DRIZORO® Construction Products

MAXSEAL®-S

CE

THICK LAYER SHOTCRETE WATERPROOF COATING FOR CONCRETE AND MASONRY

DESCRIPTION

***MAXSEAL®* -S** is a cement-based mortar with special additives and controlled aggregates suitable for waterproofing moderate direct and indirect hydrostatic pressure and for penetration protection by wet method and manually shotcreting application for use on concrete, brick, concrete block, mortar render and masonry substrates.

APPLICATIONS FIELDS

- Waterproofing in thick layer of tunnels, galleries, basements and elevator pits and generally, buried structures subject to moderate indirect hydrostatic pressure.
- Levelling of water containing structures before ***MAXSEAL®* -/FLEX** waterproofing: damps, channels, pipes, drinking water tanks, swimming pools and fountains, etc.

ADVANTAGES

- Excellent thixotropy, suitable for thick layer application without sags in vertical surfaces and roofs: up to 10 mm.
- Allows application by mechanical means if required.
- Good waterproofing properties. Withstands both positive and negative moderate hydrostatic pressures.
- The coating allows the substrate to breath and thereby it does not form a water vapour barrier.
- Allows application on wet substrates.
- Suitable for tunnel application due to its good fire behaviour.
- Very good adherence to substrate. It fills and seals all porous of the surface and becomes part of the structure of the surface.
- Resistant to aggressive environment such as seacoasts and zones with atmospheric pollution.
- Long durability and no maintenance required.
- Once ***MAXSEAL®* -S** is cured, it can be covered with waterproofing and protective mortars, such as ***MAXSEAL®* FLEX** (Technical Bulletin No. 29), ***CONCRESEAL®* PLASTERING** (Technical Bulletin No. 06) and ***MAXSHEEN®* ELASTIC** (Technical Bulletin No. 142).
- Easy to use and one single component.
- Environmentally friendly.

APPLICATION INSTRUCTIONS

Surface preparation

Surface to be treated must be clean, sound and free of paints, coatings, efflorescence, greases, oils, demoulding agents, dust, gypsum, etc. Remove by water pressure cleaning, sand blasting or other suitable mechanical method.

Before the application of ***MAXSEAL®* -S**, all holes and cracks must be opened up at least 2 cm and then, patched with ***MAXREST®*** (Technical Bulletin No. 02). If water leaks are present, ***MAXPLUG®*** (Technical Bulletin No. 04) should be used. In case of superficial non-structural bars are present, these must be cut at least 2 cm and then should be patched with ***MAXREST®*** or ***MAXPLUG®***.

In order to minimize possible salt crystallization damage coming from the substrate, apply previously an anti-salt treatment such as ***MAXCLEAR®* SULFAT** (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®* -S**.

Do not leave free-standing or pooled water on the surface.

Mixing
A 25 kg bag requires from 5,25 to 5,75 l of water (22±1 %). Mixing is best done by mechanical means such as a slow speed mixing drill (400-600 rpm). Mix until a thick creamy paste free of lumps is achieved (mixing time about 2 to 3 minutes). Allow the mixture to rest for 5 minutes and then remix briefly prior to application.

Application
Apply a layer of 3-10 mm of ***MAXSEAL® -S*** by wet method shotcreting or by trowel, in a continuous coating with an estimated consumption of 1,8 kg/m^2·mm.

Application conditions
The optimum temperature range for application is from 5ºC to 30ºC. Do not apply ***MAXSEAL® -S*** below 5°C or if such temperatures are expected within 24 h after application. Do not apply ***MAXSEAL® -S*** if rain is expected within 24 h after the application. Do not apply the coating on frozen or frosted surfaces.

For applications during hot temperatures and windy conditions, i.e. summertime, the surface must be wet with plenty of water. If product appears to be drying out too quickly spray the surface lightly with a fine mist of water. Avoid exposure to direct sunlight and extreme hot conditions.

Curing
Avoid the fast dry of ***MAXSEAL® -S*** maintaining its moisture at least 24 hours after application, spraying water without washing it or using polyethylene sheets or damp burlaps. ***MAXSEAL® -S*** may be cover with ceramic tiles, plaster or soil/gravel after 3 days.

Allow ***MAXSEAL® -S*** to cure for at least for 7 days at 20ºC and 50 % of relative humidity prior to immersion in water. Lower temperatures and higher relative humidity increase the curing time.

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

CONSUMPTION

The consumption of ***MAXSEAL® -S*** is 1,8 kg/m^2.mm applied in a maximum thickness of 10 mm. The consumption may vary depending in substrate porosity, roughness and substrate conditions. It is highly recommended to do a spot test to verify the exact value.

IMPORTANT INDICATIONS

- Do not add cements, additives or aggregates to ***MAXSEAL® -S***.
- Use the recommended amount of mixing water.
- Respect the maximum and minimum consumptions.
- To recover the workability, remix but never add more water. Do not mix more material that can be used in 20-30 minutes.
- Do not apply on bituminous materials, paints, gypsum or water repellent treated surfaces.
- For applications in contact with drinking water or subject to high direct or indirect hydrostatic pressures, coat with ***MAXSEAL® FLEX.***
- Do not use ***MAXSEAL® -S*** in contact with very soft water, acid water and/or carbonic water. If sulphates are present in water, or with sea water use the type ***MAXSEAL® -S ANTISULFAT***.
- In case of doubt related to the kind of water to be in contact with ***MAXSEAL® -S*** or further information, consult our Technical Department.

PACKAGING

MAXSEAL® -S is supplied in 25 kg bags and is available in standard grey and white.

STORAGE

Twelve months, in its original unopened bag, 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®-S 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®-S*** is available by request.

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

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)	
Appearance and colour	Grey or white powder
Aggregate size, (mm)	1,0
Dry density, (g/cm^3)	1,35 ± 0,10
Mixing water, (%, in weight)	22 ± 1
Application and curing conditions	
Minimum temperature (ambient and substrate), (ºC)	> 5
Pot life at 20ºC y 50 % H.R. (min)	30 – 40
Initial and final setting time at 20 ºC y 50 % H.R. (h)	3 – 8
Curing time at 20ºC y 50 % H.R. (d) - Mechanical load: coating cover, tile, plaster, etc. - Total (Permanent Immersion)	 3 7
Mortar Characteristics	
Water penetration direct pressure, EN 12390-8 (atm)	> 1,5
Water penetration indirect pressure, EN 12390-8 (atm)	> 1,5
Permeability to water vapour, EN ISO 7783-1/-2. Classification V (g/m^2·day) / S_D (m)	Class I: Permeable to water vapour 58,3 / 0,40
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 cycles of freeze-thaw	Resistant
Compressive strength at 28 days, EN 13892-2 (MPa)	> 22,5
Flexural strength at 28 days, EN 13892-2 (MPa)	> 6,5
Adhesion to concrete after 28 days, EN 1542 (MPa)	1,6
Reaction to fire	Not flame or gases
Consumption* / Thickness	
Application thickness, (mm)	3,0 - 10,0
Application consumption, (kg/m^2·mm)	1,8

* 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.

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. In order to know the real data, a test on the jobsite must be done, and it will be carried out 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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