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Altro Grip™ 4.5mm slip-resistant

Solvent-free, decorative, epoxy screed
Technical and installation data sheet

September 2016

Product description

FeRFA type 4

Altro Grip 4.5mm slip-resistant variant is multi-layer epoxy resin system providing a slip-resistant decorative appearance. It can be used in medium to heavy duty areas where there is an increased risk of slipping.

The variant comprises Altro Screed 3mm in conjunction with an Altro Grip aggregate and clear finishing seal coats.

Standard colours

Altro Grip 4.5mm slip-resistant variant is available in 18 multi-coloured decorative finishes.

Bespoke colour systems require a minimum lead time and acceptance of a sample.

In common with other epoxy resin finishes, pale colours may show some cosmetic discolouration on exposure to UV light.

Typical areas of use

- Food preparation areas
- Wet production areas
- Wash down areas
- Sports changing rooms
- Showers

Advantages

- Attractive colour range
- Good slip resistance
- Good chemical and stain resistance
- Fully bonded to the substrate
- Medium impact and excellent abrasion resistance
- Provides seamless floor finish (substrate joints must be cut through)

Sustainability

Altro's steps to sustainability program seeks to optimise our performance with respect to the planet's resources. Please refer to www.altro.com for further information.

Chemical resistance

Altro Grip 4.5mm slip-resistance affords resistance to a range of commonly used chemicals. However, premature or prolonged contact with chemicals (including water) during the curing process may give rise to discolouration, staining and variation in gloss. In all cases of chemical spillage, it is essential that the spillage be immediately removed and the surface washed down with clean water, removing water by wet vacuum after operation. Although some chemicals may cause discolouration, this may not affect the durability and integrity of the resin screed. Please refer to Altro and FeRFA Guidance Note No.3 for further information.

Typical physical properties

Speed of cure	Light foot traffic Full cure	24 hours @ 20°C 7 days @ 20°C
Application temperature		10°C to 25°C
Usable working life		30 minutes @ 20°C
Intercoat period		18 to 24 hours @ 20°C
Bond strength	EN 4264	B3,5
Slip resistance	BS 7976 PTV	≥50
	DIN 51097	B

Packaging

Altro Grip 4.5mm slip-resistant variant comprises

Altro Screed 3mm variant is available in a 23kg three-part composite pack.

Altro Screed standard seal coat, clear is available in a 5.3kg two-part composite pack.

Altro Grip aggregate 0.4-0.8mm is available in a 20kg bag

Altro Screed standard seal coat, clear non-thixotropic 5.3kg is available in a two-part composite pack.

Coverage

Altro Screed 3mm variant 3.7m²/23kg

Altro Screed standard seal coat, clear, 1st coat 24m²/5.3kg

Altro Grip aggregate 0.4-0.8mm 10m²/20kg

Altro Screed standard seal coat, clear non-thixotropic 1st coat 19m²/5.3kg

Altro Screed standard seal coat, clear non-thixotropic 2nd coat 39m²/5.3kg

Material usage is dependent upon temperature, surface profile and porosity; the stated coverage rates should be referred to for guidance only and cannot be relied upon to determine exact quantities. Priming of porous substrates will improve the coverage rates. Pale colours may require additional coats to cover a dark substrate.

Although stringent quality assurance processes are employed, when colour consistency is essential a single batch should be used where possible.

Storage

Ensure that the product is received in good order and store in a dry, frost free environment, ideally between 15°C and 20°C for at least three days before laying. Excessively high and low storage temperatures will affect the laying performance of the product.

Suitable substrates

Altro Grip may be applied to a variety of substrates including, but not limited to, concrete, polymer-modified cementitious screeds, terrazzo, 25mm marine-grade plywood (consult Altro for further guidance). For all proprietary subfloor systems refer to the manufacturer for recommendations and seek further guidance from Altro. FeRFA, The Resin Federation, does not recommend Calcium Sulphate, Anhydrite or Hemi-hydrate screeds for overlayment with synthetic resin surfaces.

Substrate requirements

Substrates should be dry, structurally sound and free from contamination, friable materials or laitance which may affect either the adhesion or penetration of the resin system. All residues of old paint coatings and dust must be removed. The substrates should achieve 26N/mm² compressive strength (BS EN 12504-2) and surface tensile strength 1.5N/mm² (BS EN 13892-8). Substrates must include an integral effective damp-proof membrane and contain residual moisture not greater than 5% by weight (75% R.H.) to BS 8203 (see Altro Proof™ for installations above 75% R.H.). Because of their method of application, synthetic resin floorings such as Altro Grip will inevitably follow the profile of the underlying substrate. This will affect the appearance and wear. Variable porosity and profile of the substrate will affect both coverage rates and final appearance. Please consult Altro or the FeRFA Guide to the Specification and Application of Synthetic Resin Flooring for further information.

Substrate preparation

Surface preparation is the most vital aspect of resin flooring application. Inadequate preparation will lead to loss of adhesion and failure. The substrate in question will dictate the method of preparation. In the case of a concrete floor, preparation by dust enclosed diamond floor grinder may be appropriate, or if of a sufficient area for economic reasons, should be lightly shot blasted to leave a textured surface free from contamination.

