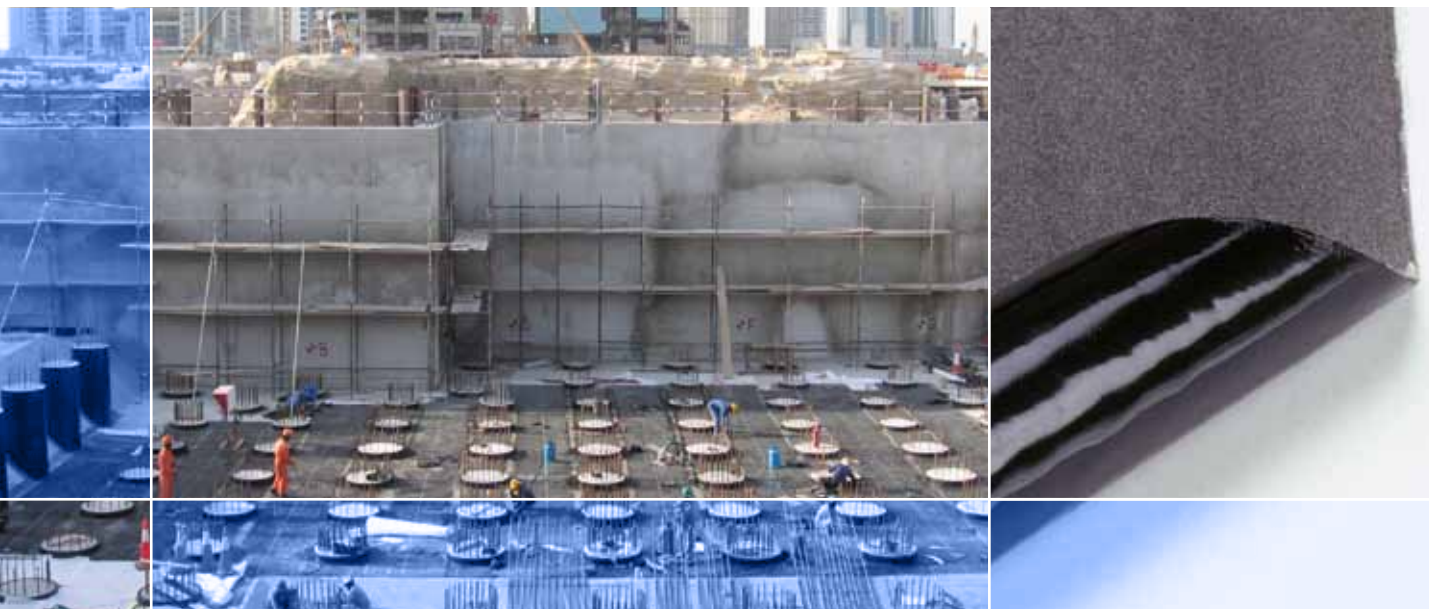


Teranap TP Tanking System

Unique waterproofing system for tanking



- ▶ Comprehensive tanking system
- ▶ Extra wide (2m and 4m) geomembrane for fast and safe application
- ▶ High puncturing resistance due to a thick polyester reinforcement
- ▶ Root resistant geomembrane due to its strong polyester film surfacing
- ▶ Compartmentalization and injection fittings for total safety
- ▶ Solutions for all structural details: expansion joints, pile caps, etc.
- ▶ High resistance to hydrostatic pressure up to 7 bars (70m under water table)
- ▶ High performance tanking system with solid experience over 20 years

Description

The **Teranap Tanking System** is composed of a SBS elastomeric bitumen geomembrane and a comprehensive range of components for structural details:

- Geotextile or **Blackline LDPE** membrane for mechanical protection;
- **Teranap 431 TP** extra wide waterproofing geomembrane;
- **Parafor M3S** covering strip on **Teranap TP** overlaps;
- **Fonda +** protection board;
- **Terastop** waterbar for compartmentalization;
- **Injection Flanges** and **Tubes** for easy detection of any leakage and for repair by gel injection;
- **Terastop DA** and **Neodyl** for waterproofing expansion joints.

