# RAPIDFLEX ROOT - RESISTANT

Radon Tight

## Rapidflex Root - Resistant

Catalog Number: Y49901, Y41102, Y41103

A two-component, fast-drying, root-resistant waterproofing material for spraying on concrete surfaces.

## Product description

Rapidflex root - resistant is a two-component, polymer-enhanced, highly flexible, and very fast-drying bituminous waterproofing material applied by spraying. It is resistant to roots according to DIN 4062 standards. The material is applied simultaneously with a hardener, immediately creating a ready, flexible waterproofing layer with excellent durability and adhesion properties.

## Product Uses

- Waterproofing underground surfaces such as: plinth walls, basement walls, retaining walls, casing walls, slurry walls, pile walls, floors and piles.
- Waterproofing tiled flat roofs.
- Waterproofing floors and roofs of underground car parks.
- Waterproofing open water reservoirs.
- Waterproofing planters.

## Packaging

Cube - 1,000 kg
hardening - 15 kg
Root inhibitor additive - 15 kg

Barrel - 200 kg
hardening - 3 kg
Root inhibitor additive - 3 kg

## Advantages

- High capacities of about 1000 $M^2$ per working day carried out only by two workers, not requiring scaffolding (up to a certain height).
- Resistance to standing water.
- For immediate application - does not require full concrete curing.
- Forms a highly elastic homogeneous, continuous, seamless, waterproofing layer.
- Forms a thick waterproofing layer in one action, without overflowing or cracking.
- Applicable on moist surfaces.
- Particularly high capacity for bridging dynamic cracks
- Particularly high capacity for recovery and self repair.
- Excellent adhesion to concrete.
- Blocks migration of Radon and ground gases.
- Does not decompose after being buried in the ground.
- Green Standard Certified.
- Resistant to roots according to DIN 2604 NID standards.

# RAPIDFLEX ROOT - RESISTANT

## Technical Specifications

| Appearance | Test results | Testing techniques |
|---|---|---|
| Shade | Emulsion - Dark Brown, Outcome - Black | |
| Specific weight (gr/ml) | 1.02±0.01 gram/ ml | |
| Solids percentage | 60 ± 2% | |
| Weight required to achieve 3 mm dry film thickness | 5 kg/$M^2$ | Minimum layer thickness |
| Application temperature | < 5°c- 35°c | |
| Heat resistance | > 100°C | ASTM D2939 |
| Elasticity in cold temperature | < -20°C | ASTM D522 |
| Bridging dynamic (cyclic) cracks | > 12,000 | IS 4518 |
| Bridging cracks in low temperatures | Resistant | ASTM C836 |
| Tensile strength (MPa) | > 0.1 | ASTM D412 |
| Maximum elongation | > 1,200% | ASTM D412 |
| Resistance to ponding water | Resistant | ASTM D2939 |
| Resistance to water pressure | 1.0 atm., 24 hours | DIN 52123 |
| Overall water absorbency | 3.8% | IS 1536 |
| Recovery after elongation of 900% | 85% | ASTM D 412 |
| Bacterial assault in items buried in the ground | Resistant | ASTM D3083 |
| Blocks Radon gas migration | Blocks | |
| Blocks migration of gases emitted from the groundthe ground | Blocks | ASTM D 1434 |
| Use of drinking water systemsthe | Authorized | AS/NZS 5452 IS |
| Resistant to roots | Resistant | DIN 4062 |

**Complies with the requirements of American standard 29 -ICC AC**

(Cold, Liquid-applied, Below-grade, Exterior Dampproofing and Waterproofing Materials)

# Method of use

## Preparing the area

Verify that the surface to be waterproofed is clean and clear of loose parts, dust, casting shells, concrete morsels, oil and any foreign substance that may impact adhesion. Holes must be filled with industrial plaster suitable for lower deposition level / IS 1920 (Cement Deposition) Holes in the concrete may result in bubbles after spraying, mainly over walls exposed to direct sunlight. If the surface is stained with template oil or any other substance, clean it by spraying water t high-pressure.
Protruding concrete parts should be ground to the actual level of the concrete. Protruding concrete may result in leakage of the material after spraying.

## Preparation of hardening solution

Preparation of the hardening for Cube (1,000 Liter): 100 liter of water, bucket, 15 kg of hardening.
Preparation of the hardening for Barrel (200 Liters): 20 liters of water, bucket, 3 kg of hardening.

Insert the contents of the hardening from the bucket into the water container according to the amount of material chosen (barrel, cube). The solution should be stirred for about 15 minutes simultaneously with the emulsion stirring, immediately upon adding the hardening to the water, in order to obtain a ready-to-use hardening solution. It is recommended to change the water from spray to spray, or at least to ensure a lid for the container where the hardening solution will be stored, in order to ensure that this water remains clean from dirt that could harm the sealing material during spraying.

