



## Microcement Floor

### Instructions Technical Data

SAFETY FIRST KEEP OUT OF REACH OF CHILDREN. AVOID EYE CONTACT. SEEK IMMEDIATE MEDICAL ATTENTION IF INGESTED OR EXPOSED TO EYES. AVOID PROLONGED EXPOSURE TO SKIN. WEAR SAFETY GOGGLES AND GLOVES WHEN WORKING WITH PLASTER. WEAR OSHA APPROVED RESPIRATOR WHEN WORKING WITH DRY MIXES OR WHEN SANDING PLASTER. FOR MSDS (MATERIAL SAFETY DATA SHEET), VISIT [WWW.5STARFINISHES.CA](http://WWW.5STARFINISHES.CA)

#### GENERAL

Our Microcement Floor plaster is developed with the latest in polymer admixture technologies all blended with high quality white cement, silica flour and graded silicas. This line of plaster comes as a basecoat 50 mesh for embedding mesh and smoothing over tiles and subfloors, as well as a 75 mesh fine grade that is useful in creating polished or medium textured finishes and comes in a light grey meant to mimic the natural look of concrete, and a white base that can be colored with our powder tints. Our Microcement can be used on interior floors, exterior driveways, walkways, pool decks, countertops etc. Microcement Floor should be applied in a minimum of 3 coats over our interior or exterior supplied quartz stone primer, Ardex p82, or epoxy primers for exteriors etc. This product is very strong, highly modified, and comes in a dry bag mix that does not require any additives other than water. Microcement naturally has heat reduction characteristics that make it great for outdoor areas where you will be walking barefoot. This product is great for new build floors or for going over existing tiled floors etc.

Recommended for areas that are stable, sound and not flexible with moving joints.

**CAUTION: Kerdi Foam board is not compatible with our Microcement system. These boards are generally too flexible for larger walls and have limited impact resistance for thin veneer coatings. We recommend Densglass, Blue Aqua Board, and Hardi Backer board as the three best options for backing. We recommend the use of Ardex 8 + 9 waterproofing due to its strength and crack prevention and limited risk of delamination. Always prime your walls with our Iplex primer prior to installing Ardex 8 + 9 to ensure a clean cohesive bond without any dust acting as a bond breaker. DO NOT use kerdi sheet membranes on floors or walls as they delaminate easily and have bubbles and other risks that are not compatible with our Microcement System.**

**Do not use Kerdi foam for any benches or shower curbs. The floor in the shower should be made with speed slope with the grate finished into the speed slope and or you can use a kerdi pan and apply a small tile to finish to the grate and to provide added structural support prior to adding Microcement. Do not add grout to the tiles and only prime with our extreme primer plus.**

#### COVERAGE

Depending on surface conditions, a 20 kg of Basecoat will cover 120-200 sq ft one coat, and 20 Kg of

Topcoat will cover 200-300 sq ft one coat.

### **APPLICATION**

Use a stainless steel trowel, ungauged silicone floor squeegee or a spatula to apply. This product can be mixed to varying consistencies and can be used as a thin floor covering for squeegee use.

### **SUITABLE APPLICABLE SURFACES**

Apply Microcement Floor over substrates that are clean, cohesive, free of contamination and as follows:

**Interior tiles floors:** Check all tiles are affixed to the substrate and there are no loose, popped, or broken tiles. If there is any chance the tiles are not properly installed, then you must remove the tiles and should not proceed as the Microcement will use these as its substrate. Clean and scrub the tiles and ensure they are very clean. Then apply our Extreme Primer Plus, Mapei eco-prim or any other primer designed for tile over tile priming. Please check and test your primer and ensure it is strong enough for your application. Extreme Primer plus is our approved and preferred primer as it is a two component primer that binds tenaciously and does not leave a sticky residue that is difficult to walk on.