Each of these components is described on the following pages.

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Application

Horizontally:

- **Blackline LDPE** membrane or 100g/m² geotextile for mechanical protection, depending on the roughness of the ground after excavation;
- **Teranap 431 TP** waterproofing geomembrane loose-laid with torched side-laps and end-laps;
- **Parafor M3S** covering strip torched on **Teranap TP** side-laps and in corners;
- **Terastop A 240/4** waterbar directly torched on **Teranap 431 TP** waterproofing geomembrane, allowing partitioning into compartments (about 250m²) for reliable injection of gel in case of repairs;
- **Injection flanges** to be fixed (4 per compartment) and through connection pipes up to the box set at the nearest wall surface or column;
- Geotextile for mechanical protection;
- PE film before pouring the protection screed;
- Protection screed.

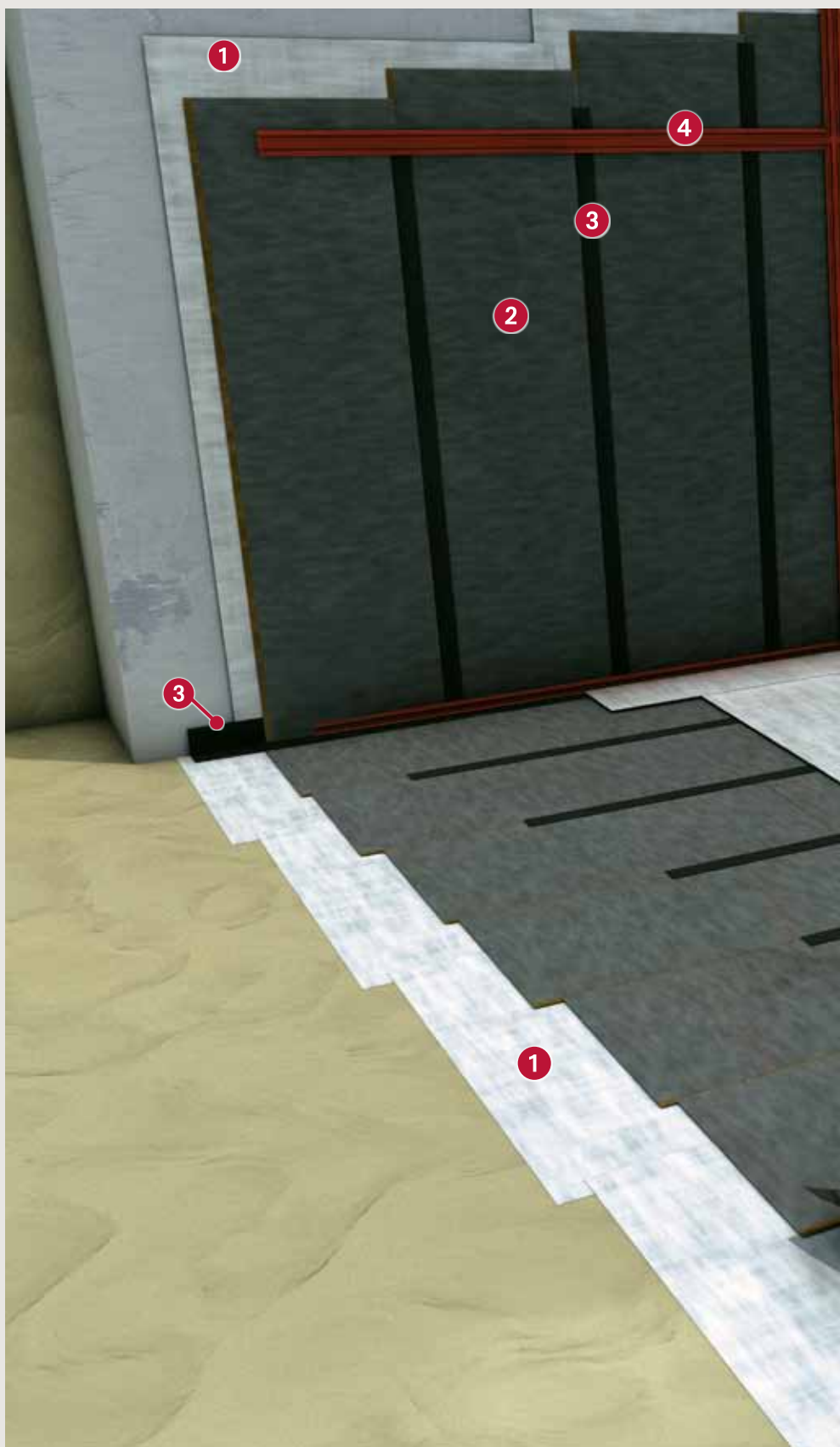
Vertically:

