Steinzeug | Keramo

Welcome to Steinzeug | Keramo

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A brief introduction

Steinzeug | Keramo specialises in the development and production of vitrified clay pipes and fittings.

High-quality products are made for sewer systems and industrial applications at three production facilities in Hasselt (Belgium), Cologne and Bad Schmiedeberg (both in Germany).

Steinzeug | Keramo offers a range of pipes and fittings in diameters from DN 100 mm to 1400 mm. In addition to traditional pipes and fittings with spigot and socket joints; microtunnelling and jacking pipes, inliner pipes, drainage pipes, mini chambers, manholes and cladding sheets are all part of the extensive range.

Vitrified clay is a material created after firing high quality clay under strict control at a temperature of around 1200 °C. In contrast to many pipe materials used in the sewerage industry vitrified clay is chemically resistant and has high mechanical strength and together with its excellent hydraulic characteristics, guarantees an extremely long lifespan.

Steinzeug | Keramo sells its products worldwide, in particular Europe, the Middle East, the Far East and Oceania. Sales and product support is conducted locally either via a skilled network of permanent staff or local market partners.

Hasselt

Frechen

Bad Schmiedeberg

Why vitrified clay?

Vitrified clay pipes are made from blended clays. This material is fired in an automatically controlled process at very high temperatures until a sintering process occurs (the material turns semi-liquid). When cooled, the material is hard and durable.

A modern vitrified clay pipe is a combination of the unique material characteristics of fired clay plus decades of experience, research and development. Over the centuries, not a great deal seems to have changed with the product, however there are considerable differences. The mechanical strength of vitrified clay pipes has now evolved until it exceeds that of reinforced concrete. A strong and rigid pipe body and the precision of more flexible joints ensure that the sewer remains watertight under even the most extreme conditions. Vitrified clay pipes are not damaged by high-pressure cleaning and are unaffected by household or industrial effluent even in the long term. The result of this is a product with a very long lifespan at the forefront of genuine green friendly ecological manufacturing. A significant contribution to this longevity comes from the material properties that remain constant and unchanged over time.

Steinzeug | Keramo provides vitrified clay pipes for both trench and other civil applications. Our product range is complemented by a full range of auxiliary pieces and accessories allowing vitrified clay pipes to be universally used.

Tour stopping places

1. Display stand

An overview of our product range.

2. Keraline (ceramic tile line)

Production of ceramic plates for remediation work of buildings in the wastewater sector.

3. Preparation control booth

Grinding (clay/chamotte), mixing and supplying the presses using automation.

4. + 10. Pressing and glazing

Vacuum extrusion takes place in the vertical presses. The pipe body and collar are formed, the non-erasable marking is applied and the pipe is then finished and glazed.

5. + 14. + 15. Unloading

After firing, the pipes are taken off the kiln trolleys and thoroughly inspected. The firing ring is removed and an initial visual and acoustic check are made.

6. + 13. + 18. Palettiser installation

After the seals are applied, the pipes are palletised. Depending on the diameter, the pipes are packed in rows of 3 or 4 on spars with laths between, in mini/maxi packages. This allows smaller packages to be transported on the building site. The packs are placed in the stacking area and released for sale after approval by quality control.

7. Gluing in the rubber seals

For the smaller diameters, lip seals are used (connection system F - seal L) that are glued into the collar manually.

8. Laboratory

Tests are carried out in the laboratory on all raw material and products.

9. Clay hall

The manufacture of vitrified clay pipes starts with the natural raw material clay.

11. Tunnel kiln (entrance)

The tunnel kiln actually consists of three parts. There is a tunnel for preheating, a tunnel in which the firing process occurs and finally a tunnel in which the products are slowly cooled. We have three tunnel ovens, two of which are 120 m in length and the third of which is 160 m long.

12. Tunnel kiln control booth

After drying with air recovered from the kilns, the pipes are fired in a tunnel kiln. The actual firing temperature is about 1150°C. The specific strength-related properties of a vitrified clay pipe are obtained in the last phase of the firing process.

16. Moulded PU seals

Pipes from DN 200 mm upwards are produced using connection system C. A calibrated mould is used to inject hard PU (polyurethane) into the collar, and soft PU onto the spigot end. This is known as a K seal.

