

**Process for the protection of porous building materials
against the ingress of salts**

With porous building materials, there is a the danger of destruction by the ingress of dissolved or partly dissolved salts, particularly of de-icing salts. Because of the use of these salts on streets and roads, it is unavoidable that the outer walls of buildings or the areas of other structures which are exposed to the weather become stained with dissolved or partly dissolved salts. This kind of staining occurs regularly, particularly with goods vehicles on roads treated with salts. If the stained structures are made from porous building materials, the salts, in dissolved or partly dissolved form, will penetrate into the pores of the materials. As soon as the solvent for the salts - in the case of rain, water - no longer exists as a liquid, the salts return to the crystalline state. In the crystallisation process, the salts need more space for the growing crystals, so that, in individual pores, the increasing pressure from the crystals can cause destruction.

This destructive effect of salts on porous building materials is known, and there are no known measures for protecting the materials against such ingress of salts. For protection against the ingress of water only, single-layer penetrating sealers in which wax is used are known, but they cannot prevent the ingress of salt.

A process for preventing the application of paint onto surfaces of natural and artificial stone is known from patent DE - 36 30 520. In this known process, a penetrating, paint-absorbent, removable layer is applied, specifically in the form of a wax-type coating. As soon as natural and artificial stone becomes stained by the application of paint, in particular in the form of graffiti, the application of paint only covers this coating, and can be removed by heat or by other means. The penetrating sealer thus prevents the ingress of paint particles into the stone. After the covering has been removed, a new paint-absorbent covering must be applied in order to protect the stone again in accordance with the invention.

It is the object of this invention, to provide a protection for porous building materials against the ingress of salts.

This objective is achieved by using the available penetrating sealer and the subsequent wax coating, on the surface of the pores of the porous building material, in which the applied covering is permeable to the diffusion of water vapour, in order not to impede the permeability of the material.

It is surprising that the combination which is in itself known of a penetrating sealer with a wax coating safely prevents penetration by ions of dissolved salts. Neither dissolved salts nor salts in the form of ions can penetrate the wax coating and the sealer underneath, so that damage to porous building materials by the formation of crystals, and the increasing pressure from the crystals, is prevented.

A more secure protection against ingress of salts is provided, if the proposed covering is applied at least to the visible surface, exposed to the weather, of the porous building materials

It is more advantageous, if a waterproof sealer is applied to the porous building materials.

The sealer can then be applied as a layer-type covering in the form of a pore-closing sealer and/or preferably in the form of a pore-sealer.

The wax coating should be applied in thin layers, preferably between 0.1 to 0.5 mm in thickness, so that the outer texture of the porous building material is retained while the desired protective effect against ingress of salts remains.

If the porous building materials exist as individual elements prior to fabrication, for example in the form of bricks, manufactured parts or similar, then the proposed covering can also be applied completely before assembly, over the entire surface. The individual components are thus protected against ingress by salts, so that the later application of the proposed covering to components already assembled in a building is unnecessary.



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CLAIMS

1. Process for the protection of porous building materials against the ingress of salts, in which a water vapour diffusion-permeable covering of a penetrating sealer and a layer of wax thereon, is applied to at least the visible surface of the building material exposed to the weather.
2. Process according to claim 1, in which a water-repellent sealer is applied.
3. Process according to claims 1 and/or 2, in which a layer-type sealer and/or a pore sealer is applied.
4. Process according to one or more of claims 1 to 3, in which either a wax coating or a wax coating covering the surface of the pores is applied.
5. Process according to claim 4, in which the applied wax coating is thin, in the range 0.1 to 0.5 mm.
6. Process according to one or more of claims 1 to 5, in which existing individual elements, made from the porous building material, are provided with a complete covering over the total surface, before fabrication.