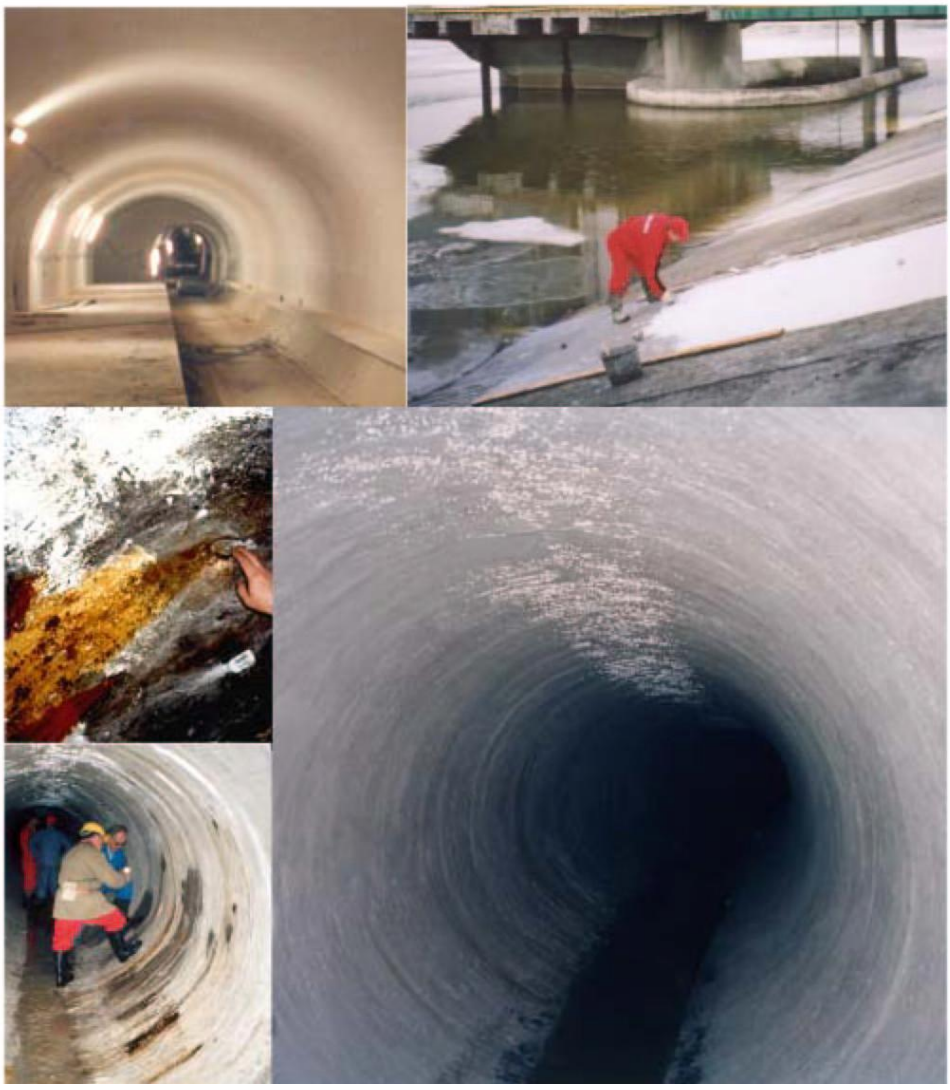
DRIZORO® Construction Products

MAXSEAL®

CEMENT-BASED WATERPROOF COATING FOR CONCRETE AND MASONRY

CE



DESCRIPTION

MAXSEAL® is a cement-based mortar with special additives and controlled aggregates. Once cured, it becomes a suitable product for both direct and/or indirect pressure waterproofing and protection against penetration on concrete, brick, stone, blocks, panels and pre-cast elements, cement mortar renders and masonry in general.

APPLICATIONS FIELDS

- Waterproofing and protection of structures for water retention: dams, channels, pipes, swimming pools, tanks, fountains, etc.
- Waterproofing and protection of drinking water tanks.
- Waterproofing and protection inside tunnels, galleries, basements, elevator shafts and, in

general, buried structures subjected to indirect hydrostatic pressure conditions.
- Waterproofing and protection of concrete in water treatment plants: water processing units, setting tanks, etc.
- Waterproofing and protection from the outside against aggressive water and/or ground salts in foundations, retaining walls and, in general, structures below the water table, subjected to indirect and/or direct pressure.
- Waterproofing and protection against weathering, carbonation process, freeze/thaw cycles, de-icing salts and chloride attack on concrete, mortar and masonry in buildings, civil, hydraulic, and industrial works.
- Waterproofing of bathrooms, changing rooms, kitchens and other indoor wet areas in hotels, residential buildings, offices, health centres, etc.

