

SLATE ROOFING AND ITS TECHNICAL CHARACTERISTICS

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Abstract: Materials are considered to be wooden elements: Kavvari, Solkavar, Kavvarisa (Tili), as well as ceramic tiles and slate. Slate has features that distinguish it from all other types of roofs: with the help of slate you can cover the entire surface of the roof of any geometric shape and style. Unlike other roofing materials, it has little color, predominantly a natural gray tint, the structure is layered, with a characteristic oily sheen. To create the ornament, green and burgundy slate was used.

Key words: slate roofing, color, shade, ecology of tiles, hygroscopicity, moisture.

Introduction

Slate is natural and has a layered structure. It appeared several million years ago. Under the influence of water and wind, rocks were destroyed, the remains of which were deposited on the bottom of the sea. It formed a fine-grained structure in the form of clay and silt. Thus, clay formations several kilometers thick gradually formed. Under the influence of external pressure, the lower layers of the newly formed layers became fossilized. Then they were recrystallized, the rocks were flattened and sorted into layers. The thickness of each layer is 1...9 mm, the liquid

structure allows the layers to be easily separated from each other. As a result, slate roofing has good heat and sound insulation properties, since the stone has no internal capillaries, it does not allow or absorb water at all, and is resistant to frost and ultraviolet radiation. Flexible yet cool, shale is easy to drill, cut and locate.

Main part

Technical characteristics of slate:

- ❖ Slate tiles have a thickness of 4...9 mm.
- ❖ Slab sizes vary from 20...25 cm to 30...60 cm.
- ❖ Weight of slate roof – 25 kg/m², double – 50 kg/m².
- ❖ The roof slope must be at least 22°, taking into account that the lower the slope, the larger the tiles should be and vice versa.
- ❖ Flexural strength 60 MPa.
- ❖ Used for roofs of any geometric shape;
- ❖ Slate lasts 150...200 years;

The advantages of a slate roof are:

- Neutral and environmentally friendly material;
- He does not get tired during the entire service;
- greater strength of the roof;
- Resistance to temperature changes;
- high frost resistance;
- high density;
- Resistance to corrosive processes and ultraviolet rays;
- Low water absorption;
- Does not deform under the influence of heat;
- good sound insulation;
- Longevity

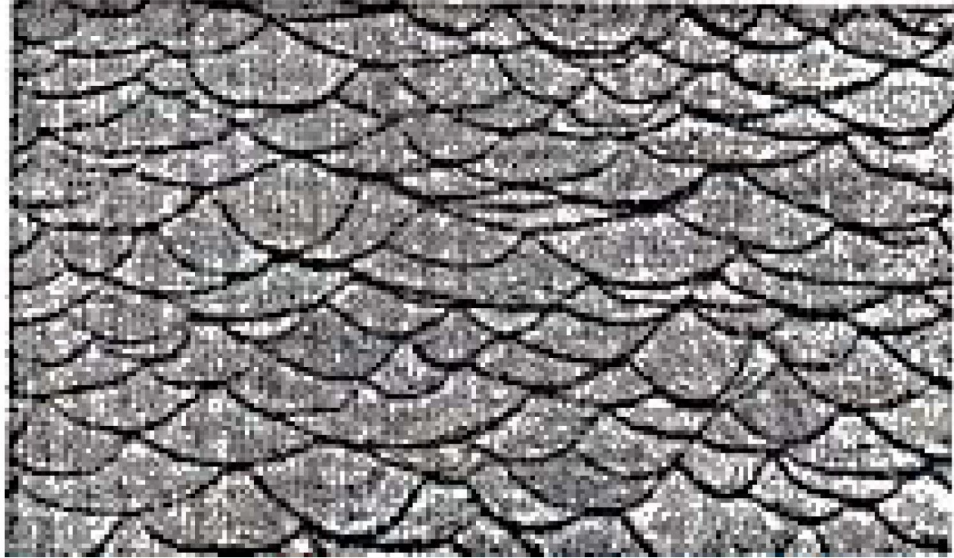


fig. 1 Slate roof fragment

Slate roofing is an elite material for retail trade. The tiles have different geometric shapes and sizes (Fig. 2). Once the plate has been moved, it must be processed by hand. Natural range of colors - dark shade:

- ✓ deep black color;
- ✓ dark green;
- ✓ dark brown;
- ✓ Gray.

