

HEBAU

PRODUCTS FOR
GOOD-LOOKING
CONCRETE

REACTIVE CONCRETE SURFACE DEACTIVATOR FOR EXPOSED AGGREGATE CONCRETE

CSE[®] DEACTIVATOR



www.hebau.de



*Would you have recognised it?
Yes, it's exposed aggregate concrete.*

Exposed aggregate concrete – how to reveal real beauty

Although exposed aggregate concrete is already well-known to the producers of concrete surfaces and architects, today exposed aggregate concrete is not only revealing standard river gravel, but also contains and shows quarried natural stone aggregates in multiple colours and sizes, which is why this concrete surface is finding new friends. The advantages are indisputable, also concerning sustainability, as the surface is extremely hard-wearing, anti-slip, visually harmonious and requires no regular follow-up treatment or maintenance measures, as for example by surfaces which have been painted or plastered.

All that you need to create a modern look is to choose a nice aggregate, perhaps white cement instead of grey cement and to do the “exposing job”. Of course today you no longer use so-called retarder pastes, but rather apply modern products like **HEBAU's CSE® Deactivators**, outperforming the retarder pastes technically and functionally to ensure the desired concrete surface result, even under difficult production conditions.

These “deactivators” are liquid, paint-like materials and contain active ingredients, whose primary task is to prevent the hydration of the top layer of the cement paste in a previously defined “exposure depth”, whilst the concrete beyond this “exposure depth” hydrates normally. In this process the **CSE® Deactivator** only reacts with the cement paste of the fresh/green concrete in this particular depth, which leads to a neutralization. That's the whole trick. The deactivated cement paste on the surface is then removed by “washing” with a high-pressure cleaner. The aggregates in the concrete are now exposed and therefore it is referred to as “exposed aggregate concrete” (from an exposure depth of 2 mm) resp. “micro exposed aggregate concrete” (up to an exposure depth of 2 mm).

By the way: No need to be concerned about the chemicals in the products. The active ingredients used are ecologically harmless, even in the “wash-off” water, which is created during the washing of the surface.

Exposed aggregate concrete surfaces have following advantages:

- Appealing visual effect, because a natural stone like look and haptic can be achieved, e.g. by precast concrete wall elements and by cast stone.
- Anti-slip effect because of increased roughness of surface, e.g. good for steps and pavings.
- Long-term maintenance-free surfaces properties, as the surface mainly consists of the durable aggregates and relatively little cement (ratio approx. 80:20)

The **CSE® Deactivators** which are required to produce such concrete surfaces can be applied in 2 different methods. When the deactivator is applied to the mould surface before the concrete is casted (similar to the application of a mould release agent), then this is referred to a so-called negative or face-down application, for example widely used in precast concrete applications.

It is also possible to spray the **CSE® Deactivator** directly onto the fresh concrete, for example after trowelling, as done when using cast-in-place concrete for decorative concrete paving. This is then referred to as the so-called positive or top-surface application.

We supply products with corresponding special functions for both methods of application, e.g. with high mould bonding characteristics, important during negative application to withstand abrasion resistance during the pouring and vibrating of the concrete, or with integrated curing and rain protection functions, good during positive application if cast-in-place concrete is poured outside.

The selection mainly depends on the concrete mix design and the parameters of concrete production and curing. Our technical consultants provide examples of suitable concrete mix designs, give advices about the dos and don'ts, offer support during testing with samples, can give seminars to your staff ...

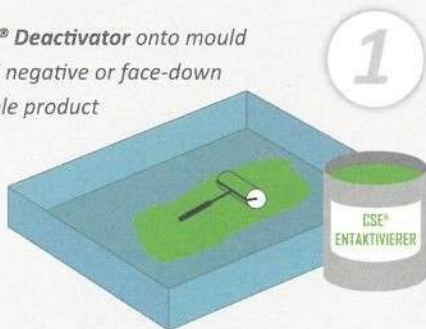
CSE®-exposure depth type	CSE® 005	CSE® 01	CSE® 02	CSE® 10	CSE® 25	CSE® 50	CSE® 70	CSE® 130	CSE® 200	CSE® 300	CSE® 400
Suitable for concrete with following aggregate sizes: (in mm)	0 - 4/8	0 - 4/8	2 - 8	2 - 8	4 - 8	6 - 8/12	8 - 16	8 - 16/22	12 - 16/32	16 - 32	16-32/54
Approximate exposure depth: (in mm)	0.3	0.5	1.0	1.5	2.0	2.5	3.0	4.0	5.0	6.0	7.0



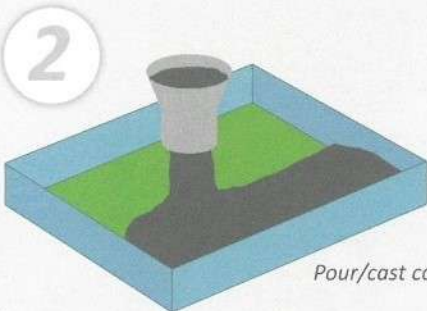
Examples of exposed aggregate concrete surfaces:
Surface characteristics will also depend on choice of cement, aggregates, pigments ...

Simplified example of precast concrete element with exposed aggregate surface on both sides:

Application of **CSE® Deactivator** onto mould surface = so-called negative or face-down application. Suitable product versions are **CSE® version "nova"** or **CSE® version "pro"**.

