

# WATER PROOFING SYSTEM OF SWIMMING POOLS & WATERBODIES.



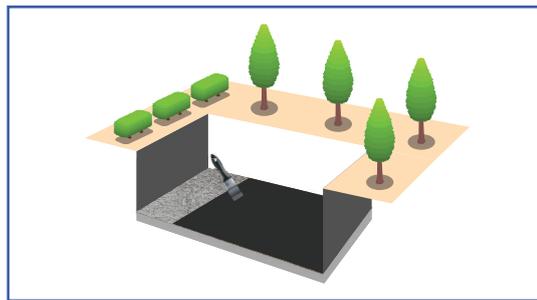
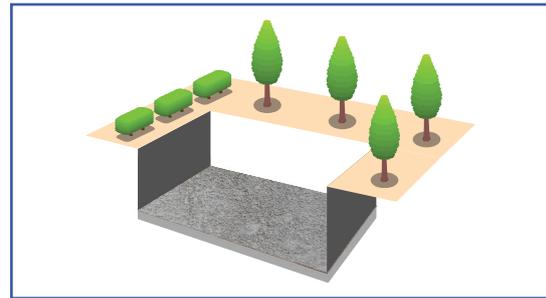
## Summary of application

- STEP 1:** Protection of Lean concrete with **Water Guard 491**.
- STEP 2:** Addition of **Max Flo Integra 3 (Powder)** Admixture in raft and retaining wall concrete.
- STEP 3:** Application of **Ressi Swell Bar Pro 60 (Swellable bar)** in the retaining wall joint.
- STEP 4:** Repairing of the concrete defects using **Patch 365 Plus**.
- STEP 5:** Application of **Water Guard Crysta Coat 101** over the surface of the concrete both internal and external.
- STEP 6:** Making external and internal chamfers between the raft and the retaining walls using **Patch 365 Plus**.
- STEP 7:** Plastering of all the areas of the water body with the addition of **Ressi SBR 5850** and **Silmix** all over the concrete internally and externally.
- STEP 8:** Application of **Water Guard 491** on the external and internal plastered surface of the water body.
- STEP 9:** Flood Test of the water body.
- STEP 10:** Inspection and back filling.
- STEP 11:** Laying of Screed over the water body prior to finishing / tile fixing.
- STEP 12:** Finishing of the waterbody using **Ressi TA 230** and **Ressi TG Bathseal 2K**.

## Detailed Description

Waterproofing systems should be applied with pools, fountains, water tanks, or drainpipes during the construction period to prevent the loss of water and subsequent leakages. Remedial waterproofing can be a risky and costly operation.

It is for this reason Ressichem has a variety of products proposed as a system to ensure long lasting swimming pools and waterbodies during its construction.



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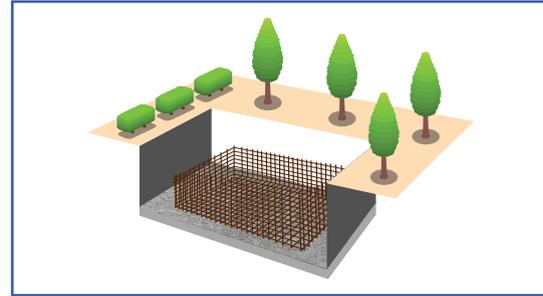
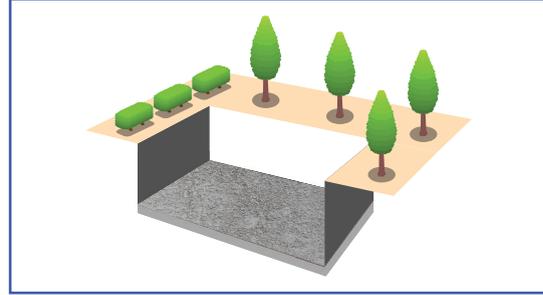


## Step 1: Protection of Lean concrete with Water Guard 491.

Once the excavation of the ground has been done, it is important to constantly dewater the area and make sure that the area where the water body is to be constructed is kept dry. Once the excavation has been completed, stone soling is done after which lean concrete is laid. Once the lean concrete has been properly cured and dried, it is recommended to apply 2 coats of **Water Guard 491** over the lean concrete surface. The application of **Water Guard 491** is to be done in opposite right-angled directions (if the first coat is applied left to right, the second coat is applied top to bottom).

