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# Altro Screed™ 4mm standard, Altro Screed™ 4mm slip-resistant

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

September 2016

## Product description FeRFA 6

**Altro Screed 4mm** is a three-part solvent-free epoxy resin system, comprising clear resin and coloured graded aggregates. Altro Screed provides a moderate level of chemical and impact resistance. It is suitable for use in medium to heavy duty areas. For areas where there is risk of a slip the Altro Screed 4mm slip-resistant variant should be used\*.

A range of seal coats offer the flexibility to design the cure time and / or slip resistance required when in service. The seals become an integral part of the finished Altro epoxy screed.

**Altro Screed standard seal coat** is a solvent-free clear epoxy seal, which seals the surface for hygiene and ease of cleaning, but does not provide an increase in the slip-resistance offered by the aggregate within the Altro Screed.

**Altro Screed slip-resistant Rapicure seal coat** is a clear solvent-free epoxy, which offers the performance of Altro Screed standard seal coat, but with reduced cure-times and more rapid acquisition of resistance to spillage for an enhanced return-to-service time, with the added benefit of improved slip-resistance.

**Altro Screed standard Rapicure seal coat** is a clear solvent-free epoxy, which offers the performance of Altro Screed standard seal coat, but with reduced cure-times and more rapid acquisition of resistance to spillage for an enhanced return-to-service time.

**Altro Screed slip-resistant seal coat** offers the performance of Altro Screed standard seal coat with the added benefit of improved slip resistance.

**Altro Seal water based matt** is a clear polyurethane seal, applied in a tight roller-coat to provide a matt finish to epoxy screeds, offering a more natural appearance and diffusing some light reflections which highlight slight imperfections or undulations.

Please note this product should not be applied onto heavily textured surfaces).

Altro offer a range of seals and textured systems to meet with a variety of conditions. Please talk to Altro Technical services regarding the requirements of your installation.

Please see the technical and installation data sheet for Altro clear seals for epoxy screeds.

## Standard colours

Altro Screed 4mm variants are available in a range of colours and natural colour options evoking tones of polished concrete and stone.

## Typical areas of use

- Reception areas
- Corridors / walkways
- Retail offices
- Laboratories
- Packing areas
- Dining / canteen areas\*
- PE changing areas\*
- Retail and entrance areas\*

## Advantages

- Attractive colour range
- Can be laid to falls and coveable
- Ease of cleaning Fully bonded to the substrate 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](http://www.altro.com) for further information.

## Chemical resistance

Altro Screed 4mm variants offer resistance to a range of commonly used chemicals. However, premature 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

Seal coat option	Altro Screed standard seal coat	Altro Screed slip-resistant seal coat	Altro Screed standard Rapicure seal coat	Altro Screed slip-resistant Rapicure seal coat
Slip resistance DIN 51130 Shoes / oil	R9	R10	R9	R10
Pendulum test value TRRL Slider 96	Moderate potential for slip	Low potential for slip $\geq$ 40	Moderate potential for slip	Low potential for slip $\geq$ 40
Over-coating time	24 hours @20°C 48 hours @12°C	24 hours @20°C 48 hours @12°C	6-8 hours >20°C 12-16 hours @ 12°C	6-8 hours >20°C 12-16 hours @ 12°C
Light traffic	24 hours @20°C 48 hours @12°C	24 hours @20°C 48 hours @12°C	24 hours > 20°C 48 hours >12°C	24 hours > 20°C 48 hours >12°C
Full service	7 days @20°C	7 days @20°C	5 days @ 20°C	5 days @ 20°C

Altro Screed slip-resistant seal coats are not suitable for use in bare foot shower areas.

## Packaging

Altro Screed is available in a three-part composite pack, 23kg or 28kg depending on colourway used.

## Coverage

Altro Screed 4mm, Moonstone, Ivory Soapstone, White Yorkstone, Selenite, Bathstone, Silver Pumice, Desert Fossilstone, Chicago Brownstone, Blue Basalt  
3.4m<sup>2</sup> / 28kg unit @ 4mm

Altro Screed 4mm, Opal, Alcazar, Lapis, Turquoise, Almas, Kyanite, Onyx, Iona, Pyrite, Ula, Rachele, Greta, Pearl, Narooma, Amber, Giza, Peketo, Citrine, Yakootah, Jumaana, Chrystal, Moonstone, Cara, Soraya, Jola, Tourmaline  
2.8m<sup>2</sup> / 23kg unit @ 4mm

### Altro Screed standard seal coat options

Altro Screed standard seal coat

1st coat 24m<sup>2</sup> per 5.3kg unit

2nd coat 39m<sup>2</sup> per 5.3kg unit

or

Altro Screed standard Rapicure seal coat

1st coat 9m<sup>2</sup> per 2.3kg unit

2nd coat 18m<sup>2</sup> per 2.3kg unit

### Altro Screed slip-resistant seal coat options

Altro Screed slip resistant Rapicure seal coat

1st coat 7.5m<sup>2</sup> per 3kg unit

2nd coat 30m<sup>2</sup> per 3kg unit

Optional matt coating applied after the Altro Screed seal coatings above.

