R 90 CP

Heavy duty polyurethane screed

DESCRIPTION

R 90 CP is a heavy-duty polyurethane screed with hard wearing aggregates for outstanding wear & slip resistance essential in heavy impact environments requiring high temperature resistance. It provides a dense, chemical resistant, seamless, joint free floor finish suitable for use in aggressive areas with maximum hygiene. R 90 CP has been formulated to give an easily worked system that can be applied quickly and easily by using a pin rake, only requiring finishing with a trowel to give the required finish. Suitable for use from 4mm up to 9mm thickness.

USES

R 90 CP is suitable for environments that can benefit from the tough chemically resistant system. Typical areas such as

- Food processing and storage
- Abattoirs and drinks production
- Dairies, cheese and milk production
- Pharmaceutical manufacturing
- Warehouse and storage
- Cold rooms, chillers and freezers
- Commercial and industrial kitchens
- Semi wet processing zones
- General heavy duty plant and traffic areas

FEATURES

- Hard wearing: extremely durable and abrasion resistant with low maintenance cost
- Facilitates rapid application: can be applied on 7 days old concrete or 2 days old polymer screeds
- Resistant to a wide range of chemicals and liquids
- Seamless: easily cleanable to maintain high standards of hygiene
- Microbiologically inert
- Odourless
- Taint-free
- Resistant to thermal shock at 9mm thick can withstand steam cleaning regimes
- High Impact resistance: Classified 'High Impact Resistance' under BS 8204: Part 1: 1999
- Food grade: CFTRI approved; conforms to the specifications as per U.S FDA 175.300
- Supplied in pre-measured packs for ease of mixing and consistency at site
- Available in range of colours

PHYSICAL PROPERTIES

R 90 CP	@ 27 ± 1°C
Mixed density	~ 2.1 g/cc
Pot life	15 - 20 minutes
Light traffic	24 hours
Full traffic	48 hours
Full cure	7 days
Bond strength ASTM D 7234:2022	~1.5 N/mm^2
Compressive strength EN 13892-2:2002	~ 50 N/mm^2
Flexural strength EN 13892-2:2002	~ 17 N/mm^2
Tensile strength BS 6319 Part 7:1985	~ 5 N/mm^2
Shore D Hardness ASTM D 2240:2015	~ 85
Coefficient of Thermal Expansion (per°C) ASTM C531:2000 (reapproved 2012)	2.5 x 10^{-5}
Service temperatures	
4 mm	-25°C to +80°C
9 mm	-40°C to +120°C (short term exposure)
Abrasion resistance	Classified 'Special Duty' under BS 8204:Part 2:2002(9)
Slip resistance	Classified 'Satisfactory' under BS 8204: Part 2: 2002(9), wet and dry
Impact resistance	Classified 'High Impact Resistance' under BS 8204: Part 1: 1999
Fire resistance BS EN 13501-1:2018	Bfl- s1

CHEMICAL RESISTANCE

R 90 CP is resistant to wide range of liquids and chemicals like most dilute acids (acetic, oleic, citric, hydrochloric, nitric and sulphuric acid), milk, animal fats and vegetable oils, sugars flavourings, essences, mineral oils, kerosene, petrol, mineral spirit, brake fluids, detergents etc. Chemical spillages should always be wiped up as quickly as possible and not be allowed to concentrate up by evaporation.

The data on the list of the chemicals found resistant to this product during our lab study is as mentioned below

CHEMICAL RESISTANCE CHART

Chemical	Concentration in %	Results
2 Ethoxy Ethanol	100	N
Acetic acid	10	R
Acetic acid	50	L
Acetic acid	99	N
Acetone	100	N

