

CSE[®] reactive Concrete Surface Deactivator



Product description:

CSE[®] Deactivator is a range of so-called surface deactivators for the production of exposed and micro-exposed concrete surfaces, e.g. precast architectural concrete wall panels, prefabricated concrete for landscaping/city furniture, GRC, cast stone and decorative cast-in-place concrete paving.

The chemical formulation of the **CSE[®] Deactivator** product lines is not comparable with so-called surface retarders! The main difference is, that unlike the mostly sugar-based "retarders", **CSE[®] Deactivators** can also be applied for micro-exposure, in difficult weather conditions, for weekend-productions, for application on vertical moulds and under conditions where other products are likely to fail. Additionally the consumption rate of the "retarders" is usually several times higher per sqm than the **CSE[®] Deactivators**, which makes the **CSE[®]** products very competitive and quite cost-efficient per sqm.

Available versions:

There are basically two different methods of application, so-called negative application (application by painting **CSE[®]** on the mould) and the positive application (application by spraying **CSE[®]** on to fresh concrete surface).

To cover all requirements of users **CSE[®] Deactivator** is available in 4 different versions:

CSE[®] Deactivator, type "pro"

- for negative and positive application, solvent-based
- ideal for high-end architectural concrete elements and artificial stone

CSE[®] Deactivator, type "nova"

- for negative and positive application, water-based
- ideal for high-end architectural concrete elements and artificial stone

CSE[®] Deactivator, type "solotop"

- only for positive application, solvent-free
- ideal for pavers, blocks, brick, columns ...

CSE[®] Deactivator, type "multitop"

- only for positive application, with incorporated curing membrane and rain-protection-function, solvent-free
- ideal for cast-in-place concrete applications

Fields of application:

Our **CSE[®] Deactivators** are reactive surface deactivators for the production of exposed aggregate concrete surface in 11 different exposure types, for all exposure depths, from micro-exposure to coarse aggregate exposure, especially for:

- precast concrete elements
- cast stone/artificial stone
- pavers, bricks, blocks, columns ...
- cast-in-place concrete for decorative paving and walls
- construction joints

Product characteristics:

- solvent- or water-based formula available
- use of high-performance active ingredients
- high abrasion-resistance
- fast drying
- colour coded
- very reliable
- sprayable and brushable
- very efficient coverage rate

Advantages:

- suitable for negative and positive application
- low consumption rate and therefore low cost per sqm
- suitable for horizontal, vertical and structured moulds
- available in 11 different exposure depth types
- good coverage and easy workability
- suitable for all kinds of moulds/formliners
- even suitable for weekend-productions
- easy and fast mould cleaning
- allows for rapid concrete surface exposure

CSE[®] Deactivators are available in 11 different exposure types:

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

The **CSE[®] Deactivator** type 005 is not available in the version "pro". Please note, that the information to the exposure depths is only a guideline, because the final exposure-depth is not only controlled by the chosen type of **CSE[®] Deactivator**, but also effected by many other factors, for example by the amount of cement and sand, by the type of cement (grey/white, fast setting/slow setting), from the water-cement-ratio, by the demoulding period (e.g. by weekend production), etc.

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Instructions for use:

Pilot tests are always necessary. We recommend consulting a HEBAU-technician before starting production.

The **CSE[®] Deactivator** liquids must be agitated thoroughly before use.

For negative (face-down) application the **CSE[®] Deactivator pro** or **nova** should be applied to the mould uniformly (criss-crossing) with a short-nap painting-roller (do not use an additional release agent!). The drying time depends on the outdoor temperature resp. consumption of the CSE and lies between 10 and 30 minutes. After drying, during which the **CSE[®] Deactivator** forms a solid, abrasion-resistant coating, the casting of the concrete can begin and should be carried out with care in order to rule out segregations of the face-concrete (face-mix).

