

Natural stone - Graffiti protection

Graffiti is paint in the wrong place.

Graffiti and natural stone

On some types of stone, graffiti can be completely removed; on others, it cannot. Natural stone is not a single category - simplified, there are three main groups of natural stone used in construction and civil engineering:

- Granite-like stone types (silicate stones).
- Carbonate stones (limestone, marble).
- Sandstones.

These stones react differently to graffiti, and therefore to removal methods. The stone's surface treatment can also play a role.

Removal of graffiti from unprotected surfaces

A comprehensive study was conducted on Swedish stone types and graffiti, "*Graffiti and graffiti removal*", Swedish Stone Industry Association, 2001-06-18. The following conclusions were drawn:

- On granite-like stone types (note that only Swedish stones were tested) and quartzite slate, graffiti can be removed using chemical graffiti removers. On polished granite, graffiti are easiest to remove. For coarser surface finishes, two process steps are required.
- This means that granite (Swedish) can be left unprotected until graffiti appears. The graffiti can be removed, but since this is a chemical process, the stone should be graffiti-protected afterwards if there is a risk of further graffiti.
- In contrast, graffiti cannot be completely removed from marble, limestone, and sandstone. These types of stone should be graffiti-protected as soon as any graffiti activity is suspected.

More info; see table on next page.

Graffiti protection

Requirements for graffiti protection:

- Must not damage the stone.
- Must not affect the stone aesthetically.
- Must provide protection against graffiti for a sufficient long time.

Additionally, one should always ask:

- Is graffiti protection actually needed?

There are two types of graffiti protection; **sacrificial** protection and **permanent** protection.

Sacrificial protection

This usually consists of a wax dispersion and is washed away along with the graffiti during cleaning with hot water. Afterwards, the surface is re-protected with the same type of graffiti protection. Sacrificial protection can always be removed if necessary.

The protection is diffusion-open, allowing the stone to breathe and release moisture. There are no reports of this type ever damaging the stone. Sacrificial protection is a mild, environmentally friendly substance, both in application and removal.

The wax does not affect the stone's aesthetic appearance, except in one case; polished granite - but this is a surface that could potentially survive without protection. (See table on next page.)

Permanent protection

Permanent protection is exactly that - it cannot be removed. If colour changes, other aesthetic alterations, or moisture trapping occur that damages the stone - the protection cannot be removed.

There are many examples of permanent protection causing damage to stone. While it is possible that some permanent products may work, extreme caution is advised. Always request references from identical conditions to your specific case!

- Permanent protection can damage the stone, e.g. moisture entering the stone may not escape.
- Permanent protection can affect the aesthetic appearance.
- Permanent protection cannot be removed if desired.

Conclusions

Marble, limestone, and sandstone should be protected as soon as there is any risk of graffiti. Sacrificial graffiti protection does not affect the aesthetic appearance of these stone types.

For granite (Swedish), there is no need for concern, as graffiti can always be removed. If the granite surface is coarser, the surface can be treated with sacrificial protection after the graffiti has been removed, if there is a risk of further graffiti. The surface is not affected aesthetically.

However, if the granite surface is polished, it is best to wait before applying graffiti protection for two reasons: 1. Graffiti is relatively easy to remove from polished granite, and 2. Graffiti protection can affect the stone aesthetically.

Graffiti removal and protection can easily fail if not carried out professionally, or if the appropriate products and methods are not used.

Before performing any graffiti protection or removal, consult a reputable company with solid expertise in chemistry, the effects of graffiti on natural stone, and the appropriate products and methods for protection and cleaning.

Sacrificial protection is recommended!

The text in this leaflet is a brief summary of the results from the subproject "*Graffiti and graffiti removal*" within the project "*Natural Stone – Building Material with Ecological Added Value*", presented in the report "*Natural Stone, Graffiti & Vandalism*". The text is written by Kurt Johansson.

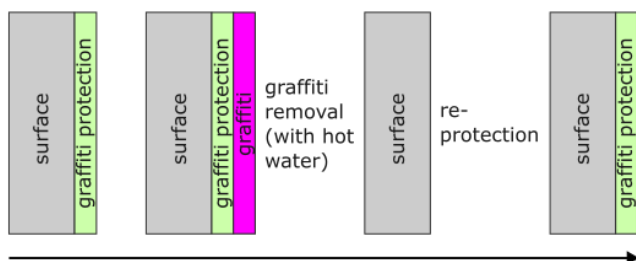
Summary of test results

The table shows how different types of stone and surface finishes react to graffiti.

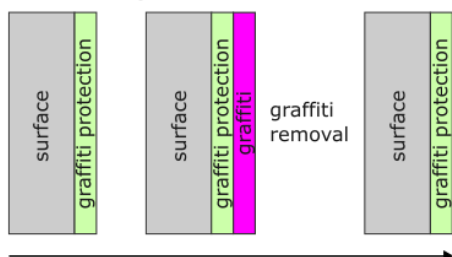
Stone type	Surface finish	Surface not protected		Surface protected	
		Solvent-based remover	Post-treated with shadow remover	Aesthetic impact	Need for graffiti protection
Granite*	Rough split	Graffiti disappears, some shadows remain	No shadows remain	Not noticeable	Wait to protect until graffiti appears
Granite*	Bush hammered	Graffiti disappears, some shadows remain	No shadows remain	Not noticeable	Wait to protect until graffiti appears
Granite*	Flamed	Graffiti disappears, some shadows remain	No shadows remain	Not noticeable	Wait to protect until graffiti appears
Granite*	Honed	No graffiti, few/faint shadows remain	No shadows remain	Noticeable	Should only be protected in case of frequent graffiti
Granite*	Polished	No graffiti or shadows remain	-	Noticeable	Should only be protected in case of frequent graffiti
Quartzite	Split face	No graffiti or shadows remain	-	Noticeable	Should only be protected in case of frequent graffiti
Marble	Polished	Graffiti remain	No effect	Not noticeable	Protect if risk of graffiti
Limestone	Split face	Graffiti remain	No effect	Not noticeable	Protect if risk of graffiti
Limestone	Honed/planed	Graffiti remain	No effect	Not noticeable	Protect if risk of graffiti
Limestone	Polished	Graffiti remain	No effect	Not noticeable	Protect if risk of graffiti

* Granite in the table above refers to Swedish Granite, Gneiss and Diabase (these are the only stone types that has been tested).

Sacrificial protection



Permanent protection



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Swedish Stone Industries Federation "Sveriges Stenindustriförbund"

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