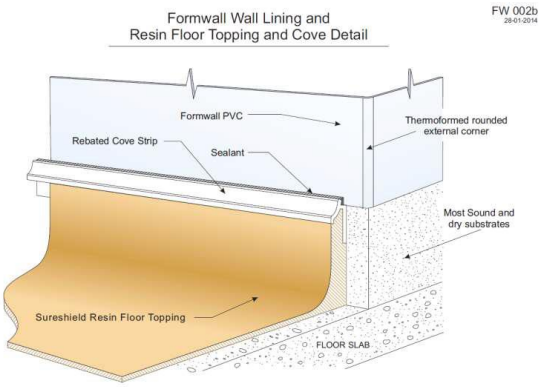
Technical Bulletins

Coving for Resin Floor Systems

allnex resin floor toppings provide excellent concrete and environmental protection, some of these installations are in complex environments where floor to wall coving is required.

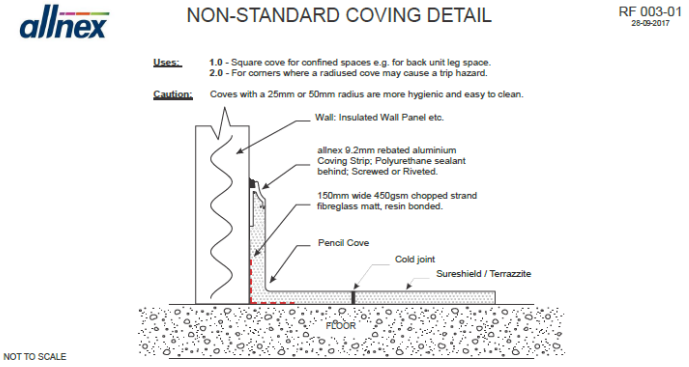
Coving is especially essential when installing resin floor systems in hygienic manufacturing environments, a smooth radiused cove that is hard and fully bonded to the wall and floor will eliminate those internal angle areas that are hard to clean and commonly associated with dirt and bacteria build-up.



- Cove details are installed free hand, designs and sizes can vary to suit the specific requirements and existing site details.

- The transition from the top of the cove to the wall coating or lining must be well designed, very neat, straight and durable.
- In some circumstances it also needs to be waterproofed, for this reason coves can incorporate metal top edge termination strips, or be rebated into the substrate, allnex have a range of details for top edge termination options.

- The cove radius may be varied, 50mm radius coves are common but can be space consuming whereas a 25mm radius cove can be less obtrusive and will accommodates bench furniture better.



- Cove heights may also be varied from 50mm to 400mm to 1m high or full wall height.

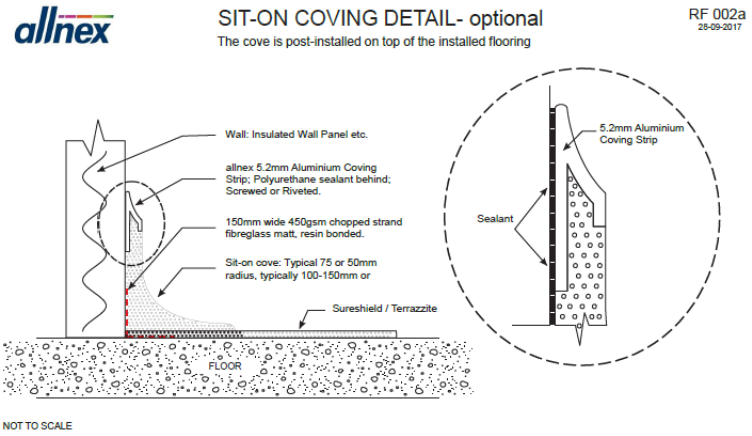
- It is very important that the design of the coving matches the function of the area.

The design of floors and coving in freezers is a good example of this, the excessive movement caused by thermal expansion and contraction that takes place during temperature cycling needs careful consideration prior to any installation, refer to the allnex flooring details document for reference.

- Resin floor coves by their very nature a solid, hard and inflexible, movement in the walling must be allowed for with flexible control joints.

- Coves may be formed prior to the floor, the floor is then installed and a cold joint ensues where the flooring meets the base of the cove, it is very important that this cold joint transition is as smooth and seamless as possible.
  When installed prior to the floor the thickness of the horizontal base of the cove must be the same or thicker than the floor, this will ensure that water runs freely from the cove area.
  The flooring must always slope away from the cove and fall to drains to ensure no water is trapped at the floor to cove interface.