For positive (top-surface) application the **CSE[®] Deactivator pro, nova, solotop** or **multitop** should be sprayed onto the fresh concrete surface, taking care to cover the surface thoroughly and evenly. We recommend application with an airless spray-gun, nozzle size 2.5 mm. The concrete surface must be smooth, free of excess surface water and especially free of any segregations. The drying time depends on the outside temperatures and the consumption of the material and may vary between 10 and 60 minutes. For cast-in-place applications we especially recommend our **CSE[®] Deactivator version multitop** because it additionally has an incorporated curing membrane and rain-protection-function.

The choice of the right type of the **CSE[®] Deactivator** for each individual case should be made through trials, i.e. the test samples should be produced according to the exact production reality regarding the concrete mix design, production course and time, thickness of the concrete panel and the resulting setting temperature. The concrete mix design and consistency and the casting/pouring technique must rule out the possibility of segregations and of the concrete setting too quickly. The initial setting of the concrete should not start earlier than 60 minutes after the concrete has been placed into the mould. If heating of the moulds is necessary, it should take place at the earliest one hour after vibration. All positive data determined in the trials, including the optimal technique, time and frequency of vibration, should be transferred to the production process as exactly as possible. The vibration should begin no later than 45 minutes after the concrete has been placed into the mould.

Deliberate or accidental changes to the optimal defined production process can be compensated for by using a different type of **CSE[®] Deactivator**, or by changing the mix design or course of production. If required you can contact the HEBAU technical support team.

Wash-out

The wash-out of the exposed aggregate surface normally takes place within 24 hours, resp. when the concrete has reached demoulding stability. However by weekend production it can also be carried out after 48 or 72 hours, but this must be tested in pilot trials. It is very important to keep the same washing-rhythm when producing a coherent series of elements. The washing-rhythm may have to be adjusted if the outside temperatures change considerably. The panels should remain in the moulds until washing and should then be washed immediately after stripping/demoulding. If this is not possible, it is recommended to keep the surface moist. The most efficient way of washing the panels is with a high-pressure water-jet. If the **CSE[®] Deactivator** is applied appropriately and skillfully (thin coating), no traces of the active ingredients of the **CSE[®] Deactivator** should be found in the wash-off water, as the active ingredients are used up during the reaction with the concrete.

Cleaning of the moulds:

If the **CSE[®] Deactivator** is used economically, sweeping the moulds with a scraper will clean them easily in most cases. In order to speed-up the cleaning of the moulds, it is recommended to wait for 15 – 30 minutes after the demoulding/stripping to allow the moist residue on the mould to dry. In special cases **CSE[®] Cleaner** can be used.

Colour coding:

We have added a colour pigment to the **CSE[®] Deactivator** to enable a clearer distinction between the different exposure depths types and to simplify re-ordering. The pigment has **no** functional characteristic or effect. The colour is also used to visualize the amount applied and thus to avoid over- and under-application.

Exposure type	CSE [®] 005	CSE [®] 01	CSE [®] 02	CSE [®] 10	CSE [®] 25	CSE [®] 50	CSE [®] 70	CSE [®] 130	CSE [®] 200	CSE [®] 300
CSE [®] -colour code:	blue	blue	brown	green	Yellow	pink	grey	white	orange	violet

Accessories and support products:

- CSE[®] Transform = mould release agent to aid mould cleaning when applying CSE[®] Deactivator "pro"
- CSE[®] Cleaner = to clean tools/equipment (only in combination with CSE[®] Deactivator type "pro")
- Rollers for the application (only in combination with CSE[®] Deactivator "pro" and "nova")
- Sprayers for **CSE[®] Deactivator "solotop" and "multitop"**

Please note, that it is always necessary to carry out pilot tests which realistically correspond to the planned production process and application procedure.

Consumption:	Packaging:	Storage:
By negative application: Depending on the absorbency of the mould surface and the application method resp. quantity, 1 kg for approx. 7-15 sqm. By positive application: Depending on the configuration of the spraying device and manual application rate, 1 kg for approx. 7-15 sqm.	CSE pro & CSE nova: 20 kg pail CSE solotop: 20 kg pail, 25 kg jerry can + 120 kg drum CSE multitop: 18 kg pail, 25 kg jerry can + 120 kg drum	Store inside a suitable warehouse (not outdoors). CSE pro: Store in closed container and in a cool and ventilated room. Can be stored for approx. 12 months in original, closed container. CSE nova, solotop & multitop: Protect against frost. Can be stored in original, closed container for approx. 12 months (CSE "multitop" 6 months).