If the floor has been treated with a cementitious surface improver, then the surface should be prepared in accordance with the manufacturer's recommendations, or abraded with an STR machine followed by thorough vacuuming. Treatment of local repairs such as cracks and holes, improvement or modification of levels and removal of high spots, should be undertaken prior to the flooring installation. Please consult Altro or FeRFA's Guide to the Specification and Application of Synthetic Resin Flooring for further guidance.

Planning

Before proceeding with the installation, careful consideration should determine the best way of installing the Altro system. Efforts should be made to minimise day joints and optimise the open time of the product (i.e. minimise the distance between mixing and laying). It is best to also consider the effect of external influences on the final installation (i.e. direction of light from windows etc.). Time spent at this stage will be invaluable towards the success of your installation.

The Altro Grip floor system is designed to be laid at a nominal 4.5 mm thickness. Altro recommend that stainless steel mixing, laying and application tools are used in this process. Metal transfer from mild steel tools may result in discolouration of the screed which will be unacceptable to your customer. This will be particularly noticeable with pale colours, please contact Altro for further guidance.

Application

The following application guide is based on laboratory and simulated site conditions. However, when installations conditions differ appreciably from those detailed by Altro, the performance characteristics of both mixing and laying may not be as expected. To achieve the best results at all times please endeavour to establish the correct conditions which in turn will allow the materials to be laid effectively, and meet your customer's expectations.

Installation conditions

Apply in well ventilated areas. Both the slab and air temperature should be between 10°C and 25°C. It is not advisable to mix and lay epoxy resin products outside of that range. Ambient conditions should be maintained at least 3°C above dew point or below 75% R.H. during the initial stages of cure. At site temperatures below 10°C cure times will be substantially increased unless some form of external heating is used. It must be recognised that the concrete slab temperature will generally be lower than the air temperature, often as much as 10°C, and this will govern the rate of cure. As the resin flooring cures, in condensing conditions moisture vapour may condense onto the surface and cause 'blooming', a permanent clouding of the surface. Cold, wet or humid conditions, and limited air-flow, can result in condensation on the part-cured floor. The workability, open-time, cure development and return to traffic will be significantly affected by ambient conditions.

Mixing equipment

- Slow speed drill (200-500rpm), such as MM17 *
- Mixing paddle, such as MR2 60B *
- Forced action mixer (stainless blades), such as RM65 *
- Stainless mixing vessel, such as RM65 drum *

* All tool number references relate to Refina Ltd 01202 632 270

Priming the substrate

In order to achieve a uniform finish, prevent bubbles and maximise substrate adhesion, primer must be used. An Altro primer should be selected which is suited to the installation, and appropriate for the nature and moisture content of the substrate (seek further guidance from Altro). The appropriate Altro primer should be applied in accordance with the product data sheet. Whilst the primer is wet, lightly seed with a sharp, medium size kiln-dried aggregate 0.7 to 1.2mm quartz in colour to match the Altro Screed 3mm to be applied and leave to cure. Ensure that the substrate is well sealed and that all hungry areas are addressed before proceeding to install the system. If the overcoating time period for the primer is exceeded, the surface should be lightly abraded and vacuumed before further coats are applied.

Product installation

Using a slow speed drill and paddle thoroughly mix together the base and hardener. Transfer the mixed base and hardener to another bucket and mix for a further minute. Ineffective mixing can lead to yellow staining in the screed. Pour all the mixed base and hardener contents into a suitable clean polypropylene or stainless steel mixing vessel. The aggregate should be added gradually into the pre-mixed binder, whilst continuing the mixing action, and mix for a further 2-3 minutes in the forced action mixer. Excessively vigorous mixing should be avoided as this can lead to undesirable air entrainment. Care should be taken to ensure that any material adhering to the sides, bottom and corners of the mixer is thoroughly blended in. If the mixing area is not adjacent to the laying area the time required to transfer the mixed material will reduce the open installation time. **Remember to always use the correct PPE.**

Using a clean stainless steel trowel or sledge apply the Altro Screed 3mm standard system to the prepared primed substrate. Ensure that the system is being laid to the desired depth (3mm) and fully closed off to leave a uniform compact surface. Because the flooring is hand finished, there may be slight variations in surface appearance resulting from the trowelling. A skilled operative will endeavour to keep these to a minimum so that the overall appearance and performance of the flooring will not be affected. Allow the screed to cure sufficiently to receive light foot traffic. This is approximately 24 hours at 20°C or 48 hours at 12°C. Always use site overshoes to protect the screed.

After the Altro Screed 3mm has cured Altro Screed standard seal coat is applied as a broadcast coat. Pour the contents of the hardener into the base unit, and using a slow speed drill and paddle thoroughly mix the contents for 2 minutes. Apply the seal coat to the screed using a dense polypropylene foam squeegee, taking time to work the seal into the surface, ensuring that all porous areas of quartz are fully satisfied. Ensure the resin left on the surface is uniform ready to accept the broadcast aggregate. Into the wet resin the Grip aggregate should be broadcast at 2kg/m² or until the surface is fully blinded.

