

Technical Datasheet

Pozzolana®500 Series – Version 3.0 – English – Revision: 15.8.2020



Pozzolana® 500 Series

MINERAL SILICATE TERRAZZO BINDER FOR ARCHITECTURAL FLOORS

Pozzolana® 500 Series is a high quality inorganic binder using advanced mineral silicate binding technology with outstanding properties compared to traditional products which are using polymer or cement as binders. The product is designed for the purpose of creating various kinds of terrazzo surfaces to decorate floors with high aesthetic, durability, at the same time sustainable. By combining the product with other fillers such as sand, stones, glass beads, seashells, flakes, wood chips, pigments, etc., together with the suitable application methods, various types of surface can be easily created in a diversity of colors, patterns, thicknesses to meet different requirement of every project.

Pozzolana® 500 Series is used for unlimited creativity in terrazzo decoration and design. It is possible to create many kinds of surfaces of in-situ or precast terrazzo.

Pozzolana® 500 Series is manufactured with highly stable pozzolanic raw materials, non-toxic, VOC-free, carefully selected for production. In the process of applying or using the product, it is non-hazardous to human health and the environment.

Properties

- Environmentally friendly, non-toxic, no allergic potential.
- No VOC or APEO.
- Very low carbon footprint.
- Can create different types of surfaces including small, medium, large aggregates and palladiana terrazzo.
- Thickness of 4-5mm can be achieved by using fine aggregates.
- Works well in environmental conditions. No moisture sensitive.
- Fast curing, minimizes waiting time, quickly put into service.
- High adhesion, even on smooth substrates such as ceramic, glass, stone, etc.
- Can be applied on a variety of substrates including those containing calcium sulfate and magnesium carbonate.
- Sustainable, no peeling, no blistering, easy to repair and clean.
- No shrinkage (DIN EN 13454), no swelling, no natural crazing or cracks.
- Does not create alkali silicate reaction (ASR), no efflorescence.
- Wide range service temperatures; resistant to subzero temperatures, extreme heat and thermal shocks.
- High abrasion resistance.
- Can withstand water pressure up to 1.5 bar from 3mm thickness.
- Not affected by UV.
- Salt and chemicals resistance.
- Water vapor permeable.

Application design system

- Primer **Pozzolana®120 APM** or equivalent
- Body coat **Pozzolana® 500 Series** (or variant product)
- Protection sealer **Pozzolana® 190 PCS** or **POZZOKRETE® LK197PUR** or **POZZOKRETE® LK198WIS** or equivalent to improve stain protection.

Technical information

Strength class (DIN EN 13813)	CT-C40-F8
Abrasion resistance (BCA)	AR 0.5
Application temperature	+5°C to +35°C
Workability time @ 20°C	approx. 30 minutes
Application thickness	5mm - 50mm / 1 layer
Load capacity (curing @ 25°C)	
Walkable/ ready for grouting	after 3 hours
Ready for grinding	after 12 hours
Ready for polishing	after 16 hours
Ready for sealing	after 24 hours
Fully loadable	after 7 Days
Water mixing ratio	4.2-4.6 liters(35%) /bag
Strength (DIN EN 13892)	20 kgs (depending on the aggregates added)
Compressive strength	min. 40.0 N/mm ²
Flexural strength	min. 8.0 N/mm ²
Bonding strength	min. 2.0 N/mm ²
Slip resistance (DIN 51130)	
Original	R10
Adding other materials	R11-R13
Consumption	1.8 kg/m ² /mm.
Density	
Bulk density	approx. 1.2 kg/dm ³
Fresh mortar density	approx. 2.0 kg/dm ³
Original colors	light grey & off-white (~ RAL 9010)
Chemical resistance	pH 4 – 14 (with protection)
Heat resistance	-40°C to 500°C (grey) -50°C to 500°C (white)
Fire rating (DIN EN 13813)	A2

Range of usage

- Type of substrate: product can be applied on the surface of cement mortar, concrete, cement or gypsum board, bricks, ceramic tiles, marble, wood, shot-blast metal surface.
- Application areas: indoors, outdoors, areas with extreme weather conditions, or difficult application environment, areas require fast application, or require application of very thin layer.
- Field of application: products can be used in residential, commercial, industrial sectors.

