Frequently asked questions about Alcolin Z100 Self Levelling Floor Screed

1. What is Alcolin Z100?

Alcolin Z100 is a cement based, protein free self-leveling screed used to prepare, repair, and level internal floors prior to floor-covering installations.

2. What are Alcolin Z100 used for?

Alcolin Z100 is used to prepare, repair and level uneven, internal floors prior to floor-covering installations e.g. laying of carpets or tiles. It may be applied to concrete, sand/cement screeds; primed anhydrite gypsum screeds, terrazzo, bitumous waterproof membranes, stone tiles, and well bonded quarry & ceramic tiles.

3. How do I use Alcolin Z100?

Applying a floor screed is a fairly detailed technical job. The first step is to ensure that the surface is correctly prepared prior to screeding. Refer to the Alcolin Z100 technical data sheet for more detailed information pertaining to surface preparation. Another important technical detail that must be considered is that of expansion joints. Never screed over existing structural movement joints. Once surface preparation has been taken care of, mix approximately 4L of water into a container, and then slowly add 20kg of Alcolin Z100 while stirring continuously to ensure a smooth, lump free consistency. Stir for about 2 minutes after the last bit of cement powder has been added. Allow the mixture to stand for 2 – 3 minutes and then stir again. Do not add more water at this point. Should a white film appear on the surface on standing, too much water has been added. To rectify this, add more Alcolin Z100 until the correct consistency is achieved. The mix must be used within 30 minutes. Pour the mix onto the surface and spread with a plasterer's trowel to the required thickness. A maximum of 10mm can be applied in one application and feathered down to an edge if required. The ideal screed thickness is between 3 to 6mm. Alcolin Z100 is self-smoothing; most trowel marks should disperse. Alternatively, a spiked roller may be used immediately after trowelling to obtain a smooth finish and to remove pin holes from the surface caused by escaping air bubbles formed during mixing. Avoid excessive rolling as this may result in surface laitance, which will have to be removed when cured. Remove any ridges formed or trowel marks remaining, with a sand block after the screed has set. Protect freshly laid surfaces from draughts, direct sunlight and sources of heat. These conditions may lead to rapid drying of the screed preventing the cement from fully hydrating, resulting in a weak, powdery screed which may develop cracks. Install expansion joints in horizontal and vertical directions every 5m.

4. **What is the difference between Alcolin Z100 and Alcolin Z101?**

Both Z100 and Z101 are self leveling floor screed. Alcolin Z101 is a high quality rapid setting self leveling screed, whereas Alcolin Z101 is an economically formulated standard setting product. Alcolin Z101 allows for a rapid walk on time of approximately 2 hours, compared to 5 hours for Z100. This fast setting allows one to not only resurface the floor, but also to tile or lay a carpet within one day, which was not possible with a standard set floor screed such as Alcolin Z100. Alcolin Z101 also offers superior compression strength compared to Alcolin Z101.

5. **Can I leave Alcolin Z100 as my final wearing surface?**

No. As a minimum, you should apply an epoxy or a polyurethane sealer on top of the screed. This should be applied approximately 3 weeks after laying Alcolin Z100.

6. **I like the finish of Alcolin Z100. What coating can I put over it to protect it from wear, yet allow the finish to remain visible?**

You can apply a clear epoxy or polyurethane sealer on top of the screed. This should be applied approximately 3 weeks after laying the screed.

7. **I need to screed to a depth greater than 10mm. Self leveling screeds such as Alcolin Z100 specify a maximum screed thickness of 10mm. What can I do?**

For thicknesses greater than 10mm, the screed mixture must be extended by using 1 to 1 part by volume of 3mm granite chippings. The flow characteristics of the self leveling screed will be impaired and the floor should be lightly trowelled to a smooth finish. Once dry, a standard 3 – 5mm screed mix may be applied to improve the finish.

8. **Can I screed over existing expansion joints?**

Definitely note. New expansion joints must coincide with old joints.

9. **My screed dried to a powdery finish. What could be the problem?**

If the screed is beyond its shelf life, the cement may have been partially reacted then prior to mixing, resulting in a poorly pound screed. It could also be that too much water was added during the initial mixing. In addition, hot and windy conditions when laying the screed may have resulted in accelerated drying, driving water out of the cement before it has reacted.

10. **How soon after laying Alcolin Z100 can I walk over the floor? How does this compare to Alcolin Z101 rapid set self leveling screed?**

One should wait approximately 5 hours. Alcolin Z101 by comparison can handle foot traffic after as little as 2 hours.

11. **I am looking for a fast setting self leveling floor screed that can take early foot traffic. Can I use Alcolin Z100?**

No. A rapid setting self leveling screed such as Alcolin Z101 should rather be used. This allows for foot traffic after 2 hours.

12. **Does a new cement/sand render/screed require a minimum drying time of 3 weeks prior to the fixing of ceramic tiles? If this is correct, is there an alternative material that allows the fixing of tiles within a shorter time scale?**

This is correct, and is recommended by the SABS 0107:1996 specifications : The design and installation of ceramic tiling. If the subfloor is new, then there are no shortcuts, however if the subfloor is aged, and one is only repairing the surface prior to tiling, then instead of repairing the surface with a standard cement screed such as Alcolin Z100, one could use a rapid setting self levelling screed such as Alcolin Z101, or a rapid set patching cement such as Alcolin Anchoring and Patching Cement. These products would allow for tiling between 4-5 hours after application.

