



Enjoy the beauty of outdoor tile with confidence from our proven waterproof tile underlayment membrane — Duradek Tiledek™.



## WATERPROOF UNDERLAYMENT MEMBRANE FOR EXTERIOR TILE

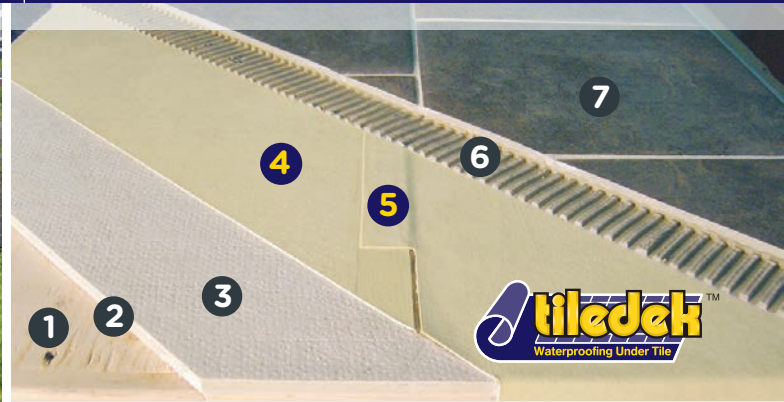
Professionally installed for long lasting performance you can trust.

SUNDECKS | ROOF DECKS | BALCONIES | PATIOS | POOL DECKS | WALKWAYS





## TILE DECK ASSEMBLY



- |                             |   |                                   |
|-----------------------------|---|-----------------------------------|
| <b>1</b> 3/4" Plywood       | <b>4</b> TILEDEK MEMBRANE with Fabric Top to enable the Thinset Bond    | <b>6</b> Thinset Bonding Adhesive |
| <b>2</b> Bond Coat          | <b>5</b> TILEDEK MEMBRANE overlapped with triple pass heat welded seams | <b>7</b> Exterior Tile            |
| <b>3</b> CBU (Backer Unit)* |   |                                   |

## THE EXQUISITE LOOK OF OUTDOOR TILE WITHOUT THE RISK OF WATER DAMAGE

There is nothing like the look of tile or slate on an outdoor deck. Unfortunately, the beauty is soon forgotten if water makes its way into the building or substrate through the tile from the deck. Should that happen, it is clear that when the tile was first installed, most of the attention was given to the appearance rather than proper waterproofing. The resulting repairs can be intrusive and expensive – especially when the cost of replacing the tile is considered.

This is a common story. There seems to be a lack of understanding within the building community about the proper waterproofing of decks, balconies and roof decks that are overlaid with porcelain tile, slate or some of the other natural stone finishes. That's where Duradek and our proven waterproofing system fits into the picture.

**Over the years, many Duradek waterproof decks have been covered with tile.** Duradek has been waterproofing roof decks since 1974 with PVC sheet membranes that are meant to be walked on. Our products are sold and installed by factory trained professionals who specialize in flat surface waterproofing. The successful application of exterior tile over our waterproof membranes led to an enhanced redesign of our regular Duradek™ Ultra, which became a specially designed roofing membrane capable of having tile applied over top – **Duradek Tiledek™**.



## ADVANTAGES OF TILEDEK™ OVER OTHER WATERPROOFING PRODUCTS

✓ 60 mil membrane (compared to others at 40 mils)	Thicker membrane means more protection, especially during the tile installation phase.
✓ Installed only by trained contractors who specialize in roof deck and balcony waterproofing.	Usually the waterproofing under tile is done by tilers who are not roofing experts and therefore are not familiar with the details required. Our trained contractors give the building owner greater security and peace of mind that their structure will not leak and they will not face the very expensive costs of rot repair.
✓ Duradek Tiledek™ is an approved roofing membrane.	Tiledek™ is installed with triple pass heat welded seams and typical roofing details instead of the chemically welded seams of other sheet membranes. The expense of future rot repair is prevented with these professional waterproofing details.
✓ Duradek Tiledek™ achieves a heavy (commercial) rating.	Tiledek™ achieved a heavy (commercial) rating using the Robinson Floor Test for porcelain tile over a wood frame constructed deck. This means surface tiles are far less likely to crack.
✓ Duradek has over 40 years of waterproofing experience.	Duradek has been waterproofing decks, balconies and flat roofs since 1974. With over 4 decades of roofing/waterproofing experience to draw on, our expertise provides peace of mind knowing the structure is protected.

# WHY THERE ARE SO MANY FAILURES OF TILE DECKS AND BALCONIES

## A failed tile deck or balcony is a common occurrence that can be avoided.

With exterior tile decks or flat roof decks, there are numerous issues that can result in two main types of failures:

- Problems with the tile overlay such as displacement or cracking;
- Problems with the structure such as leaks into the building and rot.

In most cases, the source of the failure is the lack of understanding of the properties and the limitations of the materials being used.

**Here is a short list of some of the more common issues:**

### REASON 1

#### Inadequate waterproofing



There are many products that are considered waterproof but are not installed using correct waterproofing techniques. Poor waterproofing can have far more expensive consequences than just repairing the tile if it involves rot repairs from water leaking into the building.