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Ammonia	30	R
Beer	100	R
Butan -2 one Extra pure	100	N
Citric acid	50	R
Coffee	100	R
Diesel	100	R
Ethyl Acetate Extra pure	100	N
Ethyl alcohol(Ethanol)	100	N
Formic Acid	98	N
Formic Acid	50	L
Guava Juice	100	R
Hydrochloric acid	35	L
Hydrochloric acid	25	R
Hydrogen peroxide	20	R
Kerosene	100	R
Lactic Acid	25	R
Lemon solution	100	R
Mango Juice	100	R
Methonol	100	L
Milk	100	R
Nitric acid	30	L
Nitric acid	50	N
Oleic Acid	100	R
Orange juice	100	R
Papaya Juice	100	R
Petrol	100	R
Promogranate Juice	100	R
Red wine	100	R
Sabeena solution	100	R
Sambar	100	R
Saturated salt solution	100	R
Saturated sugar solution	100	R
Sodium Hydroxide	50	R
Sodium Hypo chloride solution	100	R
Sodium Hypo chlorite	15	R
Sulphur Dioxide solution	100	N
Sulphuric acid	25	R
Tartaric Acid 80% solution	80	L
Tea	100	R
Toluene	100	N
Tomato Juice	100	R
Vegetable oil	100	R
waste oil	100	R
Xylene	100	L

Resistant	R
Limited Resistance	L
Not Resistant	N

Resistant : Subject to reasonable standards of housekeeping.
Limited Resistance : Occasional spillage tolerated, If the floor is washed down Immediately
Not Resistant : Rapid & severe attack even by small spillages.

NOTE: Discoloration is not classified as chemical attack/Resistance, if hardness is unchanged

COLOURS

R 90 CP is available in six standard colours: green, grey, orange, red, cream and yellow. Other colours may be available on special order, subject to quantity and technical requirements.

ARDEX ENDURA polyurethane floor systems are formulated to maximise the mechanical and chemical resistance properties, as a result of this, these types of systems are discoloured by ultraviolet light and few concentrated chemicals leading to a "yellowing effect". This yellowing effect is dependent upon the amount of UV exposure and concentration of chemicals both in terms of intensity and time, and is more noticeable with lighter colours.

COVERAGE ESTIMATES

Coverage

Approx. 3.0 m^2 when applied at a thickness of 5mm

Pack size

32 kg

Part A 2.45 kg
Part B 3.10 kg
Part C 26.2 kg
Part D 250 g

APPLICATION INSTRUCTIONS

Installation of R 90 CP should be carried out only by an approved applicator of ARDEX ENDURA. Ideal application temperature is between 12°C to 25°C. The working time of the mixed material is greatly reduced at higher temperatures.

Surface Preparation

Note: The substrate should have a surface tensile strength of at least 1.5 N/mm^2. R 90 CP can be applied on 7 days old concrete or 2 days old polymer screeds

The concrete substrate must be hard, sound, free of dust and other barrier materials such as paint, lime coatings, plaster, curing agents, laitance, oil, grease, wax, polish etc that will inhibit

adhesion to the substrate.

Contaminated concrete surfaces should be mechanically prepared, either by scabbling, grinding or contained shot blasting equipment or similar, and be vacuumed clean prior to installing R 90 CP. Overwatered or otherwise weak concrete surfaces must also be suitably prepared down to sound, solid concrete by mechanical methods. Dust and other debris should be removed using vacuum equipment.

Note: Any joints or cracks in the concrete base where differential movement is anticipated e.g. movement joints, should be brought through to the finished surface and suitably sealed.

To ensure maximum bond, grooves must be cut into the perimeter of the sub-floor, typically 8 mm deep by 8 mm wide. These should be inset approximately 100 mm from and running parallel with the walls, columns and adjacent to doorways etc., including any finishing edges and day joints. Joints are also required wherever movement is expected including adjacent to stainless steel channels and machine bases. The grooves must have clean, square edges and the product laid into the full depth of the groove forming a perimeter anchorage. Grooves should surround areas not exceeding 20 m^2.

Steel Plates

Steel decking must be cleaned, sound and properly supported to prevent flexing. Deck plate of less than 4 mm thick is not recommended. Surface should be shot blasted to SA 2.5 and primed using R 3 E Solvent Free Epoxy Primer.

Priming/Scratch Coat

Priming :
All areas to be treated with R 3 E or R 9 CE must be first primed with a suitable epoxy primer from the ARDEX ENDURA range. Selection of the primer must be made depending on the substrate condition & porosity. Please refer to the individual primer data sheets for further details.

