

RESIDENTIAL BUILDING

DURABILITY STATEMENT

The durability of ComFlor with an exposed soffit is dependent on the protection provided by the coating and the type of exposure it is subjected to. It has been determined (by 'exposure farms' and monitoring of existing buildings) that a Z275 coating can provide full and satisfactory service for the design life (and beyond) of any building, dependant on its macro and microclimate exposure.

A successful outcome is determined more by the designer, constructor and end user than the product itself.

A satisfactory durability design is achieved through the combination of design and coating options. Coating options include:

- 275 g/m² of zinc (Z275) which is the standard ComFlor coating. This is suitable for use in Low and Medium corrosion environments
- Z450 which approximately doubles the life of standard Z275 for minimal extra cost
- Paint or other proprietary coatings to supplement the zinc (particularly for the most corrosive of environments such as near surf)
- Smart design contributes to maximising life via minimising dampness and correct ventilation.

Fully enclosed, built-in, low humidity, environments present no durability issues and generally require no maintenance for the design life of the building.

When the protective coating is subjected to corrosive elements it will degrade over time - the rate of corrosion is dependent on the regularity, duration severity of the adverse environment.

The two corrosion mechanisms are; through the slab itself 'top down' and from below.

Top Down Conditions

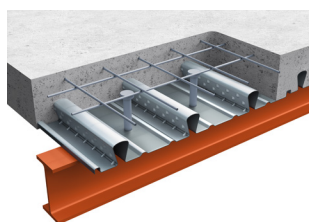
Top down water ingress due to cracks or percolation has minimal effect on the durability of a ComFlor slab. The interface between the concrete and the top of the ComFlor sheet is an inert environment and unless activated by exposure to oxygen, no corrosion will occur. The areas susceptible to top down corrosion are those where water can escape, (thereby exposed to oxygen) namely:

- the laps
- screw locations
- where planned penetrations or damage has perforated the ComFlor sheet.

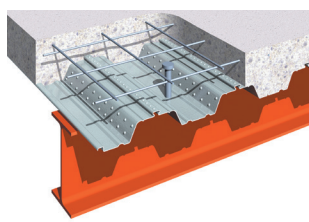
Top down corrosion is mitigated by utilising all or some of the following - in approximate order of importance:

- Proper concrete grade/pour/curing practise
- Appropriate crack control reinforcing
- Adequate falls so water sheds effectively
- Crack healing agents within the concrete mix
- Seal cracks of concern.

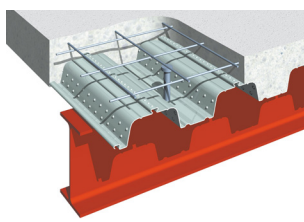
The extra level of protection provided by a waterproof membrane may be required or chosen for some applications.



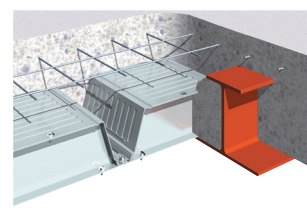
ComFlor SR



ComFlor 60



ComFlor 80



ComFlor 210

Soffit Conditions

Generally, an exposed soffit will fall in one of two classifications – enclosed or open and will either be in a perimeter zone or an internal zone of that soffit. The perimeter zone of any soffit is more susceptible to corrosion than an internal zone and may require localised treatment for best results.

Enclosed, is typified by a house floor over subfloor soil, the perimeter being 'enclosed' with concrete block masonry, slatted timber or similar and thereby largely protected by wind-blown moisture and debris.

The main mode of corrosion is ongoing wetting of the ComFlor soffit - without complete drying between wettings. It is typical for the soffit to present as wet in the first several months after construction as both the soil and fresh concrete release latent moisture. After this period adequate ventilation should stabilise the environment.

The guidance given in NZS3604 and E2/AS1 is used to mitigate moisture build up, principally:

- Cross flow ventilation
- A minimum clearance to soil of 450mm (600mm in Wellington)
- Tanking of the soil

Access to the subfloor area is also important to allow inspection and maintenance as required.

If these criteria cannot be satisfied additional actions can be taken in accordance with E2/AS1, or a suitable paint system can be applied to supplement or repair the zinc coating.

Details on a representative coating system is available upon request.

An **Open** soffit condition is typified by a deck or house that is not enclosed with a perimeter wall of any sort. In this application there is generally plenty of ventilation however the main risk for corrosion is from water runoff and windblown dirt and moisture coming in contact with the ComFlor soffit. This can be mitigated by the forming of drip edges to interrupt this flow either by way of cladding or formed concrete that carries water runoff past the ComFlor soffit.

Please refer to our **Commercial Carpark Durability Statement** document for further comment on soffit corrosion if the soffit is to be exposed to wind-blown or salt laden air.

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