

# BERO ARCHITECTURE PLLC

ARCHITECTURE SUSTAINABILITY PRESERVATION

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## SOME THOUGHTS ON MASONRY SEALERS

Masonry sealers are often advertised as the final solution to water infiltration problems. Typically, a product's positive benefits are accentuated and cautionary recommendations are hardly mentioned. In printed product information, but not mentioned in general advertising, manufacturers clearly state that on-site testing is required before application to evaluate product performance. Also in product literature, they claim no responsibility for product failure or performance. Manufacturers offer great results but expect the building owner to be responsible for product appropriateness.

If a sealing product does not perform as advertised, damage to a masonry wall can be extensive. Sealers often trap water in masonry, causing the exposed masonry face to spall as a result of freeze-thaw cycling. Though advertised as breathable, all sealers reduce moisture vapor transmission rates to some extent, and manufacturer's tests are based on the initial application; they do not test walls after the frequently repeated cycles of application recommended. The reduction of vapor transmission is effected by a large number of variables. Independent researchers, as well as manufacturers, recommend extensive, job-specific testing.

Water absorption is not normally a problem in a well maintained masonry wall. If masonry is not well maintained sealers cannot solve an infiltration problem. In extremely rare cases, water-repellents are recommended, **provided all the following can be assured:**

- the surface is not damp there is no danger of rising damp
- no soluble salts are present
- the material is in a sound condition
- the surface is not fissured or cracked
- the material to be treated is compatible with the treatment
- the most appropriate agent and concentration for the specific material is carefully prescribed
- quality control is assured in both production and application
- different parts of the building are analyzed regarding exposures and product concentration
- basic laboratory tests (water absorption, vapor permeability, hygric dilation) are performed
- site-testing is used to confirm laboratory test results
- regular maintenance and inspection of the building follow the treatment
- the treatment is periodically tested to establish performance levels over time
- the treatment is re-applied as necessary

Meeting all the above criteria is a difficult task. Researchers call for extensive testing because infinite variables effect the performance of sealers. In their product literature, most manufacturers also call for test patches before application to insure appropriate performance. They recognize the variables and are basically alerting, “Buyer beware.”

The final decision to use a sealer calls for a leap of faith. These products do not have a long history of use. Many construction materials are advertised as a miracle cure for a short period, but when time has revealed more of their characteristics, they are no longer attractive. A product may react in an unanticipated way when applied over a whole building, or it may break down over time with unforeseen detrimental effects. Because these are penetrating sealers, removal is probably impossible without great damage to the masonry.

It should be remembered that these products will loose effectiveness and re-application will be required.

How will you verify its initial effectiveness?

How long will the product remain effective?

How will you verify its continued effectiveness?

What will happen with repeated applications?

Can you afford to repeat applications at a three to six year interval?

These questions can be asked of a manufacturer’s technical staff, but they have a vested interest in the answers. Independent testing is the safe way to answer technical questions, but it is expensive. Research scholars do not recommend use of sealers without stringent testing and controls. We do not feel this level of monitoring can be assured in most situations.

In most cases repointing or replacing damaged masonry is the best remedy for a wall. If the roof above is sound and the wall has no open leaks, water infiltration will generally not be a problem. In exposed areas such as chimneys or monuments, a coating may be necessary. We are conservative in recommending any masonry coating, but we do recommend paint if a coating is required. Water based paints are breathable and do not penetrate, therefore they do not impair the vapor transmission rate of the masonry substrate.

After review of independent research findings, our recommendation remains: Do not use masonry sealers.

### Select Bibliography:

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