ADVANTAGES

- Excellent waterproofing properties. Withstands both high positive and negative hydrostatic pressures.
- Permeable to water vapour, allows the substrate to breathe.
- Applicable on wet substrates.
- Suitable for use in contact with drinking water.
- Excellent protection of concrete against CO_2 ingress, i.e. carbonation process, chlorides (Cl), i.e., electrochemical corrosion, sulphates that degrade concrete, air pollution and freeze-thaw cycles.
- Excellent adhesion to substrates, no primer/bonging agent required. It becomes port of substrate by filling and sealing the pores.
- High durability with zero maintenance.
- Resistant to aggressive media; marine environment, air pollution, etc.
- UV resistant.
- Once cured, it can be coated with protective mortars/decorative finish such as; ***CONCRESEAL®*** ***PLASTERING*** (Technical Bulletin No. 06) or with ceramics, mosaic tiles, stone, etc., with adhesives such as ***MAXKOLA® FLEX*** (Technical Bulletin No. 81) in swimming pools, decorative murals, kitchens, bathrooms, etc.
- Easy to apply by brush, broom, roller, or spraying means.
- Environmentally friendly: cement-based product and solvent-free formula.

APPLICATION INSTRUCTIONS

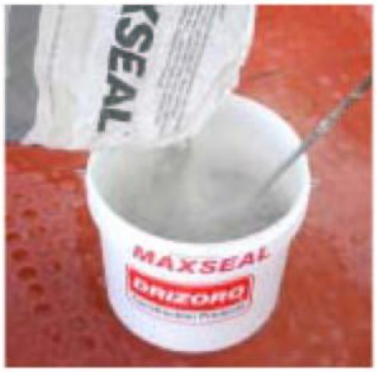
Surface preparation

Surface to be waterproofed must be solid, sound, rough, and without poorly adhered parts, superficial grouts and as uniform as possible. Likewise, it must be clean, free of paints, efflorescence, loose particles, greases, release oils, dust, plaster, etc., or other substances that could affect the adhesion of the product.

If the surface has previously been coated with lime or acrylic treatments, etc., these must be removed, leaving only the remains strongly adhered. For cleaning and preparing the substrate, preferably in smooth and/or poorly absorbent ones, use sandblasting or high-pressure water to provide an open texture surface. Aggressive mechanical means are not advisable.

Before the application of ***MAXSEAL®***, all holes and cracks must be opened at least 2,0 cm and then, patched with ***MAXREST®*** (Technical Bulletin No. 02). If water leaks are present, ***MAXPLUG®*** (Technical Bulletin No. 04) should be used. Reinforcement bars and other metal elements exposed during the substrate preparation must be cleaned and passivated with ***MAXREST® PASSIVE*** (Technical Bulletin No. 12), while surface and non-structural irons must be cut to a depth of 2 cm and subsequently covered with a suitable structural repair mortar.

To minimise the any possible damage caused by the crystallisation of salts from the substrate, apply an anti-efflorescence treatment such as ***MAXCLEAR® SULFALT*** (Technical Bulletin No. 163).



Once surface has been repaired, the entire surface to be coated should be thoroughly saturated with clean water. Allow excess water to drain away before applying ***MAXSEAL®***. Do not leave free-standing or pooled water on the surface.

Mixing
One part of ***MAXCRYL®*** and three parts of clean water are poured into a clean container to produce a mixing liquid to which ***MAXSEAL®*** is added. Mixing is best done by mechanical means such as a slow speed mixing drill (400-600 rpm). Small quantities may be mixed manually with a trowel.

When mixing manually care must be taken to ensure product is mixed thoroughly. Mix until a thick creamy paste free of lumps is achieved (mixing time about 1 to 2 minutes). Allow the mixture to rest for 5 minutes and then remix briefly prior to application.

A 25 kg bag or drum requires from 6,25 to 7,0 l (25-28 %) of mixing liquid (***MAXCRYL®***-water), while only water may be used if both the surface conditions and the temperature are optimum, i.e. porous surfaces as well as ambient temperatures in the range from 15°C to 20°C.

Application
To fill and cover properly all pores and voids, ***MAXSEAL®*** should be applied by means of a fibre brush or a nylon fibre broom, such as ***MAXBRUSH®*** or ***MAXBROOM®*** respectively. Apply the product to surface in a thick layer, making up a homogeneous and continuous coating. Do not spread the product as if it were paint.

