**OTOKO JEMIMAHAWAJINOMBEEK**

**MATRIC NO: 15/ENG03/028**

**SUBMITTED IN PARTIAL FULFILMENT**

**OF THE REQUIREMENT FOR THE AWARD OF THE**

**BACHELOR OF ENGINEEERING (B.ENG) DEGREE IN CIVIL ENGINEERING**

**TO**

**ENGR. MRS DARAMOLA**

**DEPARTMENT OF CIVIL ENGINEERING, COLLEGE OF ENGINEERING, AFE BABALOLA UNIVERSITY, ADO-EKITI,**

**NIGERIA**

 **MAY, 2020**

What is Tanking?

What is Tanking a wall? The Tanking meaning is a generic term used to describe various mediums which are used to deal with water entering a below-ground building. Tanking membranes are really barriers which are applied to the structure to physically hold back water ingress and are the more traditional method of dealing with water from the ground.

We feel that there is a more modern, reliable and risk-free alternative to tanking membranes when we have actual or the potential for water ingress into a structure. The alternative to traditional basement tanking methods is the Cavity Drain Membrane.

Tanking system

Tanking membranes are applied to a building in order to provide a physical barrier to prevent the ingress of water. When tanking a wall, they can be applied either internally or externally. Examples of tanking membranes include:

• Bituminous bonded sheet tanking membranes

• Bituminous paint tanking membranes

 BASEMENT

A basement or cellar is one or more [floors](https://en.wikipedia.org/wiki/Storey) of a building that are completely or partly below the [ground floor](https://en.wikipedia.org/wiki/Storey). It generally is used as a utility space for a building, where such items as the [boiler](https://en.wikipedia.org/wiki/Boiler), [water heater](https://en.wikipedia.org/wiki/Water_heating), [breaker panel](https://en.wikipedia.org/wiki/Breaker_panel) or [fuse box](https://en.wikipedia.org/wiki/Fuse_box), [car park](https://en.wikipedia.org/wiki/Parking_garage), and [air-conditioning system](https://en.wikipedia.org/wiki/Air-conditioning_system) are located; so also are amenities such as the electrical distribution system and [cable television](https://en.wikipedia.org/wiki/Cable_television) distribution point. In cities with high property prices, such as [London](https://en.wikipedia.org/wiki/London), basements are often fitted out to a high standard and used as living space

WHAT IS BASEMENT TANKING?

Brickwork is naturally porous and has a tendency to absorb water. This is one reason why cavity walls are now considered standard in most new build properties; this cavity between the inner and outer facings helps to prevent water wicking into the interior of the property and so serves as a useful source of damp proofing.

However rooms built underground – namely cellars and basements – have additional problems. This is because the porous brickwork can absorb moistureom the surrounding earth. In areas with poor drainage or a high water table this can be particularly problematic, causing basements and cellars to remain permanently damp. This dampness of course can not only damage the contents of these rooms but can even impact the overall structure of the room over time.

TANKING MEMBRANES

**Tanking** [membranes](https://www.designingbuildings.co.uk/wiki/Membrane) (or [cavity](https://www.designingbuildings.co.uk/wiki/Cavity) [drain](https://www.designingbuildings.co.uk/wiki/Drains) [membranes](https://www.designingbuildings.co.uk/wiki/Membrane)) consist of a studded or dimpled [plastic](https://www.designingbuildings.co.uk/wiki/Plastic) sheet which is fixed onto the internal face of [masonry](https://www.designingbuildings.co.uk/wiki/Masonry), [block](https://www.designingbuildings.co.uk/wiki/Block) or [rendered](https://www.designingbuildings.co.uk/wiki/Rendered) [walls](https://www.designingbuildings.co.uk/wiki/Walls) and sealed with tape.

The [studs](https://www.designingbuildings.co.uk/wiki/Stud) create an air gap [cavity](https://www.designingbuildings.co.uk/wiki/Cavity) between the [wall](https://www.designingbuildings.co.uk/wiki/Walls) and [membrane](https://www.designingbuildings.co.uk/wiki/Membrane). Where there is no visible [water](https://www.designingbuildings.co.uk/wiki/Water) in the [cavity](https://www.designingbuildings.co.uk/wiki/Cavity), [ventilation](https://www.designingbuildings.co.uk/wiki/Ventilation) may be adequate to prevent the accumulation of [moisture](https://www.designingbuildings.co.uk/wiki/Moisture). Where [water](https://www.designingbuildings.co.uk/wiki/Water) is present, [drainage](https://www.designingbuildings.co.uk/wiki/Drainage) or a or [sump](https://www.designingbuildings.co.uk/wiki/Sump) and pump may be necessary.

**Tanking** [membranes](https://www.designingbuildings.co.uk/wiki/Membrane) can have a plain surface which allows battening and [insulation](https://www.designingbuildings.co.uk/wiki/Insulation) boards to be attached to them, or a mesh surface for direct plastering

COATING

**Tanking** [coatings](https://www.designingbuildings.co.uk/wiki/Coating) include; [bitumen](https://www.designingbuildings.co.uk/wiki/Bitumen), [asphalt](https://www.designingbuildings.co.uk/wiki/Asphalt), resin/tar and **tanking** slurry.

Liquid [bitumen](https://www.designingbuildings.co.uk/wiki/Bitumen) is painted onto cleaned [masonry](https://www.designingbuildings.co.uk/wiki/Masonry) or [render](https://www.designingbuildings.co.uk/wiki/Render) but is best for smaller jobs or for [coating](https://www.designingbuildings.co.uk/wiki/Coating) externally below the [damp-proof course](https://www.designingbuildings.co.uk/wiki/Damp-proof_course). It can prove difficult to apply to [masonry](https://www.designingbuildings.co.uk/wiki/Masonry) in older [buildings](https://www.designingbuildings.co.uk/wiki/Building) as it can separate from the [wall](https://www.designingbuildings.co.uk/wiki/Walls) if applied incorrectly.

Resin/tar [coatings](https://www.designingbuildings.co.uk/wiki/Coating) are typically epoxy or [polyurethane](https://www.designingbuildings.co.uk/wiki/Polyurethane) [resins](https://www.designingbuildings.co.uk/wiki/Resin) extended with tar or [bitumen](https://www.designingbuildings.co.uk/wiki/Bitumen). They are generally able to withstand higher pressures than [bitumen](https://www.designingbuildings.co.uk/wiki/Bitumen) [coatings](https://www.designingbuildings.co.uk/wiki/Coating).

[Asphalt](https://www.designingbuildings.co.uk/wiki/Asphalt) is typically applied in a thick coat with a further [wall](https://www.designingbuildings.co.uk/wiki/Walls) [constructed](https://www.designingbuildings.co.uk/wiki/Constructed) to prevent it from delaminating under [water](https://www.designingbuildings.co.uk/wiki/Water) pressure.

[Cement](https://www.designingbuildings.co.uk/wiki/Cement) based **tanking** slurry is typically used for larger [areas](https://www.designingbuildings.co.uk/wiki/Area). It can be applied with a brush, and once dry, overcoated with a breathable [render](https://www.designingbuildings.co.uk/wiki/Render) and finished with [plasterboard](https://www.designingbuildings.co.uk/wiki/Plasterboard) or [plaster](https://www.designingbuildings.co.uk/wiki/Plaster).

Both [floors](https://www.designingbuildings.co.uk/wiki/Floor) and [walls](https://www.designingbuildings.co.uk/wiki/Walls) may require **tanking** to prevent [water ingress](https://www.designingbuildings.co.uk/wiki/Water_ingres).