



## Characteristics:

Here we are talking about minerals consisting of several oxides based on Si, Al, Fe, Ca, Mg, K and Ti also containing small percentages of S, P, CO<sub>2</sub> and Na<sub>2</sub>O.

## Diabas:

Diabases are old basaltic, volcanic rocks from the devon or predevon times. Their olivines and augites have changed into green silicates. This leads to the name "greenstone". Diabases have a very strong tenacity and strength, the chemical composition varies strongly.

## Slate:

Almost 400 million years ago, with the beginning of the devon, a large, permanently lowering marine sedimentation area extended from the French Atlantic coast to the Czech and Polish mountains. Because of the highly flexible surface morphology there occurred many settlements and magmatic rocks.

One of the oldest proofs for the use of sub-carbonic clay slate is the discovery of several plates, piled one after the other and side by side, close to Gera in the year 1936. Presumably, they served as fundamentals for hunting huts.

The beginning of exploiting slate dates back to the 12th century, similar to England and France. The clay slate has been used to cover houses, since. Only about 25 % of the mined slate serves for roofing; the rest is milled and finds its way into the chemical industry.

## Application:

Nowadays, slate and diabas are mainly applied in **anti-corrosion paint**. They are very **resistant against acids, alkalies and oxidizing liquids**; they also strengthen the effect of inhibition pigments, since the flakes arrange themselves parallel to the film. This leads to an underlay with a high **tensile strength** and **elasticity** and the **substrate adhesion** is improved.

**Another advantage is the low swelling making it applicable for the use in electric insulation varnishes.**

Aluminum paints are adulterated to give them a higher resistance against heat and chemicals. Even knifing putty and sealing matters are produced with these materials.

Slate dust with a granulation > 63 µm is employed as a filling and weight in the **roofing paper and bitumen industry**, as a protection against sticking.

## Bibliography:

- o Römpps Chemie-Lexikon
- o H. Kittel; Lehrbuch der Lacke und Beschichtungen
- o Geächter/Müller: Kunststoffadditive/3. Ausgabe

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