commissioning of a production line for cupola furnace packages and paving bricks. From now on, appropriate additives such as FeSi, SiC, Cu and FeMn enable small foundries to produce ductile iron from the cupola furnace for the first time and in a streamlined way.

**2002**

Silmeta was founded in an - at that time - abandoned quarry owned by Frings GmbH. Since then, natural reclamation has been and still is under its way by planting more than 300 trees, as well as 30 fruit trees in our orchard. More than 400 shrubs and bushes protect against rockfall. The area was developed with about 600 meters of roads, paved or partly paved with water-permeable paving stones from our own production. The wastewater is treated in biological clarification and sedimentation tanks. Electric current, as well as a gas connection, provide the needed energy supply. Our three wells are supported by the local water supply. Surface water is infiltrated on our land.

**2001**

Office building Silmeta Systems (1992)

**2000**

International Foundry Trade Fair Düsseldorf (1994)

**1999**

Office building Silmeta Systems (1992)

**1998**

Silmeta Systems is founded and moves into the remodeled office building in Oberwöbling.

**1997**

After two years of research and development, the invention of the KS 91 Foam Ceramic is patented in Austria, Europe, the USA and Japan and published in several technical journals. KS 91 Foam Ceramic enables drainage for emergency run-out pits to be carried out both in the floor area and in the enclosing walls.

**1996**

Precast refractory shapes (1989)

**1995**

Pan grinder (1976)

**1994**

Company premises (1976)

**1993**

Vegetable pond shore porous concrete (2012)

**1992**

E-charging station at the factory premises (2017)

**1991**

Planter pots made of Foam Ceramic (2023)