### REASON 2

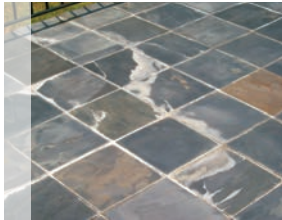
#### Waterproofing membrane which is soft allows too much deflection



Any material that is acceptable must be firm enough under all temperatures to support the tile overlay. Many decks are waterproofed with bitumenous roofing membranes that get soft in the hot weather and may allow the tile to crack. Suitable products will be tested with a Robinson Floor Tester to meet ASTM C-627.

### REASON 3

#### Poor quality Thinset



A white stain coming from the grout lines or from the underside of the tile is called Efflorescence. This is an indication of using a bond coat (Thinset) or grout that is not meant for exterior applications. The manufacturer of these products will recommend the correct materials to be used to reduce or eliminate efflorescence.

### REASON 4

#### Tile is installed with no provision for expansion



The tiled assembly is going to have substantial movement as the temperature changes and provision needs to be made to allow for that movement. There is a recommendation by the tile association for expansion joints to be every 8-10 feet in any direction. If the tiles have no room to expand, they will either crack or lift.

### REASON 5

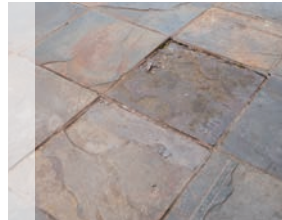
#### Structure has too much deflection and is unable to properly support the tile assembly



On wood frame construction, the floor must be designed to reduce the deflection caused by pedestrian traffic. The assembly needs to be very stiff and flat or the deflection can cause tiles to crack. The tile association recommends  $\frac{3}{4}$  inch plywood covered with  $\frac{1}{2}$  cement board appropriately fastened in order to provide adequate support to the assembly.

### REASON 6

#### Tile/Slate are not all intended for outdoor space



Tiles that crumble or crack may indicate they were not manufactured for exterior use or for the climate where they were installed. Freeze/thaw resistance and water absorption characteristics are available. If the supplier does not have the information, choose another product or supplier.

See White Paper on Tiledek™ for *Common Sources of Failure on Tile Decks on Wood Frame Construction*.

## A KNOWLEDGEABLE CONTRACTOR CAN BE MORE IMPORTANT THAN A GOOD PRODUCT.

### It's All in the Details!

**The Tiledek™ Solution...** Duradek Tiledek™ is an approved roofing membrane installed by professional deck waterproofers using Duradek's "Waterproofing Plus" methods for extra protection. We have all the details for a successful tile application — drains, posts, edge trims, curbs and more. See all details at [duradek.com/tiledek](http://duradek.com/tiledek)



Fig 1: Extra waterproofing protection on all critical details.



Fig 2: 1½" triple-welded seam



Fig 3: Cast Drain with Nickel-Bronze Strainer

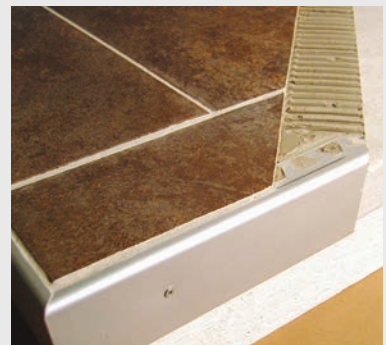


Fig 4: Pre-Finished Metal Drip Edge





## TILEDEK™ MEETS THE REQUIREMENTS OF: ANSI A118.10 Material Testing

This standard determines the suitability of a “load bearing, bonded, waterproof membrane for thinset ceramic tile and dimensional stone application” or simply put – how well thinset tile bonds to Tiledek™. The Tile Council of North America (TCNA) conducted the tests. The ANSI standard consists of several material tests including seam strength, breaking strength, stability, waterproofness and mold growth. This standard also tests the shear strength of tile bonded to Tiledek™ under various dry and wet conditions.

## Robinson Floor Test - Heavy / Commercial Rating

The Tiledek™ Assembly with Porcelain Tile has a **rating of “heavy”** based on the ASTM C-627 Floor Assembly Test using the Robinson Floor Tester. This means that this assembly can be used for Commercial purposes. All Tiledek™ Assemblies are rated for Residential or better.

Our test results are available on the Tiledek™ Testing and Approvals page of our website — [duradek.com/tiledek-testing](http://duradek.com/tiledek-testing)



## WARRANTY

Duradek Tiledek™ has a 10 year written waterproofing warranty. The Duradek Applicator also provides a workmanship warranty for the installation of the Tiledek™ membrane.

Tiledek™ guarantees to provide a fabric surface of the Tiledek™ membrane to which a thinset bonding adhesive (polymer modified mortar) will adhere.



## WHO WE ARE

Duradek® has been in the deck and balcony waterproofing industry since 1974. We pioneered the use of PVC membranes as an outdoor walking surface and were the first to have an approved PVC single ply ‘walk on’ roof membrane. Duradek®’s Ultra membrane is the primary roof material on tens of thousands of roof decks throughout North America. From large condominium and townhouse complexes to single family homes, Duradek® is the choice of Architects, Builders, Property Managers and homeowners who understand our attention to detail.

The same philosophy has been applied to the waterproofing/roofing requirement for the exterior tile industry. We put the same emphasis on the critical waterproofing details by providing a waterproof underlayment which is designed specifically for the bonding of exterior tile or slate. Duradek® contractors are a valuable source of assistance in addressing all the problem areas for tile finishing such as exterior edge finish, guardrail connection points and drainage.

Discover the Duradek Difference.



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