

Coving for Nuplex Resin Flooring Systems

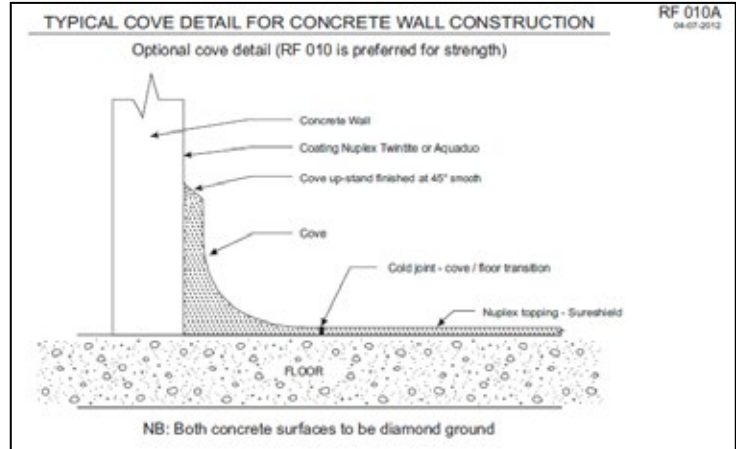


Nuplex resin floor toppings provide excellent concrete and environmental protection. Some of these installations are in complex environments where floor to wall cove is required. Products such as Sureshield and Surechem VE, Supascreed and Nuthane will perform well in these environments.

Installation

Coving is essential for hygienic manufacturing. A smooth radiused cove that is hard and fully bonded to the wall and substrate will eliminate an area commonly associated with bacteria. Many options for design exist. (Please refer Nuplex Flooring Details document).

Installation designs vary with a standard radiused and arised cove, opposite, rebated cove, covers with metal coving strip, square covers for confined spaces, covers that follow concrete upstands, covers on lighter wall materials, covers that align with Formwall lining etc. 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 that.

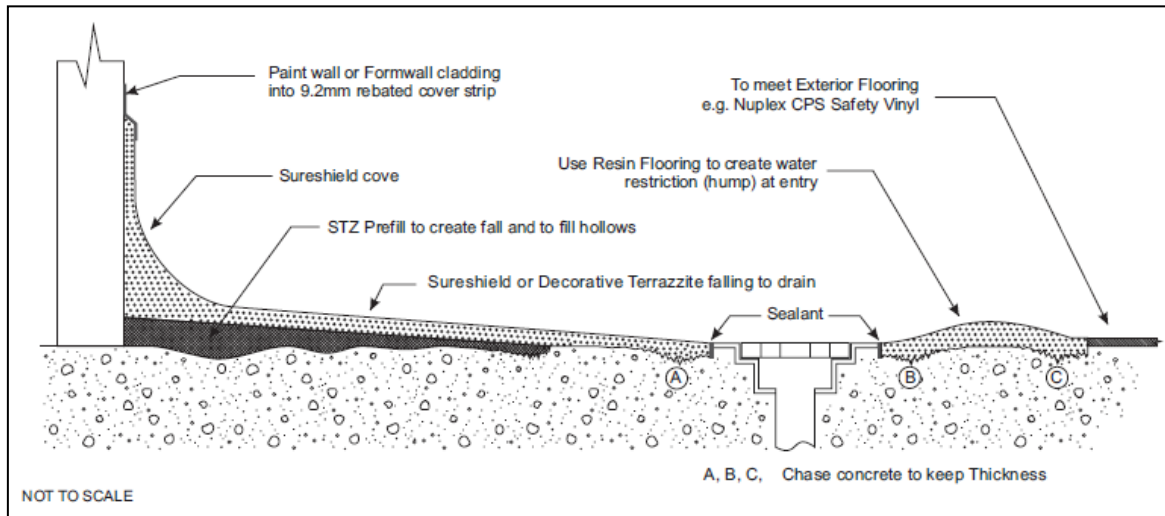


Coving radius may vary. 50mm radius coves are common but may be consuming of space. 25mm radius coves may be more difficult to clean. Cove height may vary from 150mm to 400mm to 1m high or full wall height.

Resin floor covers by their very nature a solid and hard, quite 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. Coves may also be installed on the top of a pre-installed floor. Again the transition to the flooring must be smooth and seamless.