Packaging, shelf life and storage

- 20kg paper bags. The shelf life of 12 months from the date of manufacture, which is printed on the bag label.
- Store in a cool, dry area with stable or controlled temperature (not < 0°C, preferably 10°C - 25°C). Place bags at least 300mm above the floor. Seal the opening bags immediately after taking a portion for use.

Technical Datasheet

Pozzolana®600 Series – Version 3.0 – English – Revision: 15.8.2020

Preparation of substrate

Substrate surface prior to application of Pozzolana® 500 Series should satisfy the following conditions:

- New concrete or screed shall have a minimum age of 28 days. The substrate shall be stable, without vibration or crack and ensure sufficient compression strength of ≥ 25 MPa.
- The surface shall be dry, clean, rough enough and free of all kinds of impurities.
- Cracks and holes must be filled with Pozzolana®115 JFC. Existing structural cracks must be professionally repaired. Please refer to the technical data sheet of Pozzolana®115 JFC for more information.
- The isolation joint must be prepared with a suitable expansion strip.
- Divider strips can be used to separate different colors. Thereby attention must be paid to a clean adhesion to avoid material flowing below or over the strips.
- Expansion joints in the substrate must be kept. After completing all grinding and polishing works, all joints have to be filled with an elastic joint sealant.
- For porous and water-permeable substrate surfaces, shall apply Pozzolana®120APM primer. When applying primer, ensure that the substrate is fully sealed to prevent water in the Pozzolana® 500 Series mortar from penetrating into the substrate, which may affect finished surface quality.
- Wait for the primer to dry within 1 hour then apply the topping. In case the primer has been dried for more than 6 hours, it is necessary to reapply new primer before starting the coating. The drying time of the primer may vary depending on temperature, humidity and environment conditions. In some special cases, it is necessary to make a sample of at least 1m² to test the adhesion to existing substrate. Please refer to the product technical datasheet of Pozzolana®120APM for more information.

Mixing and apply Pozzolana® 500 Series

Mixing

Pozzolana® 500 Series can be applied in different versions. Depending on the specific purpose and design look, it is possible to use various sizes of decorative aggregates. The recommended mixing ratio is from 1:1 up to 1:2, multiple types of aggregates such as stone, sand, seashell, glass, hard wood, etc. can be used.

- Always pour the required amount of clean water into the mixing drum first instead of the binder. Use 4.0 – 4.8 liters of clean water for the 20kg Pozzolana® 500 Series (equals to 20-24% by weight of binder). The amount of water utilized varies depending on the aggregates used and the site's application conditions.
- Do not use less than 18% water as it may result in surface cracking due to lack of sufficient hydration. Insufficient water may also reduce product workability.
- It is not recommended to use more than 25% water which may cause aggregates segregation, that may affect the quality of the finished surface as well as the dispersion of the color if mixed with pigment.

Use adjustable high-speed (≥ 600 RPM) batch mixer (for blending binder with water) and concrete mixer (for mixing aggregates with the blended binder). Please refer to the mixers provided by manufacturers such as PORTAMIX, etc.

- Step 1. Turn on the adjustable high-speed batch mixer, keep at slow speed, slowly pour the Pozzolana® 500 Series powder into the mixer that has enough water (4.5-4.75 liters of clean water) for one bag of 25kg Pozzolana® 500 Series, for a period of 30 seconds to 1 minute. Add powder stepwise to avoid formation of lumps. Switch the mixer to high speed (≥ 600 RPM) and keep mixing continuously for 2 minutes. Use a hand shovel or hand trowel to brush off the powder on the mixing drum surface and mixing paddle.
- Step 2. In the concrete mixer, moist the aggregates with the remaining water (0.5 to 1.0 liters) and stir for 30 seconds to 1 minute. Then pour the mixture from Step 1 into the concrete mixer and stir for another 2 minutes.

