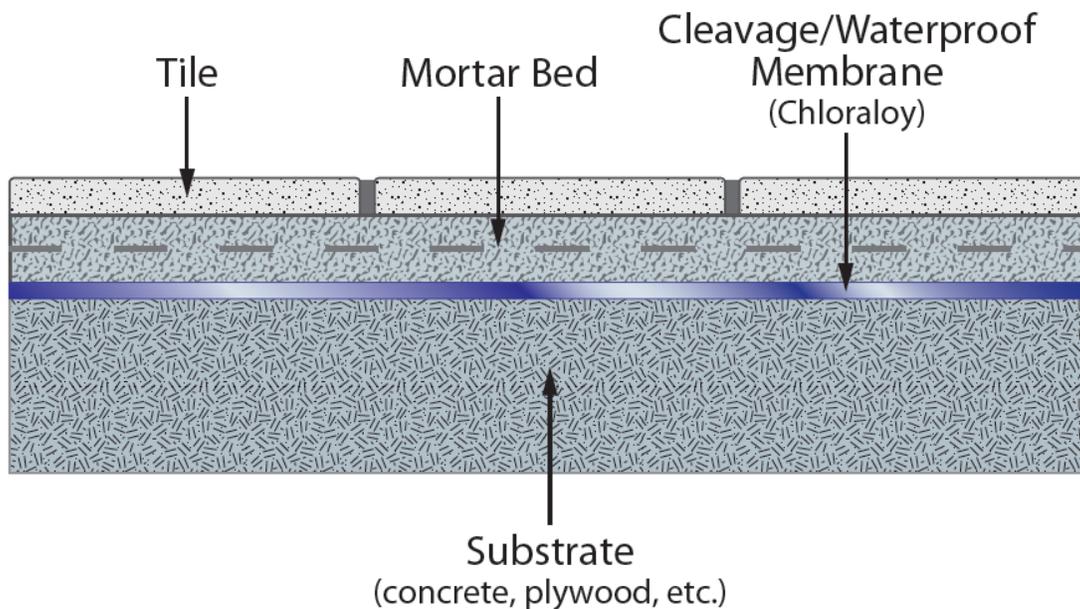


Mortar bed method – Thin-bed method

What, where, and why?

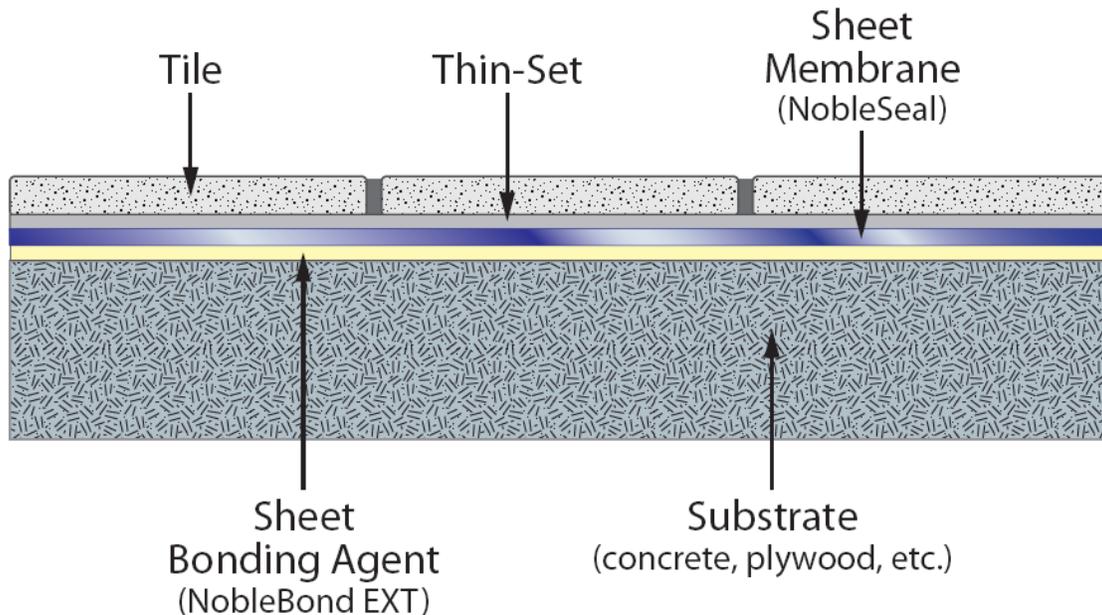
Literature from Noble Company and others in the tile industry contains references to mortar bed and thin-bed methods. Following are descriptions of those methods with a focus on shower waterproofing applications.



Mortar bed methods have been used for centuries and have proven to be dependable. They are also referred to as thick bed, full mortar bed or mud bed methods. Method involves the following:

- Loose lay a waterproofing membrane like Chloraloy over a substrate that is sloped $\frac{1}{4}$ " per foot from perimeters to a clamping ring drain. Typical substrates are dry packed mortar.
- Chloraloy isolates the mortar bed from the sloped mortar and can prevent telegraphing of cracks in concrete to tile. The weight of the mortar bed above keeps Chloraloy in place.
- Next, install a mortar bed which is typically 1 part Portland cement to 4-5 parts sand over Chloraloy
 - Commercial products are available.

- The Tile Council of North America (TCNA) indicates that 1.25" is the standard thickness with welded wire reinforcing in the middle of the mortar.
- After the mortar bed cures (generally overnight), tile can be bonded to the mortar bed.



Thin-bed methods utilize a thin-set mortar (cement) to adhere tile to a substrate (like concrete, mortar bed, plywood, etc.). Some thin-sets are fortified with latex (polymeric or acrylic) to increase the adhesive properties and flexibility.

A mortar bed is not required, so the installations are thinner, lighter and require less time. Thin-set mortars are typically about 3/16", which makes it preferred when height is an issue (e.g. barrier free showers).

When tile is bonded to the subfloor with a thin-set, movement in the subfloor can telegraph through the tile and cause it to crack. However, installing a membrane like NobleSeal® below the tile can provide waterproofing and protect tile from cracking.

NobleSeal is a composite sheet membrane made from chlorinated polyethylene (CPE) with fiber laminated to both sides. CPE is durable and impermeable (which makes it waterproof). Fiber provides bondable surfaces, so NobleSeal can be bonded to vertical or horizontal surfaces, and tile can be bonded to the membrane. NobleSeal isolates the surface from the subfloor to protect tile from cracking.

Following is a thin-bed installation procedure including NobleSeal for waterproofing and/or crack isolation.

- Attach a NobleFlex® Drain Flashing to the clamping ring drain.
- Create a mortar bed that is sloped 1/4" per foot from perimeter to the NobleFlex Drain Flashing.
- Bond NobleSeal to the mortar bed using NobleBond EXT or latex modified thin-set.
- Seal NobleSeal to the NobleFlex.
- Tile can be bonded to NobleSeal as soon as the bonding agent cures.

Chloraloy, NobleFlex and NobleSeal are Registered Trademarks of Noble Company, Grand Haven, MI.