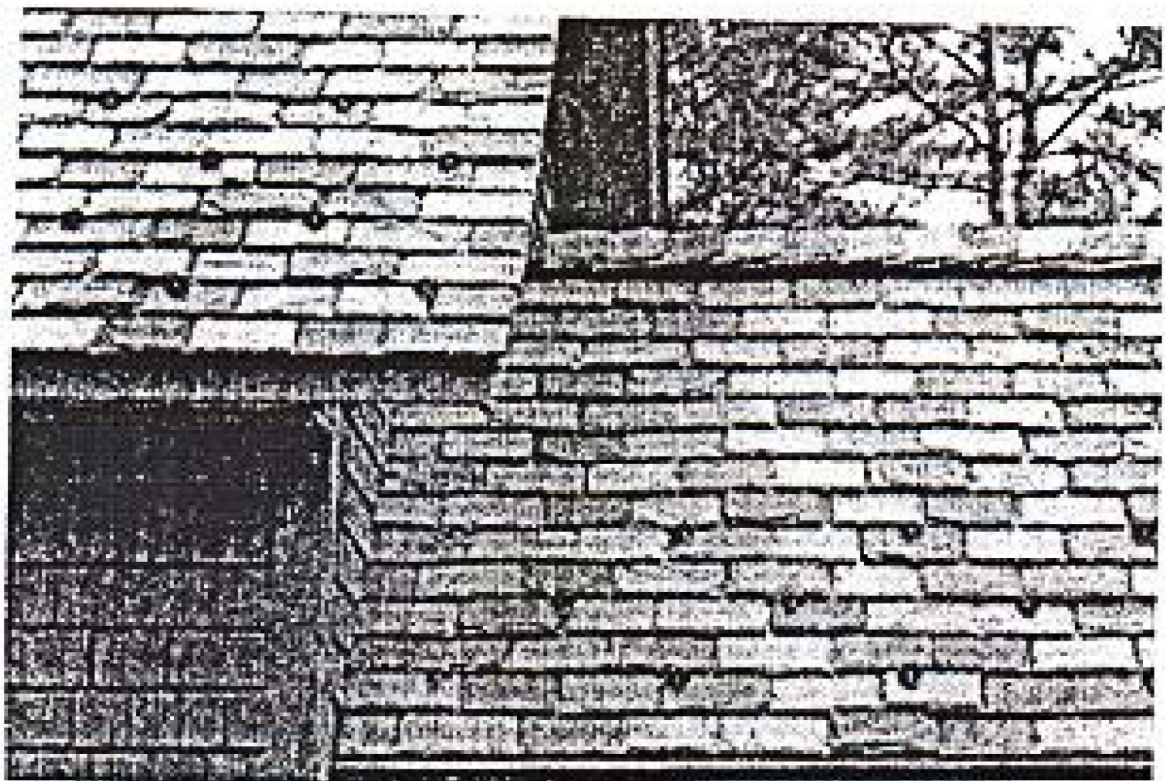


fig. 2 beautiful and cozy slate roof

There are slates with more saturated colors, but they are more often used for ornamentation and decoration with various decorative elements (Fig. 3).

Slate has many advantages, but also has disadvantages:

- High-quality and correct installation of a slate roof can only be performed by a highly qualified and experienced roofer, of whom there are not so many.

- The process of laying slate is complex and labor-intensive, so such roofing work is quite expensive.

