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Altro Seal™ standard, Altro Seal™ slip-resistant and Altro Seal™ vertical

UV stable polyurethane floor coating

Nominal thickness 180 microns

Technical and installation data sheet

September 2016

Product description

FeRFA type 1

Altro Seal is a two pack; light stable solvent based polyurethane floor coating. Altro Seal provides a surface that has good abrasion, chemical and stain resistance. It is available in a wide range of colours or clear, and is easy to apply and fast curing. **Altro Seal vertical** can be applied on surfaces such as coving and walls. It can also be used as a final seal coat to give extra chemical resistance to epoxy resin systems.

Altro Seal slip-resistant variant provides a degree of slip resistance through the incorporation of a micaceous mineral that lightly textures the surface.

Standard colours

Available in 26 standard colours and clear with options for bespoke colours.

Non standard colours

Safety Yellow, Safety Red.

Safety Red, Safety Yellow and Black are intended for line marking and small areas of demarcation only. Bright lighting and dark colours in particular black will highlight any defects such as roller lines scratches and marring. For safety colours, light or vibrant coloured coatings, a white undercoat should be used and additional coats may be required.

Safety Red, Safety Yellow and white are not included in Altro resins standard colour range. Bespoke non-standard colours will be subject to additional lead time and possibly increased cost.

Typical areas of use

- Light duty areas
- Pharmaceutical
- Areas subject to occasional chemical spill
- Craft and design rooms

Advantages

- Easy to apply
- Cost effective
- Good chemical resistance
- Good scuff / abrasion resistance
- Flat silk finish

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 Seal variants offer 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 is 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	24 hours @ 20°C
	Full cure	7 days @ 20°C
Application temperature		10°C to 25°C
Usable working life		30 minutes @ 20°C

Packaging

Altro Seal standard and Altro Seal vertical coloured variants are available in a 5kg, two-part composite pack.

Altro Seal standard and Altro Seal vertical clear variants are available in a 4kg, two-part composite pack.

Altro Seal slip-resistant coloured is available in a 5kg, three-part composite pack.

Coverage

Altro Seal standard coloured and Altro Seal vertical coloured

1st coat 30m² per 5kg unit

2nd coat 40m² per 5kg unit

Altro Seal standard clear and Altro Seal vertical clear

1st coat 25m² per 5kg unit

2nd coat 40m² per 5kg unit

Altro Seal slip-resistant coloured

1st coat 30m² per 5kg unit

2nd coat 35m² 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.

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 Seal 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.

Porous and alkaline substrates including concrete should be primed with Altro Seal gloss single pack. This should be over-coated when touch dry or within 24 hours.

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/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.)

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. The surface profile may be reflected in thinner resin flooring types. This will affect the appearance and wear.

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.

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 to 25°C. It is not advisable to mix and lay polyurethane 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. (Avoid using heating sources that give rise to high levels of humidity). 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 MR3

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

Product installation

Using a slow speed drill and paddle thoroughly mix together the base for 30 seconds. Pour all the hardener into the pre-mixed base and mix for a further 90 seconds. 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.

Pour all the mixed material into a large roller tray, and using a low-loss medium pile synthetic roller, distribute the material evenly and uniformly to fully treat the surface. Begin on the side of the main light source and work away from the light. Finish using a roller in the direction of the light source to ensure that a uniform and even coverage is achieved. The lapping time between units and retouching of the wet finish should be minimised as this may result in roller lines and variations of the finish. The area should not be re-touched after 15 minutes. Roller lines are more evident on porous substrates and at elevated temperatures. Allow the system to cure for a minimum of 18 hours at 20°C, but no longer than 24 hours at 20°C before over-coating. If the over-coating time period is exceeded, the surface should be lightly abraded and vacuumed before further coats are applied.

Ensure good air-flow and ventilation to assist with cure. High temperatures, strong drafts and substrate porosity can affect the lapping time and can cause roller marks.

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. 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 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 loading, 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 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 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.

Ensure that the correct PPE is worn at all times.

Disposal

Due diligence must be adopted if accidental spillages occur. Recover using inert 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. Floors with slip resistance will require mechanical cleaning. Microfibre cleaning systems should be sufficient for routine maintenance of floors with a smooth surface, provided that a suitable detergent/ dosage is used and the microfibre pads are changed with sufficient frequency to ensure their effectiveness.

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

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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