

# R 70 CP

## Heavy Duty Polyurethane Floor Topping



### DESCRIPTION

R 70 CP is a self-smoothing polyurethane resin flooring system with outstanding wear and chemical resistance, ideally suited in areas where a seamless, joint free finish is required and maximum cleanliness is essential. Food, pharmaceutical and general heavy duty plant and traffic areas are just some of the environments that can benefit from the tough chemically resistant system. R 70 CP can be installed from 2mm up to 5mm thickness.

### USES

R 70 CP is suitable for environments that can benefit from the tough chemically resistant system. Typical areas such as

- Food and beverage production
- Pharmaceutical manufacturing
- Warehouse and storage
- Semi wet processing zones
- Chemical plants
- 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
- High Impact resistance: Classified 'High Impact Resistance' under BS 8204: Part 1: 1999
- Supplied in pre-measured packs for ease of mixing and consistency at site
- Food grade: CFTRI approved; conforms to the specifications as per U.S FDA 175.300

### Available colours:

Golden Yellow (RAL 1004), Maize Yellow (RAL 1006), Yellow Green (RAL 6018), Cream (RAL 9001), Signal Red (RAL 3001), Grass Green (RAL 6010), Pure Green (RAL 6037), Dusty Grey (RAL 7037), Light blue (RAL 5012), Light grey (RAL 7035), Silver grey (RAL 7001), Traffic Grey A (RAL 7042)

Note: R 70 CP is not colour fast and may yellow over time. The rate of change will depend on UV light and heat levels and cannot be predicted. This will be more pronounced with lighter shades and blue shades and does not compromise the product performance or chemical resistance characteristics.

### PHYSICAL PROPERTIES

|               |              |
|---------------|--------------|
| R 70 CP       | @ 27 ± 1°C   |
| Mixed density | 1.86 g/cc    |
| Pot life      | 15 - 20 mins |
| Light traffic | 24 hours     |
| Full traffic  | 48 hours     |
| Full cure     | 7 days       |

|  |   |
|--|---|
| Bond strength<br>ASTM D 7234:2022  | >1.5 N/mm <sup>2</sup>  |
| Compressive strength<br>EN 13892-2:2002  | ~ 48 N/mm <sup>2</sup>  |
| Flexural strength<br>EN 13892-2:2002   | ~ 20 N/mm <sup>2</sup>  |
| Tensile strength<br>BS 6319 Part 7:1985  | ~ 7 N/mm <sup>2</sup>   |
| Shore D Hardness<br>ASTM D 2240:2015   | ~ 85  |
| Coefficient of<br>Thermal Expansion (per°C)<br>ASTM C531:2000<br>(reapproved 2012) | 7.64 x 10 <sup>-5</sup>   |
| Service temperatures<br>at 2mm Thickness   | -25°C to +60°C  |
| Abrasion resistance  | Classified 'Special Duty'<br>under BS 8204:Part 2:2002(9)                   |
| Slip resistance  | Classified 'Satisfactory' under<br>BS 8204: Part 2: 2002(9), wet<br>and dry |
| Impact resistance  | Classified 'High Impact<br>Resistance' under BS 8204:<br>Part 1: 1999       |
| Fire resistance<br>BS EN 13501-1:2018  | Bfl- s1   |
| VOC (ASTM D3960)   | ~8 g/L  |

### CHEMICAL RESISTANCE

R 70 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 ARDEX ENDURA "Chemical Resistance" chart.

| Chemical         | Concentration<br>in % | Results |
|------------------|-----------------------|---------|
| 2 Ethoxy Ethanol | 100                   | N       |
| Acetic acid      | 10                    | R       |
| Acetic acid      | 50                    | L       |
| Acetic acid      | 99                    | N       |
| Acetone          | 100                   | N       |
| Ammonia          | 30                    | R       |
| Beer             | 100                   | R       |

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|                               |     |   |
|-------------------------------|-----|---|
| 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 |
| Methanol                      | 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

### COVERAGE ESTIMATES

#### Coverage

Approx. 5.38 m<sup>2</sup> when applied at a thickness of 2mm

#### Pack size

##### 20 kg

Part A 2.45 kg  
 Part B 3.10 kg  
 Part C 14.20 kg  
 Part D 250 g

### APPLICATION INSTRUCTIONS

Installation of R 70 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<sup>2</sup>. R 70 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 70 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

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of the groove forming a perimeter anchorage. Grooves should surround areas not exceeding 20 m<sup>2</sup>.

### 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.

### 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) minimum for one minute then add Part B and continue mixing. Finally add Part C and mix together for minimum 2 minutes 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.

### 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<sup>2</sup>. 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.

### Application

R 70 CP should be poured onto the prepared and primed substrate and spread using a trowel to achieve the desired thickness. As soon as the product has been laid and as work progresses, the surface should be gently rolled with a spiked roller in order to provide an even surface appearance and to release any trapped air. 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 any way, 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 70 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 70 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 70 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 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.

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### 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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