Altro Crete™ 6mm slip-resistant, Altro Crete™ 8mm slip-resistant

Heavy duty polyurethane floor screed
Technical and installation data sheet

January 2019

Product description
FeRFA type 8

As part of the Altro Crete range **Altro Crete 6mm slip-resistant** and **Altro Crete 8mm slip-resistant** variants provide durability, slip-resistance and excellent resistance to a wide range of chemicals including organic acids found in food stuffs. It is coloured high-build polyurethane and provides a durable and very safe monolithic floor finish ideal for applications in the industrial food and beverage, pharmaceutical and chemical industry.

Standard colours

Altro Crete 6mm slip-resistant and Altro Crete 8mm slip-resistant variants are available in a range of 6 standard colours.

Typical areas of use

Altro Crete is designed for heavy duty areas of potential spillage, increased temperature range, (-40°C to +120°C at 8mm), and offers excellent resistance to impact or abrasion.

- Food processing
- Bakeries
- Dairies
- Breweries
- Abattoirs / meat processing plants
- Chemical processing
- Commercial kitchens
- Appliance bays
- Food and drink preparation, production and storage
- Chemical and pharmaceutical production and storage

Advantages

- Excellent resistance to aggressive chemicals
- HACCP approved
- Does not have the potential to taint food when stored in close proximity after 24 hours cure at 20°C
- Profiled slip resistance providing low potential for slip
- Meets the requirements of Regulation (EC) No 852/2004 on the hygiene of foodstuffs
- Good cleanability
- Withstands steam cleaning (when installed at 8mm)
- Impervious / seamless (hygienic)

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 Crete offers resistance to a range of commonly used chemicals, including organic food acids and alcohols, and is designed for industrial food and drink manufacturing areas. However, premature or prolonged contact with liquids and / or 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. Altro Crete is commonly used in environments where it is exposed to aggressive chemicals, often at elevated temperatures. In these circumstances it is possible for the surface to become cosmetically bleached without affecting the durability of the floor finish. Please refer to Altro and FeRFA Guidance Note No.3 for further information.

Typical physical properties

Slip resistance	BS7976 PTV ≥50
Usable working life	20-25 minutes @ 20°C
Speed of cure	Light foot traffic – 18-24 hours at 20°C Full chemical cure – 7 days at 20°C
Service temperature	-40°C to 120°C at 8mm -40°C to 60°C at 6mm
Bond strength EN 4624	B3,5
Impact strength ISO 6272	IR2
Wear resistance EN 13892-4	AR 0.5
Compressive strength BS6319 Part 2	49 MPa
Flexural strength ASTM D790	12 MPa
Tensile strength BS6319 Part 7	5.5 MPa
Reaction to fire classification EN 13501-1 + A1	Bfl – s1

Packaging

Altro Crete 6mm slip-resistant and Altro Crete 8mm slip-resistant variants are available in a 29.65kg, four-part composite pack.

A separate premeasured pigment pack is available for ease of mixing and use.

Coverage

Altro Crete primer 20m^2 per 4.7kg unit.

Altro Crete 6mm slip-resistant 2.2m^2 per 29.65kg unit.

Altro Crete 8mm slip-resistant 1.6m^2 per 29.65g 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. Necessary transitions between batches should be planned for non- conspicuous areas. Exposure to Ultra Violet light sources will cause a cosmetic yellow discolouration.

This effect will be most pronounced in pale colours, and blue / grey shades (refer to Altro).

Storage

Ensure that the product is received in good condition 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 Crete variants 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-hydrite 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 should achieve 30N/mm² compressive strength (BS EN 12504) and surface tensile strength 1.5N/mm² (BS EN 13892). 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 a resin overlay and meet the substrate requirements in terms of strength above. 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.

A mechanical rebate should be formed around the perimeter of the installation to avoid weakness at the most vulnerable zones, evenly distributing loads and stresses and preventing ingress of aggressive media to the subfloor and bond line. A chase should be provided at all peripheral edges, parallel to expansion joints, at thresholds, feather edges, at free edges of a cove, where dissimilar flooring materials join and at day joints. This is normally formed by casting a chase when the concrete is laid or by cutting using a wet cut concrete saw.

The preferred dimensions of the rebate are twice the thickness of the screed in depth and twice the thickness of the screed in width. Anchorage rebates should be provided as close to the perimeter as is practicable. In general radial corners are preferred in order to prevent the build-up of point induced stresses. 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. 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 installation 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 polyurethane resin products outside of this 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. Avoid using heating sources that give rise to high levels of humidity, such as those burning fossil fuels.

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 substrates can give rise to pinholes through the uncured resin. In unheated areas raise the substrate temperature prior to application and maintain the temperature of the substrate during application. (Avoid using heating sources that give rise to high levels of humidity).

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

When the surface quality of the finished Altro Crete variant is important for hygiene or aesthetic reasons, a primer should be used. Priming helps to achieve a uniform finish, prevent bubbles and maximises adhesion.

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).

Altro Crete primer is the recommended primer for Altro Crete systems. Whilst the primer is wet, lightly seed with a single size Altro Grip™ aggregate (0.7 to 1.2mm quartz) at a rate of 100g/m^2 and leave to cure. Ensure that the substrate is fully satisfied and sealed and that all hungry areas are addressed before proceeding to install the system. If the over-coating 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, hardener and colour pack for 30 seconds. Pour all the mixed binder contents into the forced action 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. Incorrect mixing, either too short or too long may affect the application and cause imperfections in the floor finish such as pinholes or unevenness. Variations in the mixing time may produce variations in the colour or surface texture. 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. Using a clean stainless steel trowel or sledge apply the Altro Crete variant to the prepared primed substrate. Ensure that the system is being laid to the desired depth and fully closed off to leave a uniform compact surface. The surface will need to be lightly back rolled once during the application to ensure a uniform finish

Avoid excessive treatment that will affect slip resistance. A short nap or foam roller should be used and replacements available to ensure that an accumulation of resin on the roller does not cause clusters of surface aggregate. Hand finished trowelling may result in slight variations in surface appearance. 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.

Note: Ambient and slab temperatures will dramatically affect the application and working time of this product.

Storage of the material units are also critical to the laying performance and should be equilibrated to the installation environment before use.

Coving detail

All coving detail where chemical resistance is required should be installed using the Altro Cove™ product, which is specifically designed to be used in conjunction with the Altro Crete variants. This product does not have the same surface texture and appearance as the floor system and should be identified to the end user. Where a solid uniform colour is desired a coating of Altro Crete top coat may be used. Please seek further guidance from Altro.

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. In all instances the type and positioning of movement joints should be agreed at the design stage between all parties concerned. It is advisable to form joints where movement is likely to occur as a result of external stresses, (including thermal, vibrational and mechanical) e.g. load bearing columns, plinth bases for machinery, oven and cold rooms etc. 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. Apply Altro Prime™ to all contact surfaces.

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 system if the above 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. **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 may be used on the 8mm variant. 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 1:10 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 refer to the most up-to-date technical documents, including safety data sheets, for the Altro resin variant prior to beginning your installation.

To order

E-mail ResinSalesDesk@altro.com

Call 01300 320620

Fax 01300 321122

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(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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