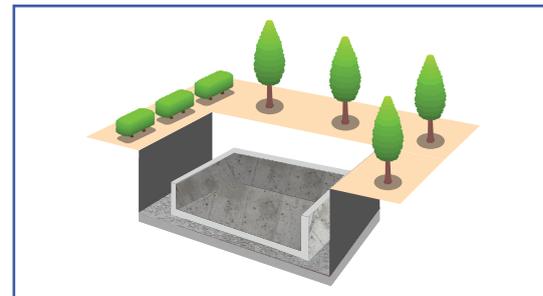
**Note:** Prior to concreting it is essential to make sure that the water inlet & outlet pipe sleeve provisions are already done within the formwork of the concrete so that there is no need for hacking or breaking the concrete after it has been casted.

Once the coating of **Water Guard 491** has been dried out, it is recommended to sandwich the coating by applying another layer of lean concrete over the coating of **Water Guard 491**. The steel reinforcement is to be done over the second layer of lean concrete.



## Step 2: Addition of Max Flo Integra 3 (Powder) Admixture in raft & retaining wall concrete.

If possible, it is recommended to pour the raft & retaining wall of the concrete in one go. The addition of **Max Flo Integra 3 (Powder)** Admixture is recommended in the concrete. It is recommended to add at least 1 KG of **Max Flo Integra 3 (Powder)** for concrete produced for every 50 KG bag of cement. A proper engineering mix design for concrete can be done for efficient dosing of the concrete admixture & to achieve the right flow properties, strength, & reduced water permeability of the concrete.

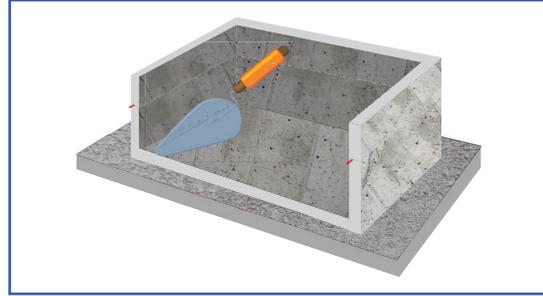


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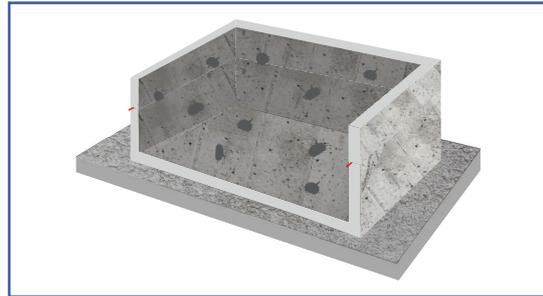
## Step 3: Application of Swellable bar in the retaining wall joint.

Incase if it is not possible to pour the raft & the retaining wall in one go, it is recommended to lay the retaining wall to at least 3 to 4 feet above the raft floor level. It is recommended to lay **Ressi Swell Bar Pro 60 (Swellable bar)** over the joint between the retaining walls (For further information on how **Ressi Swell Bar Pro 60** is applied, please refer to the product Datasheet). Once the application of **Ressi Swell Bar Pro 60** has been done, the remaining retaining wall should be poured with the addition of **Max Flo Integra 3 (Powder)** in it.



## Step 4: Repairing of the concrete defects using patch 365 Plus.

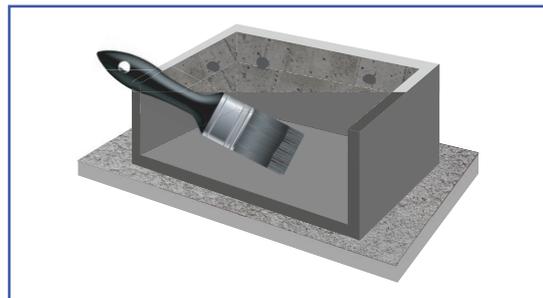
In principle after concrete de shutter of the raft & retaining wall there should not be any defects within the concrete. Once the formwork has been removed. It is essential to repair all the defects of the concrete with **Patch 365 Plus**, it is a suitable repairing material for the minor concrete defects & the voids created by the metal strips (Incase wooden formwork has been used). Once the concrete is repaired & of a sound nature subsequent treatment of various waterproofing materials can be done over the concrete surface of the basement.



## Step 5: Application of Water Guard Crysta Coat 101 over the surface of the concrete both internal & external.

**Water Guard Crysta Coat 101** is a high end crystalline waterproofing slurry coat which is to be coated over the prepared concrete surface on all the exterior & interior surfaces of the **Waterbody**. At least two coats of **Water Guard Crysta Coat 101** are recommended in right angled patterns. If the first coat is applied in top to bottom

pattern the second coat should be applied in left to right patterns. It is recommended to make sure that all the concrete that has been casted internally and externally is coated properly with **Water Guard Crysta Coat 101** (For further application guidance, please refer to the product datasheet).

