Pozzolana® 200 Series

ECONOMICAL SILICATE-BASED SELF-LEVELING BINDER FOR FLOOR UNDERLAYMENT

Pozzolana® 200 Series is an innovative, eco-friendly, fast-setting, non-shrink, professional grade self-leveling product for the purpose of creating an economical self-leveling underlayment or be used as a repair material. The surface after finish is used as a smooth, homogeneous, stable substrate to receive resilient flooring such as vinyl, linoleum, carpet, wood, etc. or thin resinous coating (epoxy, polyurethane, etc.).

Pozzolana® 200 Series is manufactured from inorganic, non-toxic, VOC-free raw materials with outstanding properties to create seamless flooring in various environments with minimal application time, without safety hazards and long lasting.

Pozzolana ® 200 Series can be applied in thickness of 3mm-40mm in one single application by self-leveling.

Properties

• Advanced silicate-binder technology, environmentally friendly, non-toxic, no allergic potential.
• Inorganic material, no VOC or APEO.
• Low emission (EC1 PLUS).
• High flow ability, fast setting and minimal waiting time.
• Wide range service temperatures; resistant to subzero temperatures, extreme heat and thermal shocks.
• No shrinkage (DIN EN 13454), swelling, natural crazing or cracks.
• Does not create ASR and no efflorescence
• Adhere well to many types of surfaces especially smooth surfaces such as ceramic tiles, stone slabs, glass surfaces, etc.
• Water vapor permeable, no water stagnation in humid weather.
• Any practical thickness is possible in one layer.
• Can be applied onto surface which contains calcium sulfate or magnesium carbonate.
• Comply with anti-static requirements (DIN EN 6134- <1000 MΩ).
• Easy and fast in application, can be applied by machine.

Application design system

- Primer — **Pozzolana®120 APM** or equivalent
- Underlayment — **Pozzolana® 200 Series** (or variant product)
- Second Primer — **Pozzolana®** 120 APM or equivalent or primer which are recommended for topping layer.
- Topping — **Pozzolana® 400S/500S/600S** coatings or other types of surface materials.

Technical information

Strength class (DIN EN 13813)	CT-C40-F8
Abrasion resistance (BCA)	AR 0.5
Application temperature	+5℃ to +45℃
Workability time @ 20°C	approx. 35 minutes
Application thickness	3mm - 40mm / 1 layer
Load capacity (curing @ 20°C)	
Walkable/ ready for covering	after 4 hours
Light load	after 1 day
Fully loadable (indoor)	after 4 days
Fully loadable (outdoor)	after 7 days
Water mixing ratio	3.6-3.8 liters(18%) / bag 20 kgs
Strength (DIN EN 13892)	
Compressive strength	approx. 25.0 N/mm²
Flexural strength	approx. 5.0 N/mm²
Elastic modulus	approx. 7.0 N/mm²
Slip resistance (DIN 51130)	
Original	R10
Adding other materials	R11-R13
Consumption	1.8 kg/m²/mm.
Density	
Bulk density	approx. 1.2 kg/dm³
Fresh mortar density	approx. 2.0 kg/dm³
Original color	grey (~ RAL 9010)
Chemical resistance	pH 6 – 14
Heat resistance	-30℃ to 300℃
Fire rating (DIN EN 13813)	A2

Range of usage

- Indoor applications, areas with variable temperatures and require fast application, or require application of different thickness to level a surface.
- Can be applied in all commercial, residential, and public facilities projects

Packaging, shelf life and storage

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

Preparation of substrate

Substrate surface prior to application of Pozzolana® 600 Series should satisfy the following conditions:

- Can be applied to 1-day old new concrete. The concrete must be stable, shall not vibrate or crack and ensure sufficient compression strength of ≥ 25 MPa.
- The substrate surface shall be dry, clean and free of all kinds of impurities.
- Old substrate surface preparation using methods such as shot blasting, scarifying or grinding is recommended.
- Cracks and holes must be filled with. For larger cavities, patch with Pozzolana ® 200S mixed with dry quartz sand. Please refer to the technical data sheet of Pozzolana ® 115JFC for more information.
- Existing structural cracks must be professionally repaired.
- Do not apply across the expansion joints which shall be kept in the new overlay.
- Saw cut joints shall also be sealed with Pozzolana ® 115JFC or suitable materials.
- For porous and water-permeable substrate surfaces, apply Pozzolana ®120 APM primer. When applying primer, ensure that the substrate surface is fully sealed to avoid air bubbles being formed in the self-leveling screed and also to prevent water in the Pozzolana ® 200 Series layer from penetrating into the substrate, which may affect product flowability and finished surface quality.
- Wait for the primer to dry within 1-2 hours then apply the self-leveling. 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 ® 120 APM for more information.
- When applying on tiled floors, ensure they are crack-free. Loose tiles and tiles with hollow sound must be removed.

Mixing and apply Pozzolana® 200 Series

Water mixing ratio

- For this product, use 3.6 – 3.8 liters of clean water for the original 20kg Pozzolana ® 200 Series – equals to 18 – 19% by weight. The amount of water may change depending on the application conditions at the site.

Mixing

It is recommended to use an adjustable high-speed batch mixer (for blending powder with water) and concrete mixer (for mixing aggregates with mixed materials). Please refer to the mixers provided by manufacturers such as PORTAMIX, COLLOMIX, etc.

