# Klinkerwerke Heinrich W. Muhr GmbH & Co. KG

Klinkerwerke Muhr GmbH & Co. KG  $\cdot$  Fackeldeystraße 100  $\cdot$  46446 Emmerich am Rhein



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Ihr Zeichen

Ihre Nachricht vom

Unser Zeichen

46446 Emmerich am Rhein

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#### **Environmental certificate**

#### **Product description**

Facing bricks, paving bricks and aprons belong to the group of heavy clay products.

#### Delivery

Facing bricks, paving bricks and slips are available in different sizes and sizes depending on the application. The indication of the respective dimensions and the permissible tolerances are regulated in the following standards: DIN EN 771-1

DIN EN 1344

### Raw materials / auxiliary

In addition to the main raw clay, lava, sand and sawdust are still used. These raw materials come from Germany, Holland and Belgium.

### Production

The production works one-shift basis in a 5-day week, whereas the drying and firing process takes place 24 hours a day, 7 days a week. There are 7 different formats. The color spectrum ranges from white-bright-colored, yellow-bronze, bronze-colorful-flamed, red-brown-colored, red-brown-colored flamed, bronze-colored, red, red-colored to red-flamed. The factory employs a total of 48 people. Worker and apprentice.

#### Processing

Here, first of all, a rolling mill is used. The crushing of the clay takes place between the opposing rolls by pressure.

### Shaping / Pressing

Three different types of press techniques are used, all of which are modeled after the old, hand-formed stones.

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# Drying

The sheets filled with fresh-pressed moldings are then automatically brought into the dryer with a group of vehicles.

# Burning process / tunnel kiln

The firing process as a final ceramic-technological process. By feeding the tunnel kiln cars at performance-related time intervals, the green compacts are heated continuously and burned when passing through the fire zone at about 1100 ° C to formwork facing. Clinkers are fired at approx. 1200 ° C.

### Health during production

The regulations of the employers' liability insurance association apply, special measures for the health protection of the employees are not to be made.

# Environmental during production.

Strains of water and soil do not arise. The mixing water used is released again during the drying process in the form of water vapor.

### Air

The manufacturing process is subject to the requirements of TA Luft. Emission reduction is achieved through the operation of flue gas cleaning systems. Improvement of furnace control is achieved through computer-aided optimization.

### Noise

Due to soundproofing measures, the measured values are far below the required values.

### Product processing

The bonding of the facing bricks to each other takes place with masonry mortar according to DIN EN 998-2 in accordance with DIN EN 1996-2. Paving bricks are used either in unbound or bonded laying. The use of aprons is carried out either in accordance with / DIN 18515-1 / or in accordance with the general building inspectorate approvals of the Deutsches Institut für Bautechnik.

### Occupational safety and environmental protection

The weights of the individual bricks are below the recommendations of the building trade associations of 25 kg. When laying bricks, occupational safety measures are complied with in accordance with the regulations of the employers' liability insurance associations and according to the manufacturer's recommendations. For cutting and cutting usually wet process are prescribed. For dry cutting work, wear a dust mask (P3 / FFP 3). Remaining material Remains of bricks left on the construction site must be collected separately.

# Packaging

The polyethylene films as well as paper and cardboard are recyclable. In Germany, paper and cardboard as well as PE films can also be disposed of through a contractual agreement with waste disposal companies.

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### Condition of use

As stated under point 1 "Basic materials", bricks are predominantly clay, loam and auxiliary materials. The brick constituents are bound in the use state as solid materials (ceramic bond). Durability in use Brick does not change after leaving the stove.

# **Environment & Health During Use**

Bricks do not emit substances harmful to the environment and health. The natural ionizing radiation of bricks is extremely low and harmless to health.

### **Reference service life**

The reference service life when installed in accordance with the rules of the technology for indefinite years. But at least a few generations.

### **Exceptional effects**

In the event of fire, no obstructive and toxic gases and vapors can form. The mentioned products fulfill the requirements of building material class A1 according to / DIN 4102 / (and / or / DIN EN 13501-2 /) "non-flammable".

| Fire protection   |          |
|-------------------|----------|
| designation       | value    |
| Building material | class A1 |
| Burning dripping  |          |
| Smoke production  |          |

### Summary

Investigations and assessments show that the natural radioactivity of facing bricks, paving bricks and aprons allows the unrestricted use of this building material from a radiological point of view. They do not contribute to a relevant increase in the radon concentration in rooms, Their contribution to the inhalation dose is negligible compared to the proportion of radon in the soil.

The demand for more sustainability in the construction industry is the ultimate goal. Neutral institutes regularly examine samples to investigate environmental hygiene and other properties. These third-party reviews underline the sense of responsibility for sustainable construction. Longevity and energy is our efficiency. "The energy balance of the building material of pure clay contributes to the environment-conscious building. Our products are low-maintenance and weather-resistant. They are also extremely robust and durable. They preserve their value over decades and care for the whole year It also helps to reduce the energy consumption and CO 2 emissions of a heating system, which also benefits the environment.

Mit freundlichen Grüßen Klinkerwerke H.W. Muhr GmbH Co. KG

Peter Lützen General Manager

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