**Countertops new or old:** For any laminate, tile or stone counter, always check to ensure the counter is strong and stable without and cracked or loose areas. Sand lightly the surface with 80 grit sand paper, and clean with degrease or toluene, to ensure all grease, polishing waxes etc have been removed. Apply one layer of Extreme Primer Plus and allow to completely dry and apply our mesh over the entire surface and wrap over any edges. If the counter is new always use thicker wood or cement board to ensure no flexing occurs at joints and always brace long spans etc to stop any flex. Two layers of materials are always recommended. Recommended substrates are wood and or hardi backer board or similar substrates.

**Shower floor new or over tiles:** If the floor is existing tiles, refer to interior tiles section and apply Extreme Primer Plus. If the substrate is a new build material, ensure that the plumber or tiler on site ensures the drain install is designed so the drain is flush after the waterproofing and flood test is performed, to ensure your finish will easily apply just slightly above the drain. Most installs are designed for tiles, and the tile drain set up is left up to account for the installation of tiles and will not work for Microcement. It is best to have the plumber or tiler lay the substructure of the shower floor, install the drain, and waterproof with Ardex 8 + 9, flood test and have it certified for use. After this you can begin your install for the walls and floors etc and perform your own waterproofing for the walls.

It is recommended to use a product that is a rapid set polymer modified hard pack such as custom building products speed slope rapid setting sloping mortar, to set the design the floor and drain as a finished level and product. The Microcement will overlay this and bring the height up only 2 mm around the drain.

Always use a roll on membrane like Ardex 8 + 9 as your waterproofing agent as Kerdi membrane can have bubbles and air pockets in its installation that can cause issues with the Microcement.

**Exterior concrete, garage floors:** The preparation on these surfaces should be viewed as the most important step in your project. If there is any paint, sealers, oil etc these must be completely removed first, as they can serve as bond breakers, If the surface is smooth, create a profile using chemical or mechanical means, and clean vigorously to ensure there is no debris. Use a tape test and press a piece of tape vigorously on to the substrate, If any debris is coming off the surface, it must be cleaned more. As long as the concrete is clean and profiled you can apply the Microcement without any primer. Make sure to repair any cracks etc with appropriate materials and profile these repairs after as well.

**NOTE:** Please always consider if the use of a moisture epoxy barrier is required, as moisture can cause delamination, blistering or general failure. Interior slabs and sometimes exterior slabs may have a large amount of alkalinity and may also cause failure without a calcium chloride test or relative humidity probe. In many cases it is highly advised to apply epoxy vapour membranes to the exterior concrete prior to install.

**Interior new build:** Check your subfloor for any weak areas, and remove the old subfloor is necessary and also check the joists for movement and back block if necessary. Then lay down your first layer of subfloor, warmboard etc. Finally lay a second layer of board perpendicular to the joints of the first floor using ¼ or ½ inch hardi backer board, embedded into the previous plywood with modified tile adhesive, and screwed down every 8 inches or as per recommendations for the previous layer.

Apply our armour tape mesh to all joints and embed into a layer of Extreme Primer plus mixed to a plaster consistency using a sponge if applicable to remove any excess on the edges and let dry. Prime entire floor now with one layer of Extreme primer plus mixed to primer consistency and allow to dry. Now roll our either Armour mesh or Adhesive mesh without overlapping and embed into the first basecoat layer of Microcement floor.

### Secondary more expensive options and potentially better crack isolation than using cement board

**Microcement over Warmboard:** Apply one layer of Extreme primer plus over entire warmboard system and apply an uncoupling membrane using a rapid setting thinset. Pour ardex K60 flexible self levelling over entire floor to one quarter inch over the high points of the uncoupling membrane. Prime entire floor with one layer of Extreme Primer plus and armour mesh and embed into the first layer of Basecoat. We are now also recommending Ardex K-22-F as a secondary option for self levelling which may be a better option than K-60.

**Over wood subfloor with or without radiant wires etc:** Prime floor with recommended primer for thinset used, and apply Uncoupling membrane plus Ardex k60 or K-22-F self levelling one quarter inch above highest part of membrane. Prime entire floor with one layer of Extreme Primer plus and armour mesh and embed into the first layer of Basecoat.

