CONSTRUCTION MATERIALS ALLIANCE

CMA100™ ULTRA CLEARSEAL - FREQUENTLY ASKED QUESTIONS (FAQ'S)

How deep does CMA100™ penetrate?

CMA100™ penetrates between 10-20mm deep, depending on the Mpa of the concrete.

What benefits are achieved by applying CMA100™ to concrete?

- CMA100™ offers lifelong waterproofing.
- It seals non-volatile cracks in the concrete up to 2.2mm and when used with suitable concrete mixes it will remain reactive in the concrete to seal future hairline cracks in the presence of water.
- It protects concrete by prevention of chloride ingress and harmful chemicals which attack the reinforcement and cause degradation of the structure.
- CMA100™ hardens concrete from 6 to 8 on Mohs' Scale(140MPA) – the same level as granite.
- It means that there is no need to use a protective screed over the structural concrete.

Is CMA100™ environmentally friendly?

CMA100™ is arguably the world's most environmentally friendly concrete waterproofing. CMA has been granted admission to the prestigious US Green Building Council (USGBC), gaining points for ratings systems such as LEED, BREEAM, ESTIDAMA PEARLS and GREEN MARK.

Is CMA100™ Contractor friendly?

Contractors are always delighted to use CMA100™ for the following reasons:

- **Speed of application** – CMA100™ can be applied *super-fast* fast compared to traditional membranes. One person can apply about 6000m^2 per day compared to under 100m^2 for a membrane.
- **Once applied** CMA100™ cannot be damaged by other trades on site.
- **No screed required**. CMA100™ is directly applied onto the structural slab. No screed is required.
- **CMA100** is suitable for either horizontal or vertical surfaces, saving time and money.
- It is **trafficable** within 4-6 hours of application.

What effects do temperatures have on CMA100™?

CMA100™ must be applied above 5°C to ensure there is no moisture frozen inside the concrete in order to react with free calcium and water. In temperatures above 40°C, CMA100™ will encounter evaporation prior to soaking into the concrete, resulting in product wastage. Seek information from CWS for application above 40°C.

Once CMA100™ has been properly applied, temperature becomes irrelevant making the structure suitable for sub-zero or high-heat conditions.

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Can you use CMA100™ on screeds (topping slabs)?

CMA100™ will waterproof all cementitious concretes, including screeds (topping slabs). Whilst CMA100™ will waterproof the actual topping, if the topping breaks up CWS100™ may not be able to overcome the basic weakness of the screed and permanently waterproof it.

What happens if the concrete is not watered?

The CMA100™ system will be no more useful than a typical sodium silicate. Due to lack of water, the matrix and/or cracks present will not be sealed as the product requires water for sufficient chemical reaction.

How do I know the concrete is dry enough to apply CMA100™?

When the surface is visually dry, i.e. no visual wet or damp spots. However, the drier the better. We want the surface to be dry so CMA100™ is absorbed by capillary action. If unsure, use a moisture tester.

Is CMA100™ similar to crystal growth products?

No, crystal growth produces rigid crystals. CMA100™ forms a gel inside the concrete and cracks, remaining dormant to seal future cracks in the presence of water. Whereas crystals are rigid, the gel produced by CMA100 has flexibility.

Can CMA100™ be applied to concrete with unstable working cracks due to structural volatility/failure?

It depends on the exact nature of the crack. Whilst CMA100™ will seal some volatile or working cracks we cannot guarantee that this will always be the case. In such cases the use of an ancillary product is recommended.

Can CMA100™ be applied where other sealers have been used?

Normally where other sealers have been used, they will block penetration of CWS100™ into the slab. Therefore, it is necessary to remove the existing sealer in order to achieve penetration.

Can CMA100™ waterproof cold or porous joints?

CMA100™ should be used in conjunction with an appropriate hydrophilic waterstop or other approved technology. Because these areas are prone to honeycombing or voids in the concrete, they may be too great for CMA100™ alone to fill completely.

What happens if a crack continues to leak after CMA100™ application?

If a crack continues to leak after CMA100™ application, it is practically easy to fix. Generally, the best process is to tape the underside of large cracks. Apply further product, specifically on the crack. Flood the crack with lots of water and generally it will create a watertight seal. Should this not occur, refer to your local distributor for further advice.

Is CMA100™ suitable for waterproofing pre-cast panels?

Yes, but quite often the release agents used by pre-cast manufacturers can block penetration of the product into the concrete. Therefore, any form agents must be removed prior to application. If in doubt perform a trial application.

How do you know you are applying sufficient product during application?

In general, usage will be around 1 litre to 5m^2 however this will vary according to the Mpa and finish of the concrete. Basically, the concrete will refuse to accept any further product once it has received the full amount that will soak into it. This may vary from 1 litre to 4m² through to 1 litre to 6m² according to the Mpa and finish of the concrete.

What is the shelf life of CMA100™?

There is no known shelf life to CMA100™ providing the lid of the container is sealed and it is kept out of direct sunlight. Be aware that solids in the product can settle to the base of the drums over time so it is important that the product is well mixed prior to use.

Is CMA100™ effective against negative water pressure?

Crystal growth products are preferred in these cases, as crystals will migrate to the positive side.

What are the precautions when CWS100™ is sprayed in enclosed areas such as water tanks?

You may have to use an air blower to speed the drying process. A breathing apparatus is essential with certain enclosed applications.

How soon can CMA100™ be applied to concrete?