Once ***MAXSEAL®*** has been spread on surface with the right thickness, it must not be brushed again, do not overwork the fresh coating. Apply two coats with a recommended consumption from 1,0 to 1,5 kg/m^2 per coat, i.e. a total consumption from 2,0 to 3,0 kg/m^2, ensuring that the thickness per coat is about 1 mm. Once the mortar has been placed and spread evenly, do not go over with the brush or broom. A second layer must be applied in the perpendicular direction of the first one, with a waiting-time of 12-16 hours between layers. This second layer may be applied by either roller or trowel to achieve decorative finishes.

MAXSEAL® can be applied also by spray equipment. However, to ensure complete and uniform coverage and proper sealing of all voids etc, the freshly sprayed product should be brushed or broomed.

If ***MAXSEAL®*** is going to be rendered on vertical surfaces, it is advisable to apply the second layer horizontally. For pipelines, a second layer should be applied in the direction of the water flow.

Application conditions
Do not apply ***MAXSEAL®*** if rain, and/or water contact, humidity dew, etc is expected within 24 h after the application.
The optimum temperature range for application is from 10°C to 30°C. Do not apply ***MAXSEAL®*** below 5°C or if such temperatures are expected within 24 h after application. Do not apply the coating on frozen or frosted surfaces

For applications at hot temperatures and windy conditions, i.e. summertime, the surface must be wet with water and ***MAXCRYL®*** as mixing liquid must be used. Avoid direct exposure for mortar to the sun in extreme heat conditions.

Curing
Protect application at hot temperatures from a quick drying by high winds or direct sunlight. If it is noticed that the drying process of ***MAXSEAL®*** is too quick, wet surface by spraying a fine mist of water or using wet burlap or polyethylene sheets for the first 24 hours of curing.

MAXSEAL® can be covered with ceramic tile, plaster, or earth/gravel within 3 days of application. Allow a minimum cure of 7 days (20°C and 50 % R.H.) before putting it to permanent immersion conditions. Applications at lower temperatures with higher humidity and/or sites without ventilation will need longer curing periods.

Once ***MAXSEAL®*** has cured and before putting into permanent contact with water, pre-wash the surface with a water jet.

Cleaning
Before product hardens, all tools and equipment must be cleaned immediately with water. Cured product only can be cleaned by mechanical means.

CONSUMPTION

Estimated consumption for ***MAXSEAL®*** is from 1,0 to 1,5 kg/m^2 per coat, i.e. a total consumption from 2,0 to 3,0 kg/m^2, applied in two coats.

This approximate consumption may vary depending on porosity, surface conditions and application method. A preliminary test on-site will determine consumption exactly.

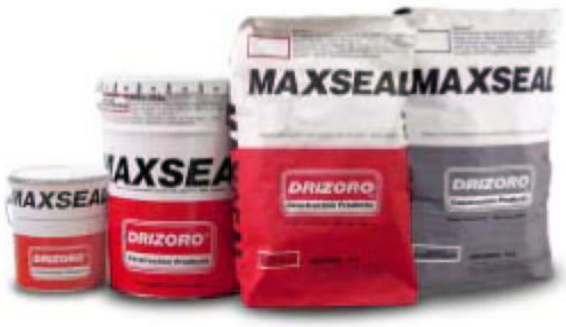
IMPORTANT INDICATIONS

- Do not add cements, additives, or aggregates to ***MAXSEAL***®.
- Use the recommended mixing ratios.
- Observe the minimum and maximum recommended consumptions.
- To recover the workability of the material, proceed to remix it but in no case add more water. Do not knead more material than can be applied in 20-30 minutes.
- Do not apply to water-repellent substrates, bituminous materials, plasters, or paints.
- Do not use ***MAXSEAL***® in contact with exceptionally soft water, acid water and/or carbonic water. If sulphates are present in water, use the type ***MAXSEAL***® ***ANTISULFAT***.
- In case of doubt related to the kind of water to be in contact with ***MAXSEAL***® or further information, consult our Technical Department.

PACKAGING

MAXSEAL® is supplied in 25 kg bags and drums, and 5 kg cans.

MAXSEAL® is available in standard grey and white. Other special light colours, ***MAXSEAL***® ***DÉCOR***, and pearl grey are manufactured by request.



STORAGE

Twelve months or twenty-four months, in its original unopened bag or metal drums, respectively. It must be stored in a dry and covered place, protected from humidity, and freezing, at temperatures above 5°C.