**Cement or Gycrete floor etc:** Grind out any cracks and apply Ardex Ardi fix to all areas, grind smooth once dry and prime entire floor with ardex EP2000 and allow to dry. Apply one layer of Ardex p82 over this to promote adhesion to the epoxy primer, and lay out one layer of Armour mesh and embed in first basecoat followed by second layer of adhesive eifs mesh in second basecoat. You can also choose to fix all cracks etc and then install Mapeiguard 2 a bitumen stick on membrane which has its own primer provided as well for below the bitumen.

Microcement does not crack on its own generally but any surface that moves those cracks can telegraph through the cementitious layer. There is not system on the planet at the moment that is perfect and 100% recommended for Microcement or any cement overlay of any kind that can guarantee against cracks.

Typical substrate prep costs can run as high as \$8 a sq ft for materials alone plus labor on top of the Microcement cost of between \$20-25 dollars a sq ft. Total system can be as high as \$35 dollars materials plus labor depending on the substrate etc. Over tiles and other fixed substrates are cheaper due to the lower costs of substrate prep.

**PRODUCT PREPARATION** All surfaces must have even absorption rates for the final appearance to look uniform. It is crucial to ensure the correct primer is used. Do not skip this step as it helps to seal the joints form the mesh tape, which will have a different absorption rate than the other areas of your floor. Please follow the steps above carefully to avoid mistakes.

Never use more than one dry mix for an entire floor surface as the color for the mix will not match perfectly. Please add at least 1 part water to 1 part powder tint first to hydrate the tint fully prior to adding into the Microcement. Always use the same amount of water for each mix of your topcoat of plaster. Never mix water into the plaster if its thicker during application as this will cause the plaster to change color due to a higher hydration rate. Doing this will cause the material to dry to a different color. You must mix only what is needed and mix the entire material using some extra water at the start to ensure the mix will be wet enough as it starts to set later in the bucket. Never spray water over the setting product as your working on the wall, as this also will cause staining and lighter and darker areas that are inconsistent with the natural look of the plaster. It is not bad practice to spray with water however, and this technique can be used if the sample board reflects this finish prior to install.

## MIXING and Application

**NOTE:** I personally recommend using only the flexible stainless trowels we sell and the plastic medium and or small burnishing trowels to tighten up and polish the coats closing the pore and pinholes on each layer. The plastic trowels I find work the best for this purpose and will not darken or burn your plaster finish. Microcement should be burnished and polished, closing the pores just the same as you would a Tadelakt finish to ensure a smooth watertight finish.

**Base Coat for mesh:** Mix one bag of Basecoat plaster with 3.3 to 4L of water to the desired consistency. The plaster should be slightly flowing but have a lot of body and build up to higher thicknesses without settling.

**Second Base coat:** Mix one bag of basecoat plaster with 4 to 4.5 L of water to the desired consistency. The product should be flowing more than the First coat mix but not be very liquid at this point. You can apply this coat with a trowel to ensure you smooth over the second layer nicely hiding any mesh and producing a solid smooth floor. If any mesh bubbles are sticking up, you can scrape them off with a putty knife prior to installing the second coat, or you can sand the entire floor first with 60-80 grit sand paper to produce a smooth layer. Always vacuum well prior to the next coat. You can also spray the floor down with a water sprayer to hydrate the floor as you go to make application easier, as the product will dry out very quickly on this second coat. The more wet you mix the product the more pin holes you will be getting, as the product is more viscous and can allow the entrapped air below to escape. It is best if possible to work with stiffer mixes to help eliminate pin holes and make it easier to apply.

**Third Fine coat:** Mix one bag of Microcement floor fine to a flowing consistency with 4.5 to 5L of water, and apply with a trowel of squeegee and spraying the floor as you go with a garden pump sprayer. This coat you can pour on to the floor and pull with a high quality silicone squeegee, ensuring even coverage and not allowing much extra product to remain on the floor. If your basecoat was done nicely, this layer will start to fill the voids and produce a smooth even thin layer. If you have done two stiffer base coat mixes and left the floor with very few pinholes then this layer can be applied more wet without many problems. If the basecoat was applied more wet I recommend using a stiffer mix for this to eliminate and fill pinholes using a trowel to close off the pore and create a uniform even look.