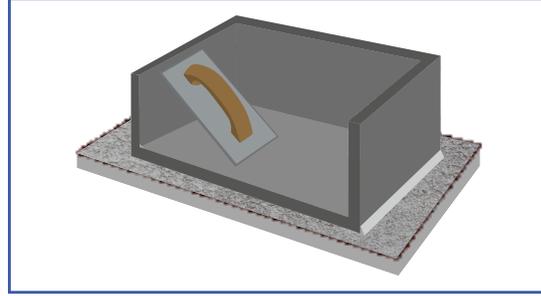


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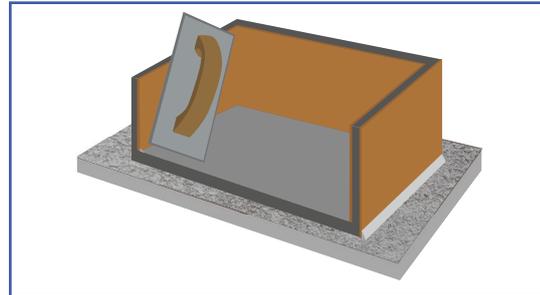
### Step 6: Making external & internal chamfers between the raft & the retaining walls using Patch 365 Plus.

It is recommended to use **Patch 365 Plus** to make the chamfers between the external and internal walls of the raft & retaining walls. The chamfers should be at least 6 inches wide and should cover all the intersection of the external & internal raft & the retaining wall area of the waterbody. **Patch 365 Plus** is a two-component cementitious high strength repair mortar; due to its high strength and durability it is an ideal material to be used for the making of chamfers in this case. Please refer to the product datasheet for further information.



### Step 7: Plastering of all the areas of the water body with the addition of Ressi SBR 5850 & Silmix all over the concrete internally & externally.

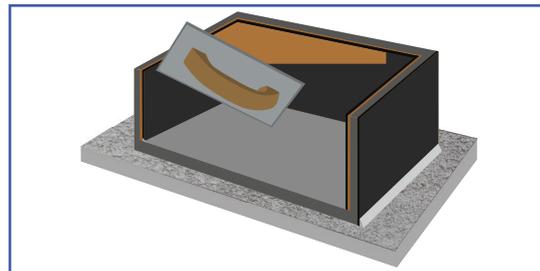
Once all the chamfer work has been properly executed, the inner and outer surfaces of the water body should be ready to plaster. It is recommended to use **Silmix** and **Ressi SBR 5850** as mortar admixtures to make sure that there are no cracks in the plaster and the plaster itself is water repellent. It is recommended to add 1 Liter of **Silmix** along with 1 Ltr of **Ressi SBR 5850** with every bag of cement used for the plastering of internal and external areas of the basement. It is to be ensured that the external and internal plaster of the water body should be finished slightly rough, exposing some grains using a foam (Foam finish plaster). This will provide a good key for the subsequent coating of **Water Guard 491**.



### Step 8: Application of Water Guard 491 on the external and internal plastered surface of the water body.

Once all the internal and external plastering works have been completed, it is recommended to apply at least 2 coats of **Water Guard 491** in all the external and internal areas of the water body. It is recommended that both the coats are applied in opposite right-angled directions.

If the first coat is applied with vertical brush strokes, the second coat is to be applied with horizontal brush strokes. (For further application and mixing guidelines of Water Guard 491, please refer to the technical datasheet of the product).

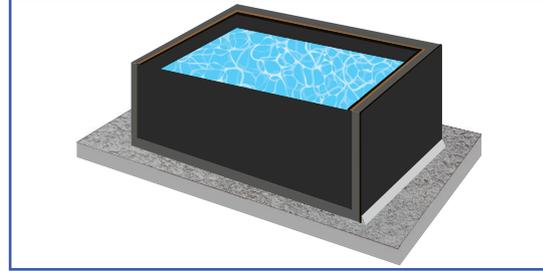


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## Step 9: Flood Test of the water body.

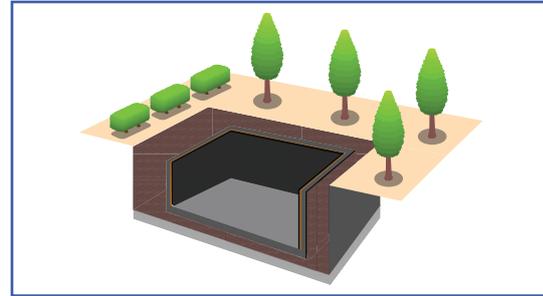
Once the coating of **Water Guard 491** has been completed & it has been dried out completely, it is recommended to fill up the water body with water to check for any leakages. If there are leakages within the water body, it should be rectified.