Products for the production of exposed aggregate concrete surfaces



CSE® Deactivator	CSE® Deactivator	CSE® Deactivator	CSE® Deactivator	Retarder paper	Retarder paper
version "pro"	version "nova"	version "solotop"	version "multitop"	RSE 01	WB (different types)

Suitable for:

micro exposure depth	✓	✓	✓	✓	-
fine, medium and deep exposure depths	✓	✓	✓	✓	✓
negative (face-down) application	✓	✓	-	✓	✓
positive (top surface) application	✓	✓	✓	-	-
negative and positive application	✓	✓	-	-	-

Precast concrete walls

façade elements	✓	✓	O	O	O	O
sandwich panels	✓	✓	-	-	O	O
hollow-core wall elements	O	O	✓	✓	-	-

Other precast elements

stairs/retaining walls/wall segments	✓	✓	-	-	O	O
glassfibre-reinforced concrete GRC	✓	✓	-	-	✓	O
sound barriers	✓	✓	O	O	O	O
prefab flooring panels	✓	✓	O	O	O	O

Small prefab

steps/pedestals/bricks/covers	✓	✓	O	O	O	O
tiles/slabs (made in a press)	-	-	-	-	✓	✓
concrete bordering/curbs stones	O	O	✓	O	-	-
planters, flower bowls/pots	✓	✓	O	O	-	-
urban furniture	✓	✓	O	O	-	-
wetcast concrete	O	✓	-	-	-	-
bollards/palisades	O	O	✓	O	-	-
paving stones	-	-	✓	O	-	-

Cast-in-place concrete

tilt-up	✓	O	-	-	-	-
decorative paving	O	✓	✓	✓	-	-

Special applications

Roughening of construction joints	✓	✓	O	O	-	-
non-slip concrete surfaces	✓	✓	O	O	O	O
reduction of sandblasting material/effort	✓	✓	O	O	-	-
reduction of polishing effort	✓	✓	O	O	-	-

Also recommended:

Special admixtures 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.

Please note, that it is always necessary to carry out pilot tests which realistically correspond to the planned production process and application procedure.

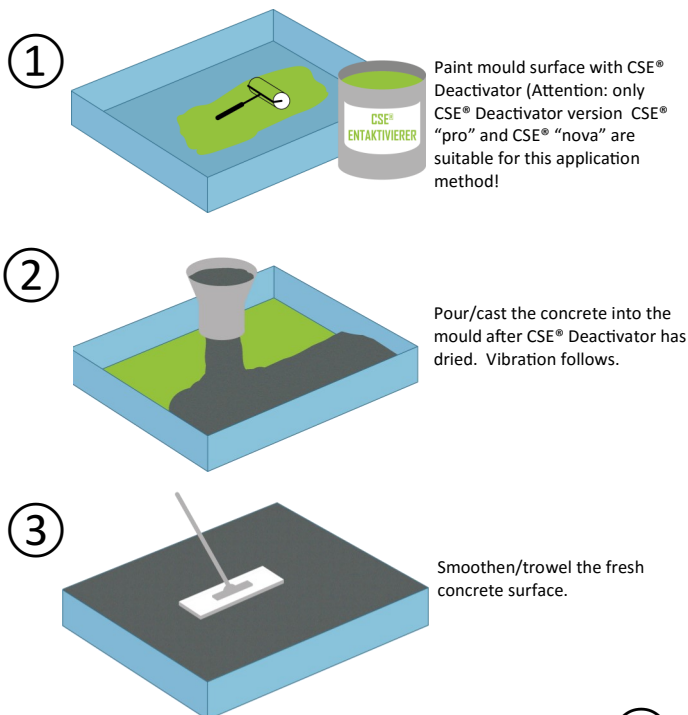
Symbol explanation:
 ✓ applicable O partially applicable - not applicable