The thickness of the horizontal base of the cove must be the same or thicker than the flooring to be applied. This will ensure that water runs freely from the cove area. As an aside, the flooring must always slope away from the cove and fall to drains.



Coves are normally smooth finished (as compared to non-slip floors). The smooth finish enables easy cleaning and prevents bacteria from finding crevices to breed.

Movement in the wall and wall-floor transition must be managed. Lightweight wallings are reinforced with fiberglass and resin down the wall lining and onto the floor to reduce movement. Any movement will result in cracking or crazing of the cove.

The top transition from the cove top to the wall coating or lining must be well designed, very neat, straight and durable. Clearly it also needs to be waterproofed. Nuplex flooring details cove many options.

Coves may be fully coloured. This has the effect of a homogeneous, hygienic appearance. It will also hide any installation defects. The cove topcoat may be coloured as well.

Contractors skilled in quality coving work need to be selected. It takes skill and practice to install straight coves, full boned coves, even radius coves that perform over time.

Techniques

The following guidelines should be employed by contractors:

- Study the wall floor area where coves are to installed and rectify or get rectified any defects.
- Reinforce any areas requiring straightening.
- In critical constructions always fiberglass all areas.
- Sureshield resin forms high quality coves as it is "thixed" ie it is semi-gelled to create good holdup on verticals.
- Carry through with sealant any joints or major cracks. Sealant joints will become maintenance items.
- Determine what is the height and the design of the top of the cove, rebated into the wall, a cove strip, non-rebated but angled. Discuss with the client.
- Ensure the cove top is straight and usually horizontal.
- The wall and floor area of the cove are coarse diamond ground.
- The contractor needs to develop resin and aggregate mixes that work consistently for his team Nuplex provide guidelines. It is very important that the installation team can produce consistent mixes that will work in all conditions.
- A thixotroped (gelled) wall post-primer is often used to prevent slumping.

Troubleshooting

Due to the nature of vertical trowelling and that a cove is in a wall & floor transition (ie a movement transition zone) problems may occur.

- 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 then the cove becoming stressed and crazing or cracking.
- Vertical crazing.

Coving by its very nature attempts to install long lengths of seamless un-interrupted coving. If the resin mixes and installation are not controlled the cracking or crazing will occur that concrete will. Building and substrate movement will also cause strain as the coves are in the interface between walls and floors; ie where movement occurs.

Often it is inevitable that some of these effects will occur. They are effects not defects. Time has proven that stress lines are not an entry point for microbes. White line reflective crazing does not break the surface seal. They are failures, they are aesthetic defects which can be remediated, as below, if required. If crazing is not acceptable then the coves should be specified with a coloured topcoat. Nuplex resin is non-porous and also the resin contains antimicrobial additives.

Unless a very strong exotherm has occurred (reaction) and a open crack has developed, the crazing is simply overcoated during the normal topcoat process. The exotherm is heat produced as the resin cures. The heat will cause some expansion and, upon cooling, crazing may appear.

Some solutions are to work more slowly (often not possible), install coving in spaced sections (this will result in more cold joints or to install more sealant joints.
Do not cove over cracks or joints.

Always work in one direction. Do not have two teams installing coves towards each other. At the meet point the differential curing will create a crack. Firm compaction and consolidation of the cove mix is important to prevent weak mixes

Ensure the main contractor has produced a stable wall to floor construction. It tied strongly. Building movement will cause cracking. Coves are not significantly flexible. They are tough and very strong.

Remediation

The topcoat process often covers most crazing. If cracked. Refill these with gelled resin and re-topcoat. In some cases use a fully coloured topcoat to even-out the whole cove. A number of systems have coloured topcoats as part of their makeup; eg Nuthane Polyurethane flooring. Physically damaged coves may be tidied up using coloured topcoats.

- Horizontal crazing
This may be seen as a line or diagonal lines. This often shows that horizontal movement has occurred between the floor slab and the wall panel. The coving is hard and strong but will be stressed when sheared in that movement motion.
Remediation as above will fix that issue.
- Cove top delamination:
This can be fixed with careful masking and filling with gelled resin with fine sand. The cove top termination to paint coatings must be neat and tidily finished.
- Interior and exterior corner roughness
This needs more careful finishing and attention from the contractor. Mix design adjustments will assist installers in laying neater corners.

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For all data and MSDS sheets, please refer to our website. www.nuplexconstruction.co.nz

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