Application

- Step 3. Spread mixed material evenly on the floor. It is important to ensure the continuity of the previous and next batch to avoid cold joints.
- Step 4. Use the screed box to lay the mixture with the specified thickness on the floor surface. For narrow areas, confined space or edges shall use a hand trowel to spread the mixture to ensure enough of the thickness.
- Step 5. Use either hand trowel and straight-edge bar to level and smoothen the entire surface.
- Step 6. Use a spike roller to roll evenly over the smoothened surface to help break the air bubbles and make the surface more even. Always roll in crisscross direction and avoid rolling too quickly that could displace or cause material splashes to undesired places. Do not roll on areas where the mixture has begun to set.

Grinding and polishing

- Surface grinding works can be started 16-24 hours after casting of the terrazzo screed.
- To improve the chemical and wear resistance for the finished surface, it is recommended to apply silicate densifier Pozzolana® 140 SSS material or equivalent after grinding up to grit #200, prior to polishing.
- Please refer to the technical datasheet of the above product before use.

Apply protection layers

- To seal the surface, to minimize the possibility of contamination or staining, it is recommended to apply additional coats of protective surface sealers such as POZZOKRETE LK198CCS silicone coating or Pozzolana® 190 PCS water-based polyurethane coating or equivalent product.
- Please refer to the technical datasheet of the above products before use.

Application tools and cleaning

- Basic tools and equipment are adjustable high-speed batch mixer, mortar mixer, screed box, spike shoes, spike roller, straight-edge bar, hand shovel, hand trowel, level spreader.
- All application machines and tools shall be cleaned immediately with clean water after use. Wastewater and spilled materials need to be collected and handled properly to ensure safety for the environment and people

Attention

- Always carefully read the Technical Datasheets, Material Safety Datasheet, Applications Guides and other documents related to each Pozzolana® product before starting application.
- Before using any aggregates with the binder, always ensure that the aggregates are clean and dry. It is recommended to do trials to test prior to application on site since materials in different location often have different properties, which can make a difference in the quality of the final finish surfaces.
- Pozzolana®500 Series can be combined with acrylic polymer, fiber reinforcement, and mesh reinforcement to enhance the product performance.
- In case of application outdoors, in direct sunlight or in areas with strong winds, it is necessary to have cover over the application areas or have appropriate application methods to prevent the surface from drying too quickly.



Technical Datasheet

Pozzolana®600 Series – Version 3.0 – English – Revision: 15.8.2020

- The workability time and drying time of Pozzolana®500 Series may vary depending on temperature and environmental conditions. Times will be shorter in hot weather and longer in cold weather. Therefore, necessary measures will have to be taken accordingly to counteract the impact from temperatures.
- Pozzolana® 500 Series is made from natural mineral materials. Some minor difference in color may occur by different production batches. It shall be noted that using products from the same production batch (see product labels) will minimize the potential for color heterogeneity.
- Products need to be applied by applicators who have been trained and certified. The quality and appearance of the finished surfaces may vary depending on skills, experience, technical knowledge, workmanship, application equipment and tools of each applicator.

Safety Information

- There is no mandatory hazard labeling required for the Pozzolana® 500 Series. Avoid inhalation of dust when opening the bag and mixing. Protect skin and eyes during mixing and application.
- Excessed or spilled material during the application process do not have a risk of affecting to the environment. Used bags, wastewater and product waste should be collected and disposed of according to local regulations.
- Please refer to the Safety Data Sheet for more information on safety during the transportation, storage, lifting and handling of waste. Follow the instructions on packing and related documents.