The **Teranap Tanking System** can be laid, either on permanent shuttering (secant piles, diaphragm wall, etc.), before building erection, or on structural walls after building erection:

- On permanent shuttering: the **Teranap Tanking System** is to be loose laid over a 100g/m² non-woven polypropylene geotextile. **Teranap 431 TP** geomembrane can be applied in a single stage or in several stages for each basement floor, and fixed with a temporary mechanical fixing above each basement slab. The membrane will then be connected to the next floor. **Teranap 431 TP** geomembrane is to be protected by protection boards (torched over Teranap 431 TP).
- On structural walls: once coated with **Siplast Primer**, **Teranap 431 TP** geomembrane shall be fully torched with an intermediate row of nails and protected by **Fonda +** protection board before backfill.

Details:

- Expansion joints: **Neodyl** strip torched to **Teranap 431 TP**, then **Terastop DA 240/4** waterbar torched to **Neodyl** strip.
- Pile caps: **Parafor M3S** and **Teranap 431 TP** membranes fully torched; then, pouring epoxy mortar on the pile heads.





Teranap 431 TP geomembrane



Teranap 431 TP

Teranap 431 TP is an extra wide (2m or 4m) elastomeric bitumen waterproofing geomembrane comprising a thick polyester reinforcement. Its double protection by polyester film surfacing and polyester fabric reinforcement allows for loose-laid application on rough substrates. Its simple welding method by torching the overlaps is well suited to on-site work and to changing weather conditions.

Characteristics

- Extra wide SBS elastomeric bitumen geomembrane: 4 times fewer joints to secure;
- High resistance to the most common potentially harmful chemicals present in the ground involved in tanking and in below grade jobs;
- Surfaced by anti-puncturing and root-resistant polyester film;
- Suitable for potable water storage (NSF listed);
- UV resistant;
- Withstands permanent hydrostatic pressure: up to 7 bars.

Parafor M3S covering strip



Parafor M3S covering strips

Parafor M3S is a high performance reinforced SBS elastomeric bitumen membrane for securing side-laps of **Teranap 431 TP** and in corners.

A double joint security on a single layer solution.

Membrane also used for details: pile caps, angle reinforcement, etc.

- 1 Geotextile or Blackline LDPE
- 2 Teranap 431 TP geomembrane + protection board
- 3 Parafor M3S covering strip and reinforcement angle
- 4 Terastop A 240/4 waterbar
- 5 Parafor M3S and Teranap 431 TP
- 6 Epoxy mortar on pile heads
- 7 Injection flanges, pipes and access box
- 8 Geotextile
- 9 PE film
- 10 Concrete screed

Fonda + protection layer

Studded membrane with:

- High resistance to compression due to the octagonal shape of the studs;
- Quick to apply; easy to cut with a cutter.



Fonda +

Blackline LDPE geomembrane (optional)

Can be used as an underfacing protection of the **Teranap 431 TP** waterproofing membrane, depending on substrate roughness after excavation. The laps are not welded.

- Good resistance to aggressive chemicals.
- Excellent UV resistance.



Blackline LDPE

Partitioning with Terastop A 240/4 waterbar

The **Terastop A 240/4** waterbar is used for partitioning into areas of 250m².