Normally we would suggest waiting 28 days prior to application of CMA100™. In certain circumstances it may be possible to apply it earlier however, should this be the case, please contact CMA for details.

Does CMA100™ affect the bonding ability of cementitious materials?

Yes, it increases bonding by 27%.

Will CMA100™ promote fungal growth on concrete?

CWS100™ will deter fungal growth. Where there is growth, for example in damp areas, removal is extremely easy as the spores cannot penetrate the concrete matrix.

CMA100™ froze in the drums. What do I do?

It is essential that the product is slowly warmed to around 5-6°C. Stir thoroughly and apply as specified. It will not have any effect on product performance.

Does CMA100™ entrap moisture in concrete?

No, CMA100™ comprises a breathing system which allows for moisture to escape whilst preventing the ingress of water and pollutants.

Are there similar products to CMA100™ amongst other silicate-based materials?

There are many sodium silicates on the market around the world. Some of these claim to have crack sealing ability but normally this is only the faintest of hairline cracks. If any other product claims to be able to seal cracks, ask to see a scientific test performed by a 3rd party to confirm such crack sealing ability.

What if the calcium content in the concrete is depleted?

Calcium can be re-instated by mixing CMA Accelerator with water and applying it to concrete. Consult CMA for details.

Does CMA100™ promote Alkali Aggregate reaction (AAR) or Alkali Silica reaction (ASR)?

CMA100™ largely prevents AAR/ASR by preventing water infiltration which is critical for its reaction.

What equipment is required to apply CMA100™?

A low-pressure sprayer such as a backpack sprayer for small projects or a motorised pump for larger projects.

Are membranes the main competitor to CMA100™?

Yes. There are many different types and their usage varies. They typically last 10-15 years whereas CMA100™ delivers lifetime waterproofing. Occasionally CMA100™ will also compete against crystalline products. However, crystalline products should not be used on areas exposed to thermal stress because the crystals break when they expand and contract. By comparison, CMA100™ can withstand thermal stress and is perfectly suitable for such areas.

What temperature limits the use of CMA100™?

The performance of concrete will lose strength at 300°C even if it has been applied with CMA100™.

How vital is watering after application?

The first watering must be done within six hours of application. Note it is extremely important that it is done within the six-hour period. The first watering is crucial although the second and third watering can be done any time. It will take about one daily watering session over a three-day period to achieve optimum results. The more water the better.

Is CMA100™ suitable for any concrete?

It can be used on all *cementitious* concretes. (OPC, PPC Ash-free blends, Type C ash blends, and Slag blends). In general, mixes containing silica fume should be limited to 8% cement replacement. Prior to using CMA100™ on mixes with fly ash, silica fume or volcanic ash please consult CMA for details.

How should concrete be cured prior to application?

Water curing is preferred. If curing agents are used, it will require water/grit blast removal in order for CMA100™ to penetrate the concrete.

Is CMA100™ chemical resistant?

CMA100™ is resistant to most chemicals however the degree of protection will depend on the specific chemical involved. If in doubt refer to CMA for further details.

How does CMA100™ prevent contaminants from reaching steel reinforcements?

CMA100™ creates a gel barrier in the concrete up to 20mm deep, protecting both the concrete and the reinforcement from deterioration.

Does CMA100™ cause steel corrosion?

No, on the contrary, the high pH of CMA100™ assists the passive layer in the concrete, preventing rust. CMA100™ in itself can reinstate alkalinity into concretes.

What paints can be placed over CMA100™ treated concrete?

CMA100™ is a water activated product therefore water-based paints or water-based acrylic membranes should be avoided. Alkyd line-marking paint is not recommended. Cementitious or spirit based paints are suitable. In the case of car parks, perhaps the best approach is to do the line marking prior to CMA100 application.

Will CMA100™ overspray damage adjacent materials?

CMA100™ is not suitable for aluminium, glass or glass glazed tiles. Be sure overspray does not make contact with the preceding materials.

Is CMA100™ compatible with other waterproofing products?

All concrete products will adhere to CMA100™ treated concrete. CMA100™ increases the bond between concrete and other cementitious materials.

What happens if it rains during a CMA100™ application?

Should rain fall on wet CMA100™, re-treatment will be required once the concrete has dried. It is critical that CMA100™ absorbs into the concrete before rain has the chance to wash it away.

Can CMA100™ be applied over CMAdmix™?

Yes. This is known as our SYSTEM APPROACH to ensure the entire requirements for a leak-free project have been thought out and delivered.

Can CMA100™ be applied over other crystalline products?

Yes, CMA100™ is compatible with not only CMSAdmix but other crystal growth (crystalline) products.

What concrete conditions are not suitable for CMA100™?

CMA100™ cannot be applied to damp or wet concrete. CMAdmix™ is better suited in such cases. CMA100™ should not be applied on any concrete surfaces where the concrete and/or cracks have been contaminated with water repellent materials. Additionally, if the concrete is very dirty, it needs to be cleaned prior to CMA100 application.

Will CMA100™ change the appearance of concrete?

In the short term it may be possible to see where CMA100™ has been applied but in the long term there is no change or discolouration to the concrete.

Does CMA100™ prevent oil and grease penetrating the concrete?

Such materials are unable to penetrate into CMA100™ treated concrete as it only allows the penetration of water, resulting in no effect on product performance.

How does CMA100™ compare to normal sealers?

Most normal sealers, such as silanes or sodium silicates sealers will not seal cracks in the concrete. CMA100™ addresses existing and future cracks by penetrating into concrete and remaining dormant in case of future cracks.