One or more coats of the primer may be required depending upon the condition and porosity of the concrete substrate. High porosity substrates may be revealed after preparation and will be evident by their rapid suction and absorption. Poorly primed surfaces may lead to blistering or pin holing in the cured resin.

Final coat of R 3 E primer shall be broadcasted with fine aggregates at 1 kg/m^2. Allow it to dry for 24 hours.

Or

Scratch Coat with R 70 CP:
A 1mm scratch coat of R 70 CP is applied to ensure the substrate is completely sealed. Mix R 70 CP and pour onto the floor and spread thinly using a straight edge trowel. Scratch off the excess with the edge of the trowel and leave to cure for 16 hours or overnight.

Mixing

Before commencing, stir Part A and Part B individually. In a suitable mixing vessel, pour Part A and start mixing with a slow speed drilling machine fixed with a mixing paddle, add Part D (pigment) and Part B and continue mixing. Finally add Part C and mix together to obtain a homogeneous mix. One or more packs may be mixed at the same time in order to maintain a quick rate of installation.

Application

R 90 CP should be poured onto the prepared and primed substrate without delay and spread using a pin rake to achieve the desired thickness and closed with a steel trowel.

Note: If a smoother texture is required, as soon as the product has been laid and as work progresses, the surface should be gently rolled with a short piled roller in order to provide an even surface appearance. Do not over roll the surface, as this will reduce the texture of the surface finish. Do not re-roll later.

The work area should be protected during the installation process and during the initial curing time to ensure that no airborne debris can contaminate the surface of the wet resin as this will lead to unwanted blemishes in the hardened, cured surface.

All movement joints in the sub-floor must be carried through the topping and properly sealed. Construction joints and cracks not subject to movement may be overlaid but should the floor move in anyway, these defects will reflect through the system. Isolation joints will need to be allowed for in areas where high thermal movement is anticipated, e.g. around ovens and freezers.

Note:

- R 90 CP should only be applied at temperature above 5°C and where the atmospheric relative humidity (RH) is 90% or below. For floors with an RH of more than 75%, the entire floor area should be treated with effective suitable damp proof membrane.
- Once the mixed material has exceeded its pot life, the viscosity and the characteristics of the product will change and any unused product should be discarded at this time.

CLEANING

R 90 CP can be removed from tools and equipment by using RTC 100 immediately after use. Any hardened material will need to be removed mechanically.

STORAGE AND SHELF LIFE

R 90 CP PART A, B & C has a shelf life of 6 months & PART D has a shelf life of 24 months if kept in a clean, dry store between 5°C and 30°C in the original unopened containers. The product should be protected from frost, away from direct sunlight and sources of heat.

PRECAUTIONS

During mixing and application the following precautions should be observed: Ensure adequate ventilation and avoid contact of the material with the eyes, nasal passages, mouth and unprotected skin. Avoid contact with the hands by wearing protective gloves and by using, if necessary, a suitable barrier cream. In case of contact with the eyes, rinse immediately with plenty of water and seek medical advice and after contact with the skin wash immediately with plenty of soap and water. Prolonged contact with the skin should be avoided, especially

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where the user has an allergic reaction to resin-based materials. Always wear gloves and eye/face protection as necessary. Observe personal hygiene, particularly washing the hands after work has been completed or at any interruption whilst work is in progress. Care should be taken when removing gloves to avoid contaminating the insides. In case of accidents seek medical advice.

DISPOSAL/SPILLAGE

Spillage of any of the product components should be absorbed onto sand or other inert materials and transferred to a suitable disposable vessel. Disposal of such spillage or empty packaging should be in accordance with local waste disposal authority regulations.

For further information please refer to the Material Safety Data Sheet.

CONDITIONS OF SALE

Sold subject to the Company's conditions of sale which are available on request.

NOTE

The information supplied in this datasheet is based upon extensive experience and is given in good faith in order to help you. Our Company policy is one of continuous Research and Development; we therefore reserve the right to update this information at any time without prior notice. We also guarantee the consistent high quality of our products. However, as we have no control over site conditions or the execution of the work, we accept no liability for any loss or damage which may arise as a result thereof.

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