- High cost is due to the difficulty of obtaining raw materials and the use of manual labor in production;

- The large mass of a slate roof requires additional reinforcement of the roof structure.

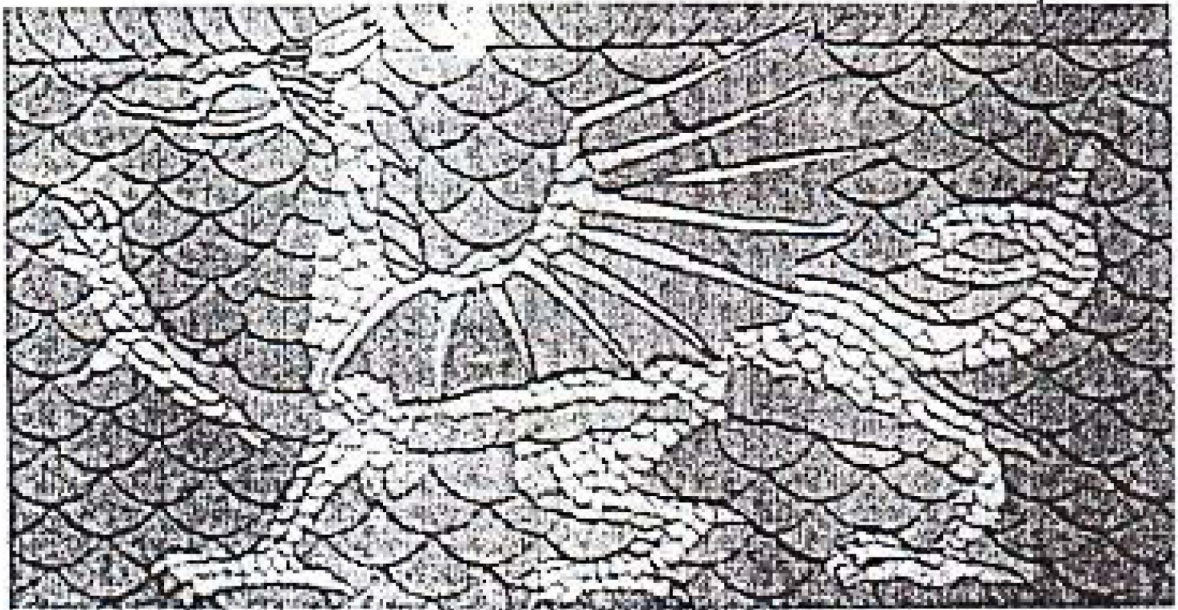


fig. 3 Slate roof with dragon design

Not all types of slate are suitable for roofing. Roof slate is durable, has distinct layers and is not hygroscopic. It comes in different sizes and shapes, resulting in over 250 types of patterns that give slate tiles their contour, and the tiles are also laid in different ways.

There are three main ways to lay tiles:

- ❖ French;
- ❖ English;
- ❖ German.

Thanks to its natural properties, slate roofing can withstand the harshest climatic conditions: heat, cold, various precipitation, strong wind, ultraviolet radiation. Therefore, it can be used in any conditions. Its service life can be limited only by the under-roof structure made of wood. Installing a slate roof is not as cheap as, for example, a soft roof, but its durability, reliability and beauty often become the deciding factor when choosing a roofing material. Slate has such a unique property that it is self-cleaning. Microscopic scale is erased from the surface of the tile,

which is then washed away by rain. As a result, the roof always looks new. Moreover, oil shale has not been mined for a hundred years. There are other natural stone roofs, but they are not widely used.

conclusion

We got acquainted with a very original, beautiful, durable roofing material, such as natural slate stone. We have a long tradition of using slate stone in Georgia. Residential buildings in Mta-Tusheti are built from a special (dry) pile of slate stone. This material is also used as roofing. It would be very optimal to use colored slate for the roof of your own house, the fifth type of which will further decorate our country.

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