SAFETY AND HEALTH

MAXSEAL® is an abrasive compound so protective rubber gloves and goggles must be used to prepare and apply the mixture. In case of eye contact, rinse thoroughly with clean water, but do not rub. In case of skin contact, wash affected areas with soap and water. If irritation continues, seek medical attention.

For further information, Safety Data Sheet of ***MAXSEAL***® is available by request.

Disposal of the product and its empty packaging must be made by the final user and according to official regulations.

MAXSEAL®

TECHNICAL DATA

Product characteristics		
CE Marking, EN 1504-2 Description. Mortar for protection of concrete. Coating (C). Principles / Methods. Protection against ingress with coating (Principle 1-PI/1.3), Moisture control with coating (Principle 2-MC / 2.2) and Increasing resistivity by limiting moisture content with coating (Principle 8-IR / 8.1)		
General appearance and colour	White / Grey powder	
Maximum aggregate size, (mm)	0,63	
Density for powder, (g/cm^3)	1,10 ± 0,10	
MAXCRYL®:water ratio for mixing liquid, (by volume)	1:3	
Mixing water or mixing liquid, (%, by weight)	25-28	
Density for fresh mortar, (g/cm^3)	1,95 ± 0,10	
Density for cured mortar, (g/cm^3)	1,75 ± 0,10	
Application and curing conditions		
Minimum application temperature for substrate and ambient, (ºC)	> 5	
Pot life at 20 ºC & 50 % R.H., (min)	30 – 40	
Minimum / Maximum waiting time between coats at 20 ºC & 50 % R.H., (h)	12 – 16 / 24	
Drying time at 20 ºC & 50 % R.H., (h)	24	
Curing time at 20 ºC & 50 % R.H., (d) - Mechanical load: covering with gravel, renders, plasters, tiles - Permanent immersion	 3 7	
Cured product characteristics		
Waterproofing maximum positive/direct water pressure, EN 12390-8 (bar)	8	
Waterproofing maximum negative/indirect water pressure, EN 12390-8 (bar)	2	
Permeability to water vapour, EN ISO 7783-1/-2. Classification V (g/m^2·day) / S_D (m)	Class I: Permeable to water vapour 78,94 / 0,27	
Permeability to water and capillary absorption, EN 1062-3. w (kg/m^2·h^{0,5})	0,07	
Permeability to CO_2, EN 1062-6. S_D (m)	53,6	
Resistance to freeze/thaw cycles, SS 137244. Scaling (kg/m^2)	Very good resistance / 0,02	
Resistance to sulphates, ASTM C-1012. Classification / Expansion, (%)**	High resistance / 0,048	
Resistance to diffusion of chloride ions, ASTM C-1202. Classification	Low-Moderate ingress	
Compressive strength at 7/28 days, EN 13892-2 (MPa)	33,0 / 40,7	
Flexural strength at 7/28 days, EN 13892-2 (MPa)	4,90 / 7,55	
Adhesion on concrete at 28 days, EN 1542 (MPa)	1,82	
Abrasion resistance (Taber test), ASTM D-4060	500 Cycles	1.000 Cycles
Wearing index (Abrading wheel: CS-17 & Load: 1 kg)	0,60	0,56
Reaction to fire after application. UNE 23727	M-0	
Suitability for contact with potable water European Directive 2020/ 2184 and Spanish RD 03/ 2023	Approved	
Suitability for contact with potable water British Standards BS-6920	Approved	
Consumption*		
Consumption per coat/total application, (kg/m^2)	1,0 - 1,5 / 2,0 - 3,0	

* Consumption may vary depending on the texture, porosity, and conditions of the substrate, as well as the method of application. Perform an on-site test to find out its exact value.
** ANTISULFAT version

GUARANTEE

The information contained in this leaflet is based on our experience and technical knowledge, obtained through laboratory testing and from bibliographic material. ***DRIZORO®, S.A.U.*** reserves the right to introduce changes without prior notice. Any use of this data beyond the purposes expressly specified in the leaflet will not be the Company's responsibility unless authorised by us. We shall not accept responsibility exceeding the value of the purchased product. The data shown on consumptions, measurement and yields are for guidance only and based on our experience. These data are subject to variation due to the specific atmospheric and jobsite conditions so reasonable variations from the data may be experienced. To know the real data, a test on the jobsite must be done, and it will be conducted under the client responsibility. We shall not accept responsibility exceeding the value of the purchased product. For any other doubt, consult our Technical Department. This version of bulletin replaces the previous one.

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