Terastop A 240/4 waterbar is torched onto the **Teranap 431 TP** geomembrane.

The junctions are end to end using heating blade cutting devices or hot air welding.

Special junction elements: X, T and L are available.



Melting of 2 elements with heating blade



Waterbars: Terastop A 240/4, left and Terastop DA 240/4, right

Details

The **Teranap Tanking System** includes a number of accessories and technical solutions to deal with details encountered on a tanking job such as expansion joints and pile caps.

- Expansion joint with **Terastop DA 240/4** waterbar and **Neodyl** strip.
- Expansion joints under the water table must be effectively structured with the following accessories:
 - ▶ **Neodyl** strip fully torched to **Teranap 431 TP**: non-reinforced SBS elastomeric binder with 1,000% elongation. Ensures perfect continuity of waterproofing between structures.
 - ▶ **Terastop DA 240/4** waterbar: depending on the situation (slabs, walls), to be anchored in concrete or to be torched onto **Neodyl** strip.

Injection System: flanges, pipes and boxes

This **Injection System**, composed of flanges along with connection pipes linked to accessible boxes (set at the nearest wall surface or column), makes it easy to detect any leakage of the tanking and to correct this by injecting gels to stop water penetration.

Usually 4 injection flanges and pipes are provided at each area for any necessary injections.

The injection flanges must be partially fixed (glued or spot torched) to the **Teranap 431 TP** geomembrane.

Patches of membrane can be welded between the injection flanges and the **Teranap 431 TP** for an easy liquid flow.

For minor leakage, acrylic gel is usually applied. For major leakage, polyurethane gel is recommended.

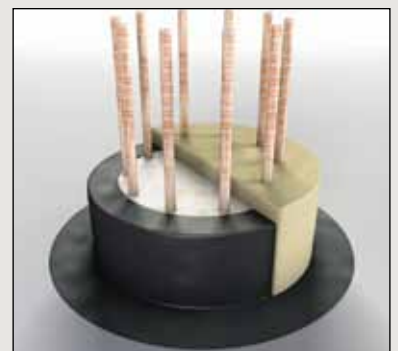


Injection flange with access box

Pile caps

The waterproofing details around the piles need to be executed very carefully at every point: all around piles up to the caps, between pile-caps and the building's bottom slab.

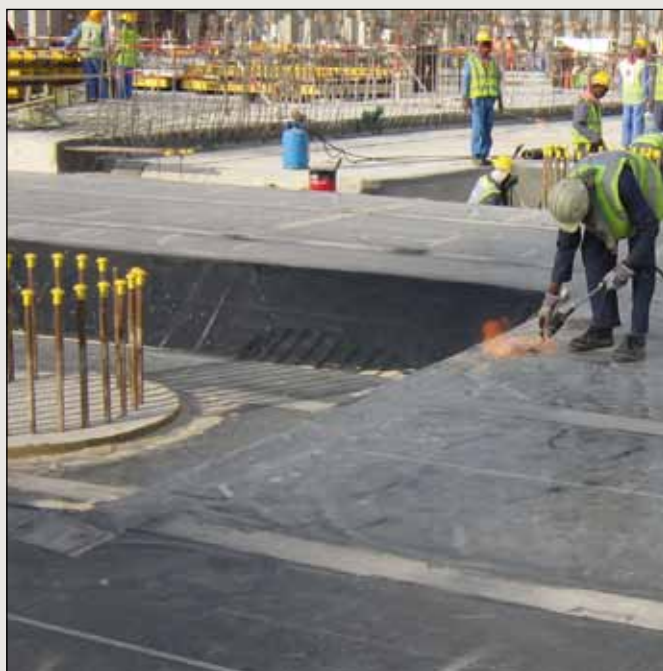
- Waterproofing pile caps: **Parafor M3S** and **Teranap 431 TP** fully torched.
- Pouring pile heads with epoxy mortar.



Pile cap with **Parafor M3S** and **Teranap 431 TP** membrane followed by a layer of epoxy mortar

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