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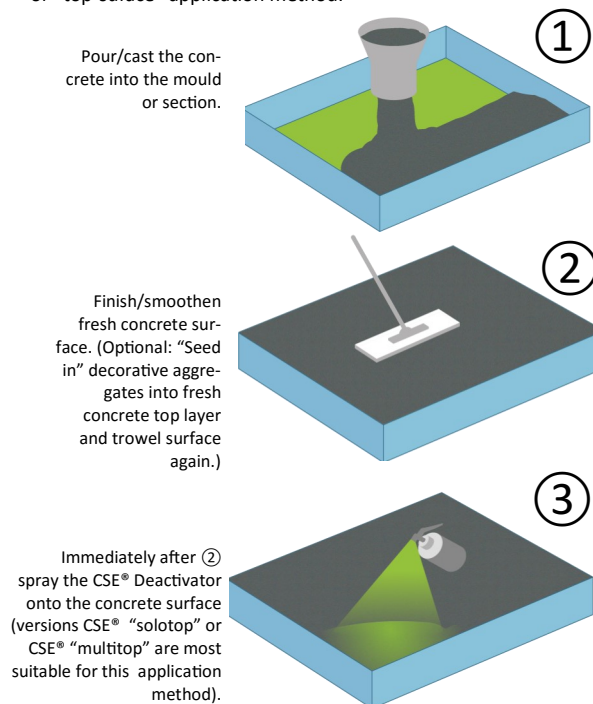


Application - Simplified example of the production of exposed aggregate concrete (only non-binding guideline of simplified example of application procedures):

Application of CSE[®] Deactivator onto mould surface (so-called "negative" or "face-down" application method):



Application of CSE[®] Deactivator for the production of exposed aggregate surfaces in the so-called "positive" or "top-surface" application method:



⑤ Examples of concrete surfaces



Micro exposure.
Exposure depth
approx. 0.5 mm



Micro exposure.
Exposure depth
approx. 1.5 mm



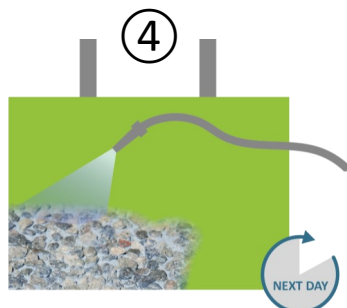
Medium exposure.
Exposure depth
approx. 2.5 mm



Deep exposure.
Exposure depth
approx. 4 mm



Deep exposure.
Exposure depth
approx. 6 mm



Legal notice:

The technical information contained herein, in particular relating to the function, use and handling of our products, is given to the best of our knowledge and is based on our present knowledge and experience of the products when appropriately stored and handled, and applied under normal conditions in accordance with the standard fields of application, as described in page 1. Due to the large variety of possible use and application scenarios, this data sheet raises no claim to completeness, but is solely intended to provide a non-binding decision support, which needs to be reconfirmed by the end-user through pilot tests. Pilot tests are always necessary and should be carried out following the advice given in the current Product Data Sheet and under realistic practical conditions, i.e. conditions must realistically correspond to the planned production process and application procedure. Case-related acquired knowledge is not directly transferable to similar applications. Product specifications are subject to alterations without notice. Only the most recent issue of the Product Data Sheet is valid, which will be supplied on request or can be found on our website under www.hebau.de. Illustrations in our data sheets, brochures etc. are merely exemplary and not binding. Photos may have been edited.

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Usual precautions and actions when handling chemicals should be observed (e.g. no eating, drinking, or smoking at the place of work). Additional instructions, which can be found on the corresponding product labelling or in the Safety Data Sheet, must be observed. If you do not have a copy of the current Safety Data Sheet, we will be pleased to send you one. Our General Terms and Conditions apply. This information is valid for professional users. Our products are not recommended for private end-users.

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