**Fourth Fine coat:** Mix one bag of Microcement floor fine to a flowing consistency with 4.5 to 5L of water, and apply with a trowel of squeegee and spraying the floor as you go with a garden pump sprayer. This coat you can pour on to the floor and pull with a high quality silicone squeegee, ensuring even coverage and not allowing much extra product to remain on the floor. You can also apply this layer with a trowel creating more effect and burnishing it as you go. You can sponge areas out as you connect them to blend dry lines together etc.

If you are going over tiles or hardi backer board, cement etc, always embed mesh, and follow the same procedure.

Again with this layer always watch for pinholes, and adjust your application and thickness as necessary to create a beautiful floor. Generally if you remove pinholes by the second basecoat and or first topcoat, the final layer will spread easily without issue and should not have any problems.

**TOP COATS:** The dried finish can be sealed only with topical sealers, either one or two component. We recommend using our two-component water-based polyurethane, or a single coat of our high wear polyurethane. If the area in question is strictly a decorative interior wall, then wax or glaze sealers can be an option.

**Caution:** You should spend as much time sealing your microcement as you did applying the final layer so if the project took 8 hours to finish the last layer you should spend a total of 8 hours sealing combined. Sealing requires a lot of light and a keen eye to ensure you are applying enough sealer and not leaving dead spots or dry pores that will get wet later. You should always apply more sealer than is required and then remove the excess by rolling it out afterwards. The Hi-wear sealer to achieve a perfect watertight

finish must have every single pore saturated with oil and then back-rolled to be very thin after. You have to ensure the product is fully saturated and your application rate should be around 1l of hi-wear for 100sq of microcement. Lay the hi wear down in a way that the microcement is entirely saturated or you will not achieve a watertight application.

If you find areas that are not waterproof you can always go back and seal them with more hi wear after it has fully dried by applying some sealer to the areas and then allowing it to absorb and rubbing any extra off the surrounding areas. If you missed areas and they are not sealed very well at all, try using the poly seal first to help protect the hi wear from darkening that area and leaving an unsightly patch on your floor.

**Exterior Surfaces:** 1 part water to 1 part Polyseal in 1 layer, followed by 3 layers of undiluted Polyseal. This can all be done the same day as each layer dries out quickly and be overcoated. Please allow this to completely dry and do not seal until the next day as this product must cross link over night. Apply 1 layer of High wear 90s or 2-3 coats of water based polyurethane. If your using Poly WB in wet areas, it is always recommended to use 3 layers as it does not guard against water as well as an oil based sealer like our Hi wear. Another option is to apply 1 part water, 1 part poly seal, two layers of poly seal, one layer of Poly wb, and finally a layer of Hi wear. I would allow the poly seal layers to dry until the following day, then apply one layer of poly wb and allow to dry less than 24 hrs, and finally overcoat with Hi wear.

**Interior Surfaces:** One layer Poly seal diluted one to one with water followed by two layers of undiluted poly seal. Allow this to dry and cross link overnight and then apply two layers of Poly wb semi gloss. I prefer Poly wb as a walkable surface for interior residential and commercial walked on surfaces.

**Countertops:** Due to thermal shock issues in kitchen environments with poly seal pre sealer It is recommended to use our Poly wb water based two component sealer direct to the counter first in three layers. The poly wb will enhance the color of the counter and darken the finish unlike using the poly seal, so it is recommended to choose a microcement color a shade or two lighter than what you desire as your final color. You can use the High wear with or without the aluminum oxide additive, which will provide a high gloss finish. The High wear 90s should be applied after a full 12 hrs after applying the poly wb and should be applied thin and worked into the finish as much as possible with a microfiber roller that is lint free. It is always recommended to use a pot heat trivet to stop any pots from being placed direct to the finish when hot. Do not cut direct to the surface without a chopping board. For an option of having no color enhancement It is recommend to first stain the countertop with Sherwin Williams color top prior to applying the Poly wb.