- Coves may also be installed on top of a pre-installed floor, again the transition to the flooring must be smooth and seamless, this method ensures the cove is higher than the floor and water can run freely away from the hard to clean internal radius.



- Coves are normally smooth finished (as compared to non-slip floors).
  The smooth finish enables easy cleaning and prevents bacteria build-up

- Movement in the wall and wall-floor transition must be managed any movement may result in cracking or crazing of the cove.

- Coves can follow concrete upstands or can be installed over ridged lined framing and align with the surface wall finish or lining e.g. Formwall.

- Lightweight wall linings should always be reinforced with fiberglass and resin, always reinforcing the wall lining and internal angle onto the floor to reduce movement.
- As with any resin floor the cove can be coloured to match or contrast with the floor being installed

It takes skill and practice to install straight coves with an even radius that will perform over time, clients should try to always ensure contractors skilled in quality coving work are selected, a great looking floor can be let down aesthetically if the coves are not straight and true.

Techniques
The following guidelines should be employed by contractors:

- Study the wall floor area where coves are to be installed and rectify or get rectified any defects.

- Preparation is essential to create a strong well bonded vertical detail, the wall and floor substrate therefore require coarse diamond grinding to remove any previous coatings or surface seals, dust, laitence or contamination.

- Prefill any areas requiring straightening.

- In critical constructions always fiberglass, reinforce all areas.

- Apply a thixotropic (gelled) post-primer to the wall prevent slumping and apply the cove detail “wet-on-wet” into the primer for maximum adhesion.

- Ensure the resin to be used is of a high quality and is “thixed” meaning it is semi-gelled to create good holdup on verticals.

- Determine what is the height and the design of the top of the cove is to be, options could include rebated into the wall, a cove strip, non-rebated but angled.

- Ensure the cove top is straight and usually horizontal.

- Firm compaction and consolidation of the cove mix is important to prevent surface porosity and weak mixes

- Carry through the new topping substrate sealant joints or major cracks. Sealant joints will become maintenance items.

- The contractor needs to develop resin and aggregate mixes that work consistently for his team allnex provide guidelines. It is very important that the installation team can produce consistent mixes that will work in all conditions.

- The mixes used by the contractor must take account of changing temperature and hence changes in the cure time of the resin system, failure to do so may result in quick gel times and the cove becoming stressed which can lead to crazing or cracking.

- The resin will generate heat during curing, this exotherm heat will cause some expansion, upon cooling unless controlled crazing may appear.
  Some solutions to avoid excessive exotherm are to work more slowly using a lower reactive catalyst or to install coving in spaced sections using sealant control joints

- Always work in one direction.
  Do not have two teams installing coves towards each other as at the meet point the differential curing will create a crack, unless the meet point is a sealant control joint.

- Vertical crazing
  Attempts to install long lengths of seamless un-interrupted coving need to be controlled, If installed uncontrolled some cracking or crazing can occur similar to that experience in large concrete installations.
  Relief joints should be incorporated into cove details.

  Time has proven that stress lines are not an entry point for microbes and white line reflective crazing does not generally break the surface seal of the cove.

  These “failures” are deemed aesthetic only defects which can be remediated, and should not be looked upon as “cove failures”, coving will not crack or fracture of its own accord unless installed incorrectly.

  If crazing is not acceptable then the remedy is to specify the cove with a coloured topcoat.
  If cracked clean, remove any loose material and refill these areas with gelled resin and re-topcoat.

  In some cases the use of a fully coloured topcoat will even-out the whole cove, a number of systems have coloured topcoats as part of their makeup; e.g. Nuthane Polyurethane flooring.

- Horizontal crazing
  This may be seen as a line or diagonal lines on the cove face.

This is often an indication that horizontal movement has occurred between the floor slab and the wall panel, the coving is hard and strong but will stress and shear following that type of movement. Remediation as above will fix these issues.

- Cove top delamination:
  This can be fixed with careful masking and filling using a gelled resin incorporating a fine sand.
  It is imperative that the cove top termination to paint coatings must is finished neat and tidy.

- Interior and exterior corner roughness
  This need more careful finishing and attention from the contractor.
  Mix design adjustments will assist installers in laying neater corners, if completed and still rough sanding and re sealing will improve this appearance.

- Physically damaged coves may require full replacement.

We feel it prudent to point out that due to the nature of vertical trowelling and because the cove is in a wall & floor transition area, problems can be unavoidable, however if recognised early, remediation does not necessarily need to be onerous on either the installation contractor or the client and good cove detailing makes even the dullest floor look professional.

For further advice or information do not hesitate to contact the allnex technical team.

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