- Step 1. Turn on the mixer, keep at slow speed, slowly pour the Pozzolana ® 200 Series binder into the mixing bucket that has enough water for a period of 30 seconds to 1 minute.
- Step 2. Switch the mixer to high speed (≥ 600RPM) 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 3. Turn off the mixer and wait for 1-2 minutes. This time will allow the binder to react sufficiently with water and help to release the air from mixture.
- Step 4. Continue mixing at medium speed for 1 minute to ensure the binder and water are completely mixed. With manual processing an aeration time of up to 1 minute is recommended between the end of the mixing and pouring of the material. This minimizes rising air bubbles within the poured material.

Note: -
In case of mixing with additional materials such as sand or aggregates, pour those materials into the mixing drum together with the binder at Step 1. For large volume application it is recommended to premix the sand and/or color pigment in the factory.

Application

- Step 5. Spread mixed material evenly on the floor. It is important to ensure the continuity of the previous and next batch to avoid the case that the previous one has dried up before the next one is applied which may lead to cold joints.
- Step 6. Use the level spreader and self-leveling gauge rake to lay the mixture with the specified thickness on the floor surface. For narrow areas, confined space or edges shall use a notched trowel to spread the mixture to ensure enough thickness.
- Step 7. Use a spike roller to roll evenly over the surface to help break air bubbles and make the surface more even. Always roll in crises - cross directions and avoid rolling too quickly that could slip or cause material splashes to undesired places. Do not roll on areas where the mixture has begun to set.
- Step 8. Use either hand trowel or soft steel straight-edge trowel to smoothen the entire surface to eliminate spike roller marks if required.

Topping layer application

- In case of using other Pozzolana ® products as a topping, it is necessary to reapply the primer on the finished underlayment surface to ensure it is sealed against water penetration to avoid air bubbles being formed in subsequent layer.
- In case of using other coating materials, it is necessary to apply a suitable primer for those products. Surface preparation on the finished underlayment surface may be required to remove the fine cream on the surface as well as to provide the appropriate roughness required by the coating products.
- Please refer carefully to the technical documents of other products before using.

Application tools and cleaning

- Adjustable high-speed batch mixer or screed pump, spike shoes, spike roller, smoothing squeegee, hand shovel, hand trowel, level spreader.
- All application machines and tools should be cleaned immediately with clean water after using. Waste water, spilled materials need to be collected and handled properly to ensure safety for the environment and people.

Attention

- Always apply Pozzolana ® 120 APM primer or equivalent on surfaces which is to receive Pozzolana ® silicate mortars including repaired spots or filled joints before starting the next topping.
- Always use spike shoes to walk on poured surface during application.
- The floor surface after application must be protected from drying too quickly away from wind or high temperatures) for at least 24 hours. Do not cover the finished surface during this time.
- In case of application outdoors, in direct sunlight or in areas with strong winds, it is necessary to cover the application areas against the risk of surface drying too quickly.
- In the case of using a pump mixer or a combination of a batch mixer and a screed pump, the instructions for use of these machines shall be carefully read.
- Some minor difference in color that might occur is unavoidable by different production batches. This shall be kept in mind when doing product design and selection. It shall be noted that using products with the same production batch (see product labels) will minimize the potential for color heterogeneity. Using different amounts of water or changing application techniques during application may cause different color appearance on the mortar surface. Please note that this product is an inorganic product. Therefore, product colors are not exactly same as those colors in the RAL Color Charts and the Charts shall therefore be used for reference only.
- Products need to be applied by professional applicators that have been trained and certified by production company or authorized partners. Finish product quality may vary depending on the management skills, experience, technical understanding, workmanship, application equipment and tools of each applicator.

Safety Information

- There is no mandatory hazard labeling required for the Pozzolana® 200 Series. Avoid inhalation of dust when opening the bag. Protect skin and eyes during mixing and application.
- Please refer to the Safety Data Sheet for more information on safety during the transportation, storage, lifting and handling of waste. Follow the instructions

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® 201 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® 202 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® 203 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® 205 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® 204 MTZ – Micro Terrazzo**
  Terrazzo floor using aggregates with size smaller than 4mm. Typical thickness from 4mm or more.
- **Pozzolana® 208 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® 210 ETZ – Extreme Large Terrazzo (Palladiana)** Terrazzo floor using large stones or pieces with size larger than 35mm. Typical thickness from 10mm or more.
- **Pozzolana® 215 WCS – Wall and Ceiling Skim-coat**
  Render layer for walls and ceilings. Typical thickness from 1mm - 5mm or more.
- **Pozzolana 220 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® 225 SFT – Stamped, Formed, Textured Surface** Shaped, molded, or patterned floor using small aggregates or colors. Typical thickness from 5mm or more.
- **Pozzolana® 229 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® 235 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® 245 TSA – Tiles, Stones Adhesive**
  Used as an adhesive layer for tile, stone slabs installation. Typical thickness from 5mm or more.
- **Pozzolana® 255 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 variant products before applying. Before adding any additional material should 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. There are additional products available to be used with Pozzolana ® 200 Series to improve the waterproofing, antimicrobial, antistatic, color, elasticity or workability time properties. Other applications not covered by this document may be supplemented or made available upon request.Other applications not covered by this document may be supplemented or made available upon request.

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