

Technical Information

GL03



Glazes and Engobes for Roof Tiles

Color sways our perception of well-being in all aspects of our daily life. Our desire to impose individuality on our immediate environment using color, in a world where lives and careers change fast, affects our choices in lifestyle goods. This is much evident today in the automotive industry, and in interior design and fashion.

When building or renovating a house, selecting colorful glazed or engobed roof tiles enables us to make an individual statement in shaping our environment imaginatively. Glazes and engobes achieve the additional benefit of significantly reducing dirt-retention and moss growth on the roof tile surface, so that the householder gains a high-quality as well as an optically attractive roof.

To give you the opportunity to fulfil your customers' wishes for personal color choices in high-quality roof tiles, we are proud to offer you a comprehensive range of both leadfree and lead-containing colored glazes and engobes for roof tiles. Our experienced staff is available to help you with your selection and to answer your technical questions at any time.

The surface of a roof tile

Using our engobes, sintering engobes, and glazes, you can achieve matt to glossy roof tile surfaces.

A broad color spectrum of glazes is available for selection, from transparent to opaque, and including iridescent and metallic effects.

Composition of our engobes and glazes

We provide engobes and glazes for roof tiles that are both lead containing and lead free. The leadfree products, if suitable for your roof tile body and firing conditions, enable you to establish an environmentally friendly production line, and also to market your products to customers for whom protection of the environment is a priority.

Our engobes and glazes can be formulated with or without additives, according to your wishes.

Physical properties and firing-conditions of our engobes and glazes

According to the composition of your roof tile body, we determine the suitability of our glaze or engobe in regard to its thermal expansion coefficient (CTE) and softening point. Temperature ranges can be adjusted to suit the particular firing conditions. Our glazes and engobes are available premilled or dispersible.

Examples

In the following table, we summarize the possibilities for shaping, firing, determining the appearance, and finishing roof tiles. This table, along with an additional column for listing your specific requirements, is attached to this leaflet as a fax form. Please fill this in and send it to us to use as a basis for our proposal.

Possibilities for shape, firing, appearance and finishing of roof tiles

Roof tile type	Flat tile, shaped tile
Temperature	980 °C to 1140 °C
Firing duration	4 to 24 hours
Firing energy	Gas, electric, oil
Color of body / fired	Red, yellowish, brown
CTE x10⁻⁷/K of body	50 to 70
Finishing products	Glaze or engobe / lead free or lead containing
Surface	Glossy, silk-matt, matt
Color shade of surface	Data from RAL or Pantone catalogue or sample
Effect	Fumed, metallic
Preparation / glaze, etc.	Turbo twirling stick, mill
Application	Centrifuge, curtain-coating, fuming, spraying

Technical support: trial production / ongoing assistance

We gladly offer our support when you carry out trial roof tile production runs at your plant, if you are using a glaze or engobe which we proposed to you in accordance with your requirements. If shifts in the body composition occur (such as in S, Fe content), then the kiln temperature profile and the kiln-loading arrangement must be reconsidered. After a successful trial production, the roof tiles should be analyzed for their anhydrite value, their acid and base resistance, their color (either by measurement or visual inspection), and their resistance to atmospheric conditions.

During further production runs, our staff is at your disposal to answer your technical questions at any time.

If needed, you can take advantage of the opportunities for analysis provided by our chemical and physical laboratories.

Quality control of glazes and engobes

The quality of all glazes and engobes is continuously tested during production – we have been ISO 9001-certified since 1994. Incoming raw materials follow stringent specifications and are examined on arrival at our premises. Release of our products is controlled by individual test specifications for every single product. Depending on the amount ordered, we will perform quality tests individually adapted to a customer's production conditions, when requested.

However, it is also of great importance that you as the customer check the incoming glaze or engobe carefully.

Only you are equipped to run tests at an industrial scale under your current production conditions, and consequently to determine the influence of the composition of your particular body (S, Fe content), your current kiln profile, and the way in which you load the tiles into the kiln.

Establishment of standards

After a successful trial production, a standard for the new product developed for your individual application is defined. We use this standard to establish, with you, the tests to be conducted in future, and the differences between standard and batch that will be tolerated.

Endcontrol of the finished roof tile

We recommend that you carry out chemical and physical tests at intervals, in the same way as they were conducted during the trial production, to:

- Determine anhydrite value
- Evaluate acid and base resistance
- Determine resistance to atmospheric conditions
- Determine surface and color shade (visually).

If you are unable to conduct any of these tests by yourselves, we would be happy to supply the names of suitable institutes which can help.

Packaging

We deliver our glazes and engobes in premeasured bags (25 kg), or provide you with big bags containing a specified weight.

Product liability

All our products undergo comprehensive final testing, during which specific tests and release

criteria for each product are analyzed. These tests are developed according to the latest expertise regarding the relevant physical and chemical characteristics of roof tile glazes and engobes. We guarantee all the data that we test, but our warranty does not extend to any other problems with the finished product.

Limitation of Warranty and Liability

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