## Step 10: Inspection and back filling.

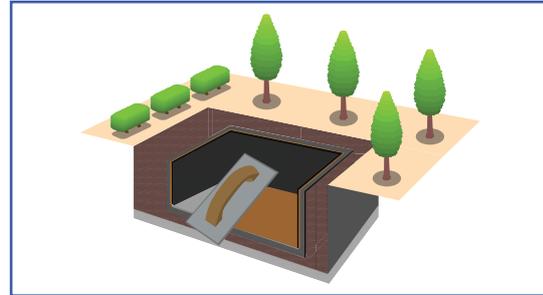
Prior to back filling of the waterbody, it is essential to have a final inspection and make sure that there are no spaces which have been left uncovered with any type of chemical treatment as previously explained in this system. If there any voids within the basements they should be properly addressed and made sure that it is watertight prior to back filling of the basement.

**Note:** In the entire process from excavation to the final finishing of the external retaining wall, it is to be ensured that there is constant dewatering of the waterbody area.



## Step 11: Laying of Screed over the water body prior to finishing / tile fixing.

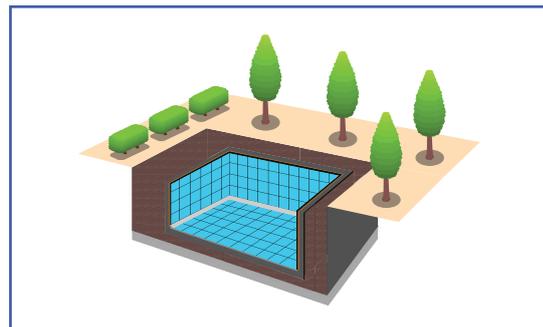
A screed is usually poured over the slab of the water body. It is recommended to use good strong mix design for the screed. It is also recommended to add **Ressi SBR 5850** along with the addition of **Silmix** within the mix of the screed. The recommended dosage of **Ressi SBR 5850** and **Silmix** is 1 Ltr each for every 50 KG Bag of cement used in the placement of floor screed over the slab of the water body. It is to be strictly ensured that the screed is placed in a slope moving towards the water drainpipes of the water body and all slopes need to be planned according to the need of the slope. If the slopes are not properly maintained, the functioning life of the waterbody may be reduced drastically and will cause many issues within the lifetime of the water body.



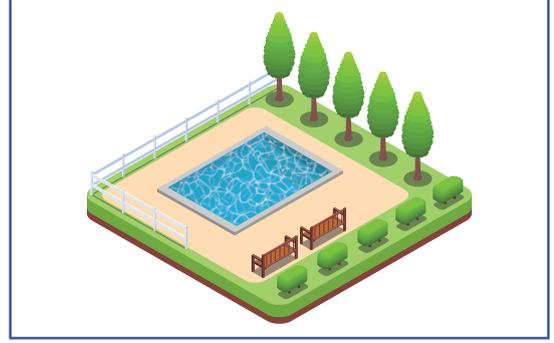
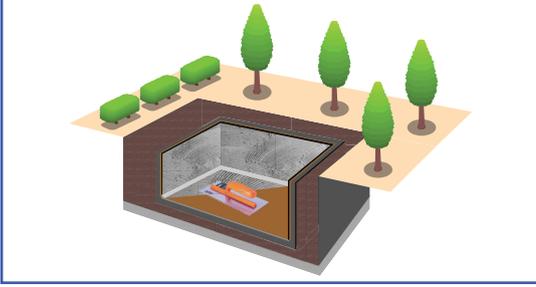
## Step 12: Finishing of the waterbody

Once the screed has been laid, cured, & dried out completely, a variety of tile adhesives & grouts are recommended to lay the tiles in the waterbody. **Ressi TA 230** is the recommended waterproof tile adhesive for this application. It is an ideal tile adhesive for standard ceramic, porcelain, and large format tiles. The Recommended tile grout to be used in this case is **Ressi TG Bath Seal 2K**. It is a mild acid resistant tile grout which does not deteriorate as quickly as ordinary cement or standard tile grout (Please refer to the technical datasheets of the product for more information).

**Note:** If any special tile or finishing is being conducted, please consult Resسمح representative for proper guidance.



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## What is a Chamfer?

Is a transitional edge between two faces of an object. Sometimes defined as a form of bevel, it is often created at a 45° angle between two adjoining right-angled faces. (Wikipedia).

In waterproofing systems, making a **chamfer** is of great significance. Water normally gets stuck in areas which have sharp corners of 90° & on several occasions the leakage of water occurs from this the sharp angle of the water retaining bodies or areas where significant waterproofing is required. To minimize the effect of this, a **chamfer** is usually created to make sure that there are no sharp angles in the structure to minimize the effect of water coming in & out of the structure.