13. **I have a concrete floor which required refurbishment for an industrial application. The final finish must be smooth enough to receive epoxy floor paint. What would you advise?**

Mechanically prepare the concrete using contained shot blasting equipment to provide a sound contaminant and dust-free concrete surface. Check the surface for rising damp. (May require damp proofing treatment). Repair any damaged areas such as cracks or deep crevices in the concrete base using Alcolin Rapid Set Anchoring and Patching Cement. Once the surface conditions have been met, prime the prepared concrete with a scratch coat made of either Alcolin Permo-Key / Alcolin Latex Key or Alcolin Permobond mixed with sand and cement using a block brush to a thickness of approximately 1-2mm, and allow to dry. We recommend the used of our high performance self levelling screed, Alcolin Z101 for all heavy duty applications, such as this one. Alcolin Z101 must be applied as per instructions to a minimum thickness of 5mm but not exceeding 10mm. After 24 hours, check the moisture of the screed using a moisture meter to ensure that the floor is dry enough to accept the epoxy coating. Note if the moisture level is too high in the screed, the epoxy could lift. Apply the epoxy paint as per manufacturer's instructions.

14. **How do I know if my concrete floor is dry enough?**

Usually a subfloor should be dry enough if it has aged a minimum of 3 – 4 weeks. The best way to check moisture content is with a moisture meter. The concrete is deemed dry enough when the moisture content does not exceed 5.5%. Another cruder test method is to add several drops of a 3% phenolphthalein solution in some alcohol at various spots on the slab. If a red colour develops in a few minutes, the slab is too wet to begin installation of the finished flooring system. Another crude method is to seal a plastic sheet of approximately 460mm x 460mm dimension, 0.1mm thick onto the concrete using tape. After 16 hours, the sheet is removed and the area inspected for evidence of moisture.

15. I have an existing tiled floor that needs to be retiled with ceramic tiles. How do I go about doing this job, and as the area is in regular use we need to use a rapid set adhesive that will allow for early foot traffic on the floor?

Remove all the existing floor tiles and as much of the old tile adhesive as possible by means of mechanical scraping. Ensure that the newly exposed surface is free from dust and other contaminants. Check the surface for rising damp. (May require damp proofing treatment). Repair any deep cracks or imperfections with Alcolin Rapid Set Anchoring and Patching Cement. Once the surface conditions have been met, prime the surface with a scratch coat made of either Alcolin Permo-Key / Alcolin Latex Key or Alcolin Permobond mixed with sand and cement using a block brush to a thickness of approximately 1-2mm, and allow to dry.

If the surface is in relatively good condition it may be tiled using a 10x10mm notched trowel and Alcolin Rapid Set P301 Ceramic Tile Adhesive. Alcolin Rapid Set P301 Ceramic Tile Adhesive will set in only 4hrs after which it may be grouted using Alcolin Grouts.

If the surface is too irregular it must first be screeded with Alcolin Rapid Set Z101 Self Levelling Screed (sets in 4hrs) to a depth of 3-10mm to obtain a smooth level surface. This is then followed by the tiling process using Alcolin Rapid Set P301 Ceramic Tile Adhesive (4hrs setting time). This means that it is now possible to screed and tile in just 8-hours. Grout using one of the Alcolin Grout colours.

16. My garage floor is uneven and is contaminated with isolated patches of oil. What would you recommend to smooth and level the floor?

Prepare a 5% solution of caustic soda mixed with water, then add some household dishwashing liquid to this mix and stir well. Make sure that you are wearing gloves and suitable eye protection before attempting the above operation. Caustic soda will burn unprotected skin. Pour this mix onto the oil-contaminated areas and scrub well with a hard broom to remove the grease, oil, dirt etc. Rinse down with clean water, repeat operation if necessary. Allow to dry. Once the surface is in a clean condition, prime the surface with a scratch coat made of either Alcolin Permo-Key / Alcolin Latex Key or Alcolin Permobond mixed with sand and cement using a block brush to a thickness of approximately 1-2mm, and allow to dry. Screed the surface with Alcolin Z100 or Alcolin Rapid Set Z101 self-levelling screed to a depth of 4-6mm to obtain a smooth level surface. Note: that for severe oil contamination, these will require professional attention using specialist techniques to remedy the situation prior to screeding.

17. Can I use salt water to mix into my mortar / cement based product?

Definitely not as the salt will negatively affect all aspects of performance.

18. Can borehole water be used to mix into mortar / cement based product?

The amount of water in a mortar is relatively small compared with the other ingredients. This means that the concentration of any contaminants in water should have to be very high to have any marked effect. Most natural waters in SA do not have high concentrations and are perfectly satisfactory for use as mixing water. A general rule of thumb is that if water is drinkable it is suitable for mortar or concrete. The exception to this is the presence of sugar in water that affects the setting time of mortar or concrete adversely. If the water is not drinkable, have it tested, as it may still be usable. The best way to test if water is suitable is to make cubes with the suspected water and compare results of compressive strength against good water. For addition into more technical products, such as Alcolin Z101 and Alcolin P301 where flow or setting characteristics is important, we do not recommend borehole water.

19. What are expansion joints and where should these be installed?

Stresses build up in a building due to structural stresses. Expansion joints must be incorporated into the building design by the architects and structural engineers to compensate for these stresses. When laying a screed, the expansion joints of a screed must coincide with the expansion joints of the building. Where these are not present, you should incorporate expansion joints every 5m in both the horizontal and vertical directions. Failing to incorporate them will cause stresses to build up in the screed which will cause delamination and cracking of the screed.

These expansion joints must either be left open or be grouted with an elastomeric compound such as a neutral curing silicone sealant or polyurethane sealant. If using a joint sealant, only the sides of the joint must be bonded – a bond to the base of the joint causes stress on the joint sealant reducing its performance.