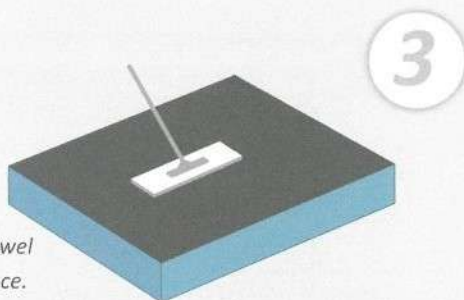


1



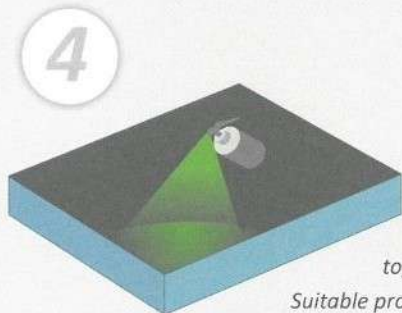
Pour/cast concrete into mould.
Vibration follows.

2



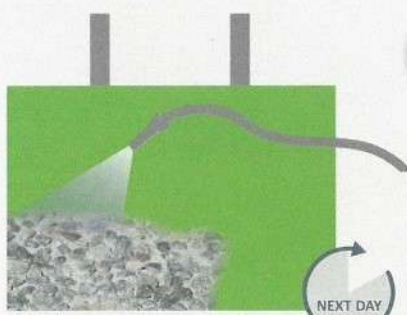
Smoothen/trowel concrete surface.

3



Apply **CSE® Deactivator** onto concrete surface by sprayer = so-called positive or top-surface application. Suitable product versions are **CSE® version "solotop"** or **CSE® Version "multitop"**

4



Wash off deactivated cement paste.
Ready.

5

In order to achieve the desired exposure depth, **CSE® Deactivator** is available in 4 different versions and each version offers 11 different exposure-depth types.

For both, negative and positive applications:

- **CSE® version "pro"**, solvent-based
- **CSE® version "nova"**, water-based

Only for positive applications:

- **CSE® version "solotop"**, water-based
- **CSE® version "multitop"**, water-based with incorporated curing membrane & rain-protection-function

We also recommend:

CSE® Transform	special mould release agent for easy mould-cleaning. Only available in combination with CSE® Deactivator version "pro" .
CSE® Cleaner	to clean tools, moulds and sprayers ... Only available in combination with CSE® Deactivator version "pro" .
RSE® 300	Liquid joint roughening agent for concrete construction joints. For good bonding/adhesion on all types of concrete construction joints.
Sprayer	Special low-pressure sprayer with corrosion-resistant components. For MICROGEL® and CSE® spray applications.

retarder papers

In addition to the liquid deactivators we also offer so-called retarder papers, a special paper coated with deactivating agents. The application of retarder papers can be a good alternative to the liquid deactivators, especially for the production of smaller precast concrete pieces.

Please contact us if you need support for best product selection.



member of:



Products for the production of exposed aggregate concrete surfaces

	CSE® Deactivator version "pro"	CSE® Deactivator version "nova"	CSE® Deactivator version "solotop"	CSE® Deactivator version "multitop"	Retarder paper RSE 01	Retarder paper WB (various types)
suitable for:						
micro exposure depth	✓	✓	✓	✓	✓	-
fine, medium and coarse exposure depths	✓	✓	✓	✓	✓	✓
negative (face-down) application	✓	✓	-	-	✓	✓
positive (top surface) application	✓	✓	✓	✓	-	-
negative and positive application	✓	✓	-	-	-	-
Precast concrete walls						
facade elements	✓	✓	○	○	○	○
sandwich panels	✓	✓	-	-	○	○
hollow-core wall elements	○	○	✓	✓	-	-
Other precast elements						
stairs/retaining walls/wall segments	✓	✓	-	-	○	○
glassfibre-reinforced concrete GRC	✓	✓	-	-	✓	○
sound barriers	✓	✓	○	○	○	○
prefab flooring panels	✓	✓	○	○	○	○
Small prefab						
steps/pedestals/bricks/covers	✓	✓	○	○	○	○
tiles/slabs	○	○	-	-	✓	✓
concrete bordering/curb stones	○	○	✓	○	-	-
planters, flower bowls/pots	✓	✓	○	○	-	-
urban furniture	✓	✓	○	○	-	-
wetcast concrete	○	✓	-	-	-	-
bollards/palisades	○	○	✓	○	-	-
paving stones	-	-	✓	○	-	-
Cast-in-place concrete						
tilt-up	✓	○	-	-	-	-
decorative paving	○	✓	✓	✓	-	-
Special applications						
roughening of construction joints	✓	✓	○	○	-	-
non-slip concrete surfaces	✓	✓	○	○	○	○
reduction of sandblasting material/effort	✓	✓	○	○	-	-
reduction of polishing effort	✓	✓	○	○	-	-
also recommended:						
special admixture for decorative concrete	Arcon-Fluid ⁺ Plus			For self-compacting/self-levelling concrete. Reduces segregations.		
protective coating - option I	COLORFRESH® intensiv			Applicable immediately after wash-out procedure – enhances surface colour.		
protective coating - option II	COLORTEC® Max			Applicable immediately after wash-out procedure – remains invisible.		
Symbol explanation:	✓ applicable	○ partially applicable	- not applicable			

Please study our technical data sheets prior to application and always conduct pilot tests under real application and production parameters and a suitable observation time.