**Commercial Showers:** Due to the extreme use these areas receive, they should be treated as an exterior surface, and the 4 layers of Polyseal should be applied first at 1-1 water, and three layers undiluted, and finally 1 layer of High wear 90s with aluminum oxide as an anti slip for the floors, and or extra anti slip aggregate of your choice, and with or without the aluminum oxide for the wall surfaces.

**Residential Showers:** You can apply 4 layers of Polyseal at 1-1 and three layers undiluted followed by 1 layer of high wear.

**Waterbased concrete stain:** You can also choose to apply a product called H & C Colortop sold by Sherwin Williams. This stain can be matched to any of their paint colors, and can be applied to the Microcement as a decorative color layer. It is suggested to sponge the color on thinly to ensure the surface remains mottled and has a natural look. This will replace the 1-1 layer of Polyseal, but the undiluted Polyseal should be used over the stain.

**Extra Info:** Polyseal can be coated over anytime, and can be applied prior to your topcoats without worrying about when to apply the next layer. The Poly WB however has a recoat window max of 24 hours, so it would be advisable to coat the Microcement in the afternoon and then the following morning so you stay well within the range. If the first layer of Poly WB has dried longer than 24 hours, you must abrade and sand the surface to create a profile for the new sealer to adhere. The most natural look is achieved with Polyseal and Poly WB which will not darken the color of the Microcement to any major extent.

**COLORANTS:** Plaster can be tinted with our line of dry pigments. Multiple colors can be applied simultaneously for more creative finishes. This product is not compatible with universal tints and will destroy them and create hard lumps of colors in your finished product.

**DELIVERY, STORAGE AND HANDLING:** Keep materials away from direct sunlight. Store them in original, unopened packages in a dry, dark location at temperatures between 45 and 95 degrees F. Always wear OSHA-compliant eye protection. Wear a respirator to mix, sand or scrape the product. Work only in well ventilated areas. Avoid prolonged skin contact. Avoid working with the material in temperatures below 41 degrees F or above 96 degrees F. Keep away from children. Do not use products older than 3 years. Always test an older product before use to ensure its quality. Read the entire MSDS and product labels.

**MIXING:** Our dry mix plaster can be mixed to different consistencies depending on the finish you are applying. In the case of stamped finishes, you would want the mix to be more stiff and with smooth polished finishes the mix should be more wet and thin. Start slow and never add more water than you need at the start, as the mix can become too wet. When using our dry pigments first add them to 1/3 of your mix water and mix with a drill for 1 minute to ensure it is mixed entirely. It is possible to strain the water through a fabric paint strainer as well prior to adding plaster to the water.

If adding all the dry pigment first to the plaster in the case of very large applications, then it is best to mix the product very well and do some tests first to see if the pigment is fully mixed or not.

When mixing, always have some water in the bottom of the bucket first, as this helps in mixing and not getting dry plaster stuck to the bottom of the bucket. It is best to mix the plaster in two buckets broken up first and then combine after mixing and do a final mix so the color is mixed thoroughly. You should use a high speed drill, such as a Makita hammer drill that has a max RPM of 2000. If you use a mixing spade to get the initial mix together, then always use a higher rpm hammer drill after as this faster speeds allow for a vortex to be created and ensures a uniform mix. The plaster will not mix entirely without a higher RPM drill.

**POT LIFE:** This product will set and has a pot life of roughly 60-180 minutes depending on water temperature, exterior conditions etc.

#### **PRODUCT SPECS:**

Interior / Exterior

Rated for vehicular traffic, residential and retail floors, commercial showers etc.

Seal after 12 hrs dry time

Light traffic 12 hrs

Compressive strength: 5200 psi

Tensile strength: 927 psi

Freeze Thaw: no visible effects

Impact resistance: 576 inch/lbs

To order materials, find more tech information and install ideas please visit [WWW.5STARFINISHES.CA](http://WWW.5STARFINISHES.CA).

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