

Waterproofing Decks

The correct and long term waterproofing of decks is fundamental to building success. There is much confusion over that status of decks within the building structure.

Type	example	issues	Cat.	Critical rating (10 highest)
Over interior rooms	Deck outside bedroom, on first floor	This is technically a roof; but often prone to movement, traffic and damage	A	10
Fully exterior (connected structure), detail and waterproofing required	Supported deck on house structure beams. Balconies, motel access ways. Also kitchens, & bathrooms	The connection to the building is critical; joists, wind/ water flow, movement, stepdowns	B	7
Fully exterior (separate structure), but waterproofing required	Supported , separate wooden deck. Waterproofing required for storage	Less critical as it can be dealt with as a stand alone unit	C	4
Fully exterior, no waterproofing required	Simple wooden deck with timber strip	No waterproofing issues; maybe drainage, drying	D	0

Note: The design of the deck is the concern of the Architect. This design should allow for stepdowns to include the deck itself, drainage, falls, the waterproofing, separation layer, mortar beds, pedestals, flooring finish and finally the fall and the step edge that will prevent water from driving into the building. The linkage of the deck to any door structure is critical. Waterproofing elements cannot be compromised for aesthetics. The issues of possibly blocked drainage channels must be addressed.

A primary issue, often unresolved at time of construction, is the **final floor surface** of the proposed deck. This should be fully confirmed prior to start. This will affect the design of the structure and the type of waterproofing.

Deck Floor Finish

Type	example	Requires waterproofing	Waterproofing method	Membrane Protected
Tiles – small	150x150mm	Y	Type I	Y
Tiles-large	305 x 305mm	Y	Type I	Y
Pavers	Min 600 x 600mm	Y	Type II	Y
Timber strip	100 x 20mm	Y	Type III	Y
Timber squares	500x500x25	Y	Type IV	Y
Vinyl	Various, sheet PVC	N		N
Plain membrane, exposed	Terraflex	N	Type V	N
Liquid Membrane exposed	Elastodeck 5000	N	Type VI	N
Black rubber	Sheet Butyl rubber	N		N

1. Water Proofing Methods - Category A environment

Type I

- Install structure as specified
- Install Double layer Soprasun (3 and 4mm) torch-on membrane system, fully detailed
- Install a slip layer of polythene
- Install min 50mm concrete slab to falls
- Adhesive bond tiles

Type II

- Install structure as specified
- Install Double layer Soprasun (3 and 4mm) torch-on membrane system, fully detailed
- Install a slip layer of polythene
- Install layer of drainage media for drainage and membrane protection.
- Loose lay pavers with spacers

Type III

- Install structure as specified
- Install Double layer Soprasun (3 and 4mm) torch-on membrane system, fully detailed
- Install a slip layer of polythene
- Install layer of drainage media for drainage and membrane protection.
- Loose lay timber strip in raft form; allow for removal

Type IV

- Install structure as specified
- Install Double layer Soprasun (3 and 4mm) torch-on membrane system, fully detailed
- Ensure any membrane exposed to UV is covered with Soprasolin metallised tape
- Install Nuplex pedestals; adjustable to falls. Various sizes available
- Lay timber squares on pedestals; simple for removal /maintenance / cleaning
- NZ building act compliant

Type V

- Install structure as specified
- Install Nuplex Terraflex to specification
- Caution: exposed membranes are subject to physical damage, movement wrinkling etc

2. Water Proofing Methods - Category B environment

(systems in category A may also be used)

Water proofing systems for category B environments are as follows:

Type I, II, III, IV

- Situclad E EWS: an epoxy glass fibre laminate applied to the substrate
- Elastodeck BT: a single component, moisture cured polyurethane black finish. Two coats are applied followed by a third that is blinded by sand.
- Both suitable for interior bathrooms and kitchens.

Type V

- Terraflex: an acrylic and fiberglass finish that is suitable for UV exposure. can be non-slip

Type VI

- Elastodeck 5000 is a trafficable, non-slip, single component polyurethane system . Crack and joint sealing systems are provided. This provides a simple exterior walkway finish, plant rooms etc



Category A decks: Multiple decks with living structures underneath



Category B structure: the deck hangs out from the house. No living structure underneath. Only the connection to the house is critical