17. Collar inspection

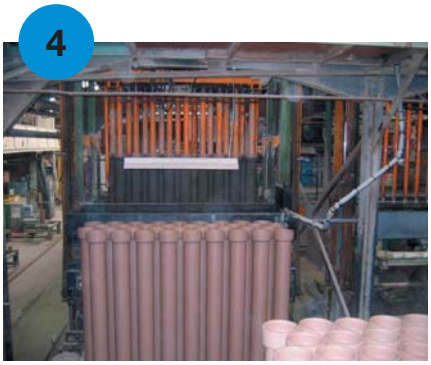
A final visual check is performed here and the two seals are finished. The pipes are stacked alternately (collar / spigot) with the crown stamp facing up.

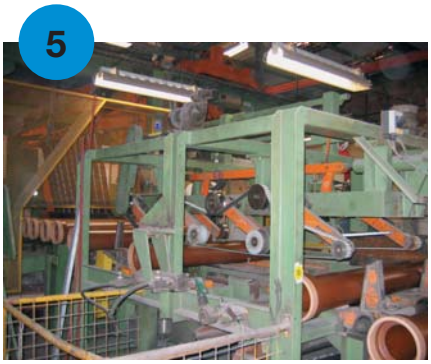
19. Pit hall

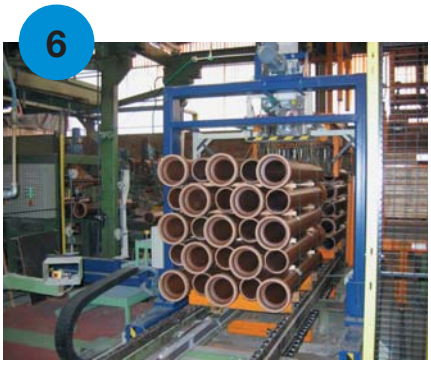
Vitrified clay inspection chambers and manholes are produced according to the client's requirements.

20. Cutting hall

This is where the cutting is done for pipes that will later be used for inspection chambers or accessory pieces.





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barriers
meeting point
storage hall
canteen
chimney
casting hall
poly hall
tunnel drier 3
tunnel drier 2
tunnel drier 1
tunnel kiln
unloading rails
cutting hall
(sawing/milling)
pit hall
seal adhesion
unloading
casting
unloading rails
tunnel drier
tunnel kiln
buffer
preheating
setup position
pressing hall
clay silo
pump/compr.
changing room
plunge bath
kitchen
laboratory
unloading rails
unloading rails
waiting rooms
setup position
pressing hall
preparation
tunnel driers
clay hall
preparation
preparation cornelwall
chamotte installation
chamotte hall
clay transport
clay hall
tunnel driers
chimney
Keraline
clay bunker
meeting point
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Safety instructions

To ensure the safety and security of this tour the following rules apply:

- stay in your group (max. 20 people per guide) and follow the guide;
- do not leave the marked route; it has been especially designed to minimise risks;
- the route is indicated by red arrows and the signs "bezoekers" (visitors);
- there are 20 numbered locations where information may be given. You should stay within the highlighted zone (red stripe on the ground);
- do not go into areas where a symbol shows that access is prohibited for visitors;
- watch out for forklift traffic;
- be careful when going over cross tracks; height differences are marked with yellow and black stripes;
- wait until the moving cross-track trolleys have come to a stop before crossing;

- do not touch pipes and fittings that are in production with your bare hands (due to the risk of burns and cuts);
- observe the smoking restrictions at the places indicated;
- visitors who have a car must observe the 20 km/h speed limit;
- in the event of an emergency (accident / fire) you should go to a muster station and await further instructions.

Interesting facts

- Our factory in Hasselt employs approximately 180 workers and 70 service staff. The three factories together employ approximately 600 people, 400 workers and 200 service staff.
- Vitrified clay pipes are made of ± 70% clay and ± 30% chamotte. Chamotte is ground pre fired clay granules that are recycled from the production process.
- Clay is our most important raw material. About 350 tons of pipes and auxiliary pieces are produced on a daily basis, varying in diameter from 100 to 800 mm.
- To make sure we can provide the best possible service to our customers, there is a stock of about 15,000 tons of pipes and accessory pieces.
- Filters were put in place in 1999 to purify the flue gases from the kilns, in line with the Vlarem II regulations (Belgian environmental legislation).
- The production time varies from 6 to 10 days, depending on the rate of progress through the various kilns.
- Every pipe is subjected to an acoustic check. That is about 7,100 items per day.
- Rainwater on the factory site is collected and used in the production process for making the glaze.

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