Altro Seal water based matt is an optional coating that can be applied after the Altro Screed seal coats above. It should not be applied directly the epoxy screed.) Single coat 100m<sup>2</sup> per 5kg unit.

Material usage is dependent upon temperature, surface profile and porosity; stated coverage rates should be referred to for guidance only and cannot be relied upon to determine exact quantities. Although stringent quality assurance processes are employed, when colour consistency is required, a single batch should be used.

**We cannot guarantee batch matches between different batches of aggregate. Necessary transitions between batches should be planned for non-conspicuous areas.**

Dark coloured Altro Screed variants will highlight any defects such as roller lines and scratches.

## 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. It is important to maintain the aggregate temperature during storage. Low temperature in the aggregate will adversely affect the product application. Excessively high and low storage temperatures will affect the laying performance of the product.

## Suitable substrates

Altro Screed 4mm 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. Substrates to achieve 26N/mm<sup>2</sup> compressive strength (BS EN 12504-2) and surface tensile strength 1.5N/mm<sup>2</sup> (BS EN 13892-8). Substrates must include an effective damp proof membrane and contain residual moisture not greater than 5% by weight (75% R.H.) to BS 8203. Thin-bed synthetic resin systems follow the surface of the substrate, so it is essential that the surface regularity of flatness conforms to or exceeds BS 8204.2 class SR2 (+/- 5mm under a 2 metre straight edge). Any deviation from this may require a surface improver to be applied which must be suitable to receive an epoxy resin overlay. Please consult Altro or 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 Screed floor system is designed to be laid at a nominal 4mm 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 customers' expectations.

## Installation conditions

Apply in well ventilated areas. Both the slab and air temperature should be greater than 10°C and rising, up to 25°C. It is not advisable to mix and lay epoxy resin products outside the range 10°C to 25°C. 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 should 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 (preferably 0.7 to 1.2mm quartz in colour to match the Altro Screed 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. 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. A single paddle Danes type mixer is unsuitable for use with this product. 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 to the prepared primed substrate. Ensure that the system is being laid to the desired depth (4mm) 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. The system must be sealed with two coats of Altro Screed seal. Ensure the surface of the resin screed is contamination free and has been de-nibbed and thoroughly vacuumed as necessary.

### Altro Screed standard seal coat and Altro Screed standard Rapicure seal coat

Pour the contents of the hardener into the base unit, and using a slow speed drill and paddle thoroughly mix the contents for two minutes. To ensure thorough mixing pour the materials into another container and mix again for a further minute. Ineffective mixing can lead to yellow staining in the seal coat. 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 screed are fully satisfied. Roll the surface with a short nap synthetic roller and leave to cure for not longer than 24 hours at 20°C. Mix and roller apply the finishing seal coat grouting into the screed using a dense polypropylene foam squeegee and roll the surface as before 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.

## **Altro Screed slip-resistant seal coat and Altro Screed slip-resistant Rapicure seal coat**

Pour the contents of the hardener into the base unit and using a slow speed drill and paddle thoroughly mix the contents for two minutes. To ensure thorough mixing pour the materials into another container and mix again for a further minute. Ineffective mixing can lead to yellow staining in the seal coat. Add the aggregate component. Mix for another minute until uniform. Using a grouting float, grout the Altro Screed slip-resistant seal coat into the surface of the Altro Screed 4mm Ensure that all porous areas of quartz are fully satisfied. Remove any excess material build-up on the surface. Pre-wet a short pile polyester or nylon roller. Back roller the surface to form an even continuous coating. Leave to cure for not longer than 18 hours at 20°C. Mix and apply a tight second coat as above to leave an even closed film across the floor. Always observe the coverage rates to ensure an even slip resistance of the finished system.

Do not flood seal the Altro Screed 4mm product as this can cause staining or discolouration, in the seal system. To achieve a cosmetic matt finish, the application of a single coat of Altro Seal water based matt can be applied not more than 24 hours at 20°C following the final seal. Pour the contents of the hardener into the base unit, and thoroughly mix using a slow speed drill and paddle for two minutes making sure to incorporate all the matting agent in the base. Apply a very thin coat using a short nap synthetic roller applying the product to the floor from a paint tray. Heavy application of this seal will result in an opaque appearance of the finished floor, therefore care is required in its application. Ensure good air-flow and ventilation to assist with cure. Enough time should be given to allow the Altro Seal water based matt to reach its full chemical cure. Physical drying of the surface alone is not indicative of the full cure properties including wear and chemical resistance.

## **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 Altro Expand datasheet 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 to 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

Optimum slip resistance and appearance can only be maintained with regular cleaning. The texture of the surface will require mechanised cleaning; 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.

Entrance matting will reduce cleaning requirements and should also enhance the longevity of the floor, when combined with correct maintenance.

- 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 1:20 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

Please refer to material safety data sheets prior to installation.

Always wear correct PPE whilst installing Altro products.

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**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.

tel: 01462 707604 fax: 01462 707515

email: [enquiries@altro.com](mailto:enquiries@altro.com) or explore [www.altro.com](http://www.altro.com)