## Method of application

**1. Preparing the material and applying the primer**

- ✓ Upon opening the container, make sure that there is no "crust" (solidification of the material surface). If present, it must be removed before inserting the mixing tubes into the container (before the first mixing).
- ✓ Mix with an electric mixer for 5 minutes or alternately mix by hand before the spinning begins. Spin the bitumen emulsion before spraying: a barrel about 10 minutes, a cube about 15 minutes. At the same time, spin the hardening solution.
- ✓ With the pumping pipe positioned at half the height of the cube or the barrel and the emission pipe placed at its bottom, spin the bitumen emulsion for about 8/7 minutes; afterwards lower the pumping pipe to the bottom.
- ✓ In parallel with the rotation of the cube/barrel, the jerrycan of the root-inhibiting additive (3 kg per barrel, 15 kg per cube) must be added, and the rotation of the cube/barrel should continue until the specified duration is completed, 10 minute for a barrel, 15 minutes for a cube.
- ✓ Apply the primer by spraying the bitumen emulsion without the hardening agent.
- ✓ Spray the emulsion at medium pressure in a quantity of 200 gram $M^2$ while covering the surface designated for waterproofing with a uniform coat ('painting'), so that the resultant surface is black without any excess emulsion.
- ✓ Let dry to the touch before spraying the sealant. To test, place a hand over the area where the primer was first sprayed. If your hand comes out clean or with nearly no traces of bitumen, the primer layer can be deemed to be dry. Waiting time for drying may change according to weather conditions (humidity, temperature, etc.).

## Method of use - continued

### Method of application - continued

**2. Waterproofing layer Application**

- ✓ Rapidflex root - resistant is applied by a double head spray gun that brings together the polymer-modified bitumen emulsion with the hardening agent while spraying.
- ✓ Application is performed by both components being sprayed simultaneously at a ratio of 10 Rapidflex Root - resistant volumes to1 volume of hardening agent (in other words 100 liters of water per Rapidflex Root - resistant cube or 20 liters of water per barrel).
- ✓ When spraying, make sure that the fan achieved is slightly larger than that of the bitumen emulsion.
- ✓ Make sure to spray the hardening agent on a mild spray and not to use a quantity greater or smaller than recommended. Watch the forming waterproofing layer to make sure that the water does not flow out but comes out in drops. As a rule, adhere to the recommended ratios in order to guarantee good results when spraying.
- ✓ While spraying, pay attention to the water secreted from the forming waterproofing layer and make sure that it is clear. Murky or brown water indicate that some of the bitumen emulsion did not react with the hardening agent, in other words, the quantity of sprayed emulsion is greater than the recommended amount in relation to the hardening solution.
- ✓ Rapidaflex may be applied on any surface: horizontal, vertical or gradient. When spraying horizontal surfaces, use a little less hardening agent than when spraying vertical surfaces. The quantity of hardening agent may be adjusted by regulating the pressure in the spray gun.
- ✓ A layer of 6 mm thick dry film may be applied in one coat, in other words, up to 10 kg/M$^2$ of bitumen emulsion, at temperatures of 5˚C - 35˚C, half that amount may be applied in temperatures above 35˚C, in other words 5 kg/M$^2$ of bitumen emulsion. To the extent a thicker waterproofing layer is required, spray two coats, in accordance with the instructions of the waterproofing consultant, or in the absence of instructions, after consulting the manufacturer.
- ✓ The material hardens very quickly; on vertical surfaces within less than an hour and on horizontal surfaces within 3 hours (initial drying), subject to weather conditions. The waterproofing layer may be covered after 72 hours from spraying,. It is recommended to wait for a day per each dry mm before covering. The above timeline may be shortened if approved by a waterproofing consultant and the material's manufacturer.
- ✓ If the concrete infrastructure is not entirely smooth and has holes in it, as is frequently the case, we recommend spreading a layer of geotextile fabric made by Pazkar weighing 180 gr/M$^2$, over the fresh layer of Rapidflex Root - resistant. The fabric may be adhered by applying moderate hand pressure to the Rapidflex Root - resistant layer about half an hour after spraying, without need for mechanical fixing.
- ✓ If a layer of Rapidflex Root - resistant is sprayed over an existing layer, wash the first layer with clear water, in order to remove any hardening agent residue from the existing Rapidflex Root - resistant layer and allow it to dry. Subsequently, spray a primer in the quantity of about150 gr/ M$^2$ and apply the second coat, according to the above-mention application instructions.
- ✓ A second coat of Rapidflex Root - resistant may be sprayed immediately following the first spraying,

## Method of use - continued

### Method of application - continued

as long as it is still fresh. If the first coat feels dry to the touch (see testing method above), but it is still fresh, we recommend spraying a primer coat in a quantity of 100 gr/M$^2$ before the second coat is applied, in accordance with the above-mentioned instructions.