Variant products

Below is a list of variants derive from Pozzolana®600 Series used as a binder combined with colors and aggregates using different application methods to create various desired finishing:

Pozzolana® 501 SLU – Self-leveling Underlayment Without Colors

Self-leveling underlayment with natural color or use as repair mortar. Thickness from 2mm or more for self-leveling layer and 1mm or more when used for repair works.

Pozzolana® 502 SLC – Self-leveling Topping With Colors

Self-leveling floor mixed with colors. Sand or aggregate can also be mixed to increase thickness. Typical thickness from 2mm - 50mm / 1 layer.

Pozzolana® 503 FQS – Flake, Quartz, Sand Sprinkle

Sprinkle floor with quartz, flakes or other materials to create surface of different textures. Typical thickness from 3mm or more.

Pozzolana® 505 PSS – Polished or Burnished Surface

Surface can be burnished to create sheen or ground and polished to expose aggregates. Typical thickness from 5mm or more.

Pozzolana® 504 MTZ – Micro Terrazzo

Terrazzo floor using aggregates with size smaller than 4mm. Typical thickness from 4mm or more.

Pozzolana® 508 LTZ – Medium to Large Terrazzo

Terrazzo floor using medium to large aggregates with size from 4mm to 35mm. Typical thickness from 8mm to 35mm.

Pozzolana® 510 ETZ – Extreme Large Terrazzo (Palladiana) Terrazzo floor using large stones or pieces with size larger than 35mm. Typical thickness from 10mm or more.

Pozzolana® 515 WCS – Wall and Ceiling Skim-coat

Render layer for walls and ceilings. Typical thickness from 1mm - 5mm or more.

Pozzolana® 520 RLS – Resurface or Surface Leveler

Floors are constructed in the form of mortar or dry mortar specifically used in elevation repair or creating new floor surfaces. It is possible to mix with large aggregates, fibers, etc to enhance other properties of the floor. Thickness more than 20 mm.

Pozzolana® 525 SFT – Stamped, Formed, Textured Surface

Shaped, molded, or patterned floor using small aggregates or colors. Typical thickness from 5mm or more.

Pozzolana® 529 SRT – Slip Resistant, Anti-slip

Anti-slip floor using roughing aggregates to build anti-slip surfaces. Typical thickness from 2mm to 9mm or more.

Pozzolana® 535 EAS – Exposed Aggregates w/wo Grinding

Floor with exposed large aggregates having anti-slip characteristic (like pebble wash) with/ without surface grinding. Typical thickness from 5mm or more.

Pozzolana® 545 TSA – Tiles, Stones Adhesive

Used as an adhesive layer for tile, stone slabs installation. Typical thickness from 5mm or more.

Pozzolana® 555 OMP – Object Molding or Precast

Shaped or precast products can be produced in a variety of ways, including by mixing or casting with materials such as fibers, mesh, etc.

Note

- Always carefully read the application instructions for the above products before applying. Before adding any additional material shall always test and do trials before applying on site. As materials in different locations often have different properties that can make a difference on the quality of the final product.
- Other applications not covered by this documentation may be added or available upon request.

Disclaimer

The content of this technical datasheet corresponds to the latest developments and our experiences. All information is based on ideal conditions and therefore may not be completely accurate in actual construction. Due to different types of materials, surfaces and actual construction conditions, guarantees are not given for applications. We are not liable for this information or any verbal statements. The only exception is when we can be blamed for willful negligence in liability. In that case, the customer must prove that he has fully and promptly transmitted all necessary information to us for examination and resolution. Any other details relating to the construction of our products must be confirmed in writing by us. The customer must check the suitability of the product for the intended application and purpose. We reserve the right to change the specifications of products due to ongoing development. In addition, our general terms and conditions are valid. This product documentation supersedes all previous technical data on this product.



GCM GLOBAL JSC

3/20 Bearing Rd Seven Hills NSW 2147

support@Pozzolana.com.au

www.Pozzolana.com.au



Licence Number
11183/01.02.17