Care should be taken not to throw the aggregate too close to the surface of the resin system in order to avoid unsightly clumping of the aggregate on the surface. The system must be sealed with two coats of Altro Screed standard seal coat, clear, non-thixotropic. Ensure the surface of the resin screed is contamination free and all loose aggregate removed and thoroughly vacuumed as necessary. Pour the contents of the hardener into the base unit, and using a slow speed drill and paddle thoroughly mix the contents for 2 minutes. Apply the seal coat to the screed from a paint tray taking time to work the seal into the surface, ensuring that all porous areas of quartz are fully satisfied. Roll the surface with a short nap synthetic roller. Failure to remove excess may affect the slip resistance and appearance of the finished system.

Leave to cure for not longer than 24 hours at 20°C. Mix and roller apply the finishing seal coat from a paint tray to leave a uniform closed film across the floor where all excess is removed. Failure to remove excess may affect the slip resistance and appearance of the finished system. Do not flood seal the Altro Grip variant as this can cause staining or discolouration, in the seal system.

Joints

The spacing of movement joints must be determined by the design of the subfloor. All live movement joints in the subfloor must be continued through the resin flooring, failure to do so will result in live cracks being reflected through the resin finish. In all instances the type and positioning of movement joints should be agreed at the design stage between all parties concerned. Please refer to Altro or FeRFA's Guide to the Specification and Application of Synthetic Resin Systems for further guidance. All joints should be filled with Altro Expand flexible jointing compound. Please see data sheet for further information.

Protection

Whilst of an extremely durable nature these floor systems must be thoroughly protected from the rigours and abuse that exist during the ongoing contractual works. The resin floor should reach full chemical cure in 7 days at 20°C. Untreated felt paper will suffice as protection from light Traffic. However, if protection is required from other trades then the following protection option should be considered. Where heavier access is required then a more suitable medium to take the loadings, such as shuttering ply or Correx by Cordek should be placed on top of the untreated felt paper. The resin system should have cured for at least 48 hours prior to placing the protection. No polyethylene sheets, linseed-treated hardboard, print or dyed card should be placed in contact with the resin surface. All joints in the protection medium should be taped, and all accidental spillages should be recovered immediately by removal and reinstatement of the protection. Damage will occur if the guidance is not followed.

Cleaning (during installation)

All tools and equipment should be regularly cleaned using Altro Solve™ EP to reduce build up and maintain the quality of the installation. Avoid contamination of the resin surface with solvent as this may cause localised bloom to occur. **Ensure that the correct PPE is worn at all times.**

Disposal

Due diligence must be adopted if accidental spillages occur. Recover using absorbent granules, transferring into a suitably marked container. Disposal of all empty containers and accidental spillages should be in accordance with the local waste disposal authority.

Cleaning guidance

The texture of the surface will require mechanised cleaning with an Altro Unipad™ or the use of a long-handled scrubbing brush; mop cleaning will not be effective. Steam cleaners and / or hot pressure cleaners should not be used on the floor or walls. A cold/ambient pressure washer may be used if required, but the pressure should not exceed 1400psi. Warm water will offer improved cleaning, but the water temperature should not exceed 60°C.

- Sweep or vacuum the floor to remove debris
- For normal cleaning, dilute an alkaline detergent such, as Altro Clean 44 or similar, by 1:40 in clean water
- Alternatively, dilute by 1:10 for infrequent heavy cleaning
- Liberally apply the water and detergent solution to the floor, scrubbing with a deck scrubber or slow-speed (< 400rpm) scrubbing machine and Altro UniPad or similar
- Pay particular attention to areas where residues may accumulate, such as internal corners of perimeter coves and around columns etc
- If possible, allow the detergent solution to remain on the floor for several minutes to break down deposits, but not sufficiently long to allow the solution to evaporate
- Remove the solution by wet vacuum recovery and follow this with a fresh water rinse, or rinse the solution into drains if permissible
- It is important that all detergent residue is removed from the textured surface of the floor. Detergent may become slippery which affects safety, or sticky which attracts and holds more dirt

Altro Clean 44 and Altro Unipads are available through the Resins Sales Desk.

Please obtain the correct material safety data sheets from Altro prior to beginning your installation.

To order E-mail ResinSalesDesk@altro.com

Call 01300 320620

Fax 01300 321122

NOTE: "Altro Ltd" ("Altro") endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, where Altro has no control over the selection of its products for particular applications, it is important that any prospective customer, user or specifier, satisfies him / herself that the product is suitable for the intended application. In this process, due regard should be taken of the nature and composition of the background / base and the ambient conditions both at the time of laying / applying / installing / curing of the material and when the completed work is to be brought into use.

However, as site conditions and the execution of the work are beyond our control, we accept no resultant liability.

Altro's policy is one of continuous research and development and we reserve the right to update our products and information at any time without prior notice.

If you'd like any more information or guidance please get in touch, we're here to help.

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