- ✓ Concerning Rapidflex Root - resistant applied to vertical surfaces, we recommend protecting the waterproofing layer before the soil refill is returned, using a non-woven geotextile fabric weighing 200-180 gr/M$^2$, As aforementioned, in addition to PazDrain protective sheets of the various types marketed by Pazkar, preferably PazDrain FLT500 (flat sheet). Soil compaction is to be implemented only with a manual compactor up to a distance of 2 meters from the wall, as required in the Inter-Ministerial Specifications for construction jobs (chapter - 05).
- ✓ We do not recommend using foam boards to protect the waterproofing layer. Direct contact with the waterproofing layer may result in mechanical damage.
- ✓ If the waterproofed structure is found to be soaked in underground water, do not discontinue pumping before at least 7 days have lapsed from the end of application.
- ✓ The filling material will be granular and will not contain stones larger than 20 mm.
- ✓ Rapidflex applied to horizontal surfaces should be protected with non-woven geotextile fabric weighing 200 gram/M$^2$ marketed by Pazkar. On this fabric layer, we recommend casting a protective concrete layer. When tying the iron for casting the above surface, be sure to safeguard the waterproofing layer.
- ✓ In any event involving a waterproofing planner and/or consultant, their instructions must be followed. In the event of conflict between the instructions of the planner / consultant and this document, immediately alert all relevant entities.

## Consumption

The following table displays the estimated area (in M$^2$) that can be covered by applying Rapidflex Root - resistant, according to the type of packaging and thickness of the final dry waterproofing layer:

| Dry film thickness (mm) | 3 | 4 | 5 | 6 |
|---|---|---|---|---|
| Cube | 192 | 150 | 120 | 98 |
| Quantity for spraying (*) | 5.2 | 6.67 | 8.33 | 10.2 |

*(*) Quantity in kg/M$^2$. Note - Including - 200 gr/M$^2$ per primer layer.

## Method of use - continued

### Remarks - continued

- ✓ Rapidflex Root - resistant as well as the hardening solution must be spinned before use according to the above-mentioned instructions.
- ✓ We recommend cleaning the machine and emptying it and the pipes from emulsion at the end of each work day.
- ✓ At the beginning of work and prior to spinning the emulsion, empty the machine and the piping from the wash liquid and fill it with emulsion, only then start spinning.
- ✓ We recommend perform a periodic maintenance of the machine once a month or more, subject to its frequency of operation.
- ✓ Store in a ventilated, shaded place.
- ✓ Applying the material when temperatures are 5˚C- 35˚C.
- ✓ During hot days, when temperatures exceed 35˚C we recommend spraying half the recommended quantity, in other words 5 kg/$M^2$ of bitumen emulsion.
- ✓ Do not store Rapidflex Root - resistant in temperatures below 5˚C.
- ✓ According to the instructions of NATI (Israel National Transport Infrastructure Company), you are not to use Interglass mesh between the sprayed coats in projects of the above-mentioned company.
- ✓ Make sure the temperature of the material in the container and in the container's storage place is not lower than 5˚C. Ambient conditions below this temperature will result (Remarks cont) in decreased material quality and even disqualification for use.
- ✓ In days whereby there is concern that the ambient temperature at the work site will go under 5˚C, mainly during the night, do not leave containers on site.
- ✓ Before you begin application, verify that the temperature of the material in the container is higher than 10˚C.
- ✓ Use diesel oil to clean the machine from bitumen emulsion.
- ✓ Use ordinary clear water to clean the machine from the hardening emulsion.
- ✓ We recommend ventilating closed places during and after application
- ✓ Rapidflex Root - resistant is non-flammable and does not contain dangerous solvents.

### Safety instructions

- ✓ Before using the product please read the safety data sheet (SDS) that can be received in Pazkar LTD Company.
- ✓ Not for human consumption.
- ✓ When using the material, wear personal protective equipment (appropriate clothing, gloves, protective glasses / face mask).
- ✓ Wash your hands with soap and water immediately after use.
- ✓ To elevate and lift a cube of 1,000 kg follow the instructions described on the container, while taking all precautions required for preventing injury to workers in the work place and damage to the container itself and/or to the material.

**For Safety detailed instructions please refer to Pazkar's safety sheets (MSDS)**

**Warranty**
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