

# ARKAZ POLYUREA 1045

Fast setting, rapid curing, aromatic, elastomeric waterproof pure polyurea coating

## DESCRIPTION

**ARKAZ POLYUREA 1045** is a 100% solid 2 component, rapid curing, flexible, aromatic waterproofing pure polyurea system, derived from a reaction of an isocyanate prepolymer and an amine terminated resin blend, the system is designed as a waterproofing and floor protective coating for concrete, metal, wood ceramic, geotextile and PU foam substrates, the material must be applied utilizing high pressure, heated plural component spray proportioning equipment and it complies with EN-1504-2 standard requirements.

## USAGES

- Swimming pools and water tanks
- Roofs, Garages, and parking lots
- Airport, Shipyards, and marina
- Wind energy plants
- Amusement parks and playgrounds
- Furniture houseware industries
- Sea water treatment plants

## ADVANTAGES

- High tensile strength
- Excellent abrasion resistance
- UV, chlorine and saltwater resistant
- Sprayable, forming a seamless and jointless layer
- High hydrolysis resistance
- Excellent adhesion to concrete, steel, aluminum, plastic, and wood
- Temperature and humidity insensitive
- Variable application thickness is possible
- Broad color spectrum

## TECHNICAL DATA

### ARKAZ POLYUREA 1045

### Typical values

VOC Content (ASTM D1259)	0
Solid Content (ASTM D2697)	100%
Mixed Density @25°C (ASTM D1217)	99 – 1.03 g/cm <sup>3</sup>
Tensile Strength (ASTM D638)	>18 N/mm <sup>2</sup>
Pull of Strength (ASTM D4541)	2.0 N/mm <sup>2</sup> Conc. 6 N/mm <sup>2</sup> Steel
Elongation at Break (ASTM D638)	> 350%
Shore A Hardness (ASTM D2240)	45 – 50
Abrasion Resistance (EN ISO 5470-1)	34 mg (H22, 1000 cycle)
Tack Free Time	15 – 30 seconds
Recoat Time	0 – 12 hours

## USAGE INSTRUCTIONS

### 1. Surface preparation

Concrete surfaces particularly if new; should be fully cured with a maximum residual moisture should be 6%, clean and free from contamination such as dust, oil, grease, organic growth, release agents and curing compounds.

Prepare concrete surfaces preferably by mechanical methods such as angle grinding to remove laitance, curing compounds and other loose materials to provide a mechanical key for **ARKAZ POLYUREA 1045**.

After preparation, fill all blow holes and surface imperfections using **PIOREP** range or **PIOMORTAR** range as per recommendation.

### 2. Priming

Prior to the application of **ARKAZ POLYUREA 1045** prime the prepared surface using **PIOPRIME 38**.

Apply **PIOPRIME 38** using a brush, roller or low pressure knap-sack sprayer to the prepared concrete surface at a rate of 9 m<sup>2</sup> per liter (100-micron coat). Allow the primer to become dry before applying **ARKAZ POLYUREA 1045**. This is typically 18 hours post priming depending on temperature condition.

### ARKAZ POLYUREA 1045

### Coverage

ARKAZ POLYUREA 1045

2kg/1m<sup>2</sup>/2mm thick

### 3. Application

Start spraying continuously the prepared areas without any interruption using a special polyurea high pressure spray proportioning machine for plural heated polyurea components of process temperature varies between 70-80 °C and 180-200 bar process pressure, following the usage instruction of the machine to avoid any material curing which may cause blockage of device or hoses.

ARKAZ **POLYUREA AL1070** can be applied 1mm thickness as a top UV protective coat from discoloration over **ARKAZ POLYUREA 1045**.

Minimum thickness recommended to achieve a strong and sound waterproofing is 1 mm.

## PACKAGING

**ARKA POLYUREA 1045** is supplied in set, component A & B.

- **A** 225 kg (Isocyanate)
- **B** 200 kg (Amine)

## HEALTH & SAFETY

Before applying **ARKAZ POLYUREA 1045** all safety protections should be worn during application, such as safety goggles and rubber gloves to avoid any harmful accidents, and for additional protection wear one-piece coveralls suit & a respirator to avoid inhaling any of the sprayed foam.

If **ARKAZ POLYUREA 1045** is splashed to skin, it must be washed off by water and soap at once, and if to the eyes seek medical attention immediately.

## STORAGE & SHELF LIFE

Keep **ARKAZ POLYUREA 1045** dry and in shaded place of a temperature range 20°C - 30°C, shelf life of the material is 9-months.

## REACTION PARAMETERS

	Unit	Method	Data
<b>Gel Time</b>	Second	-	5 -10
<b>Tack Free Time</b>	Second	-	15 – 30

## FINISHED PRODUCT FEATURES

Test Name	Unit	Method	Data
<i>Final Product Structure</i>	-	-	Solid Elastomeric Membrane
<i>Tensile Strength</i>	MPa	ASTM D638	≥ 18
<i>Module</i>	MPa	ASTM D638	%100 elongation ≥ 10 %300 elongation ≥ 15
<i>Repeat coating time</i>	hour	-	0-12
<i>Elongation</i>	%	ASTM D638	≥ 350
<i>Shore D</i>	-	ASTM D 2240	40 - 45
<i>Shore A</i>	-	ASTM D 2240	90 - 95
<i>Tear Resistance</i>	N/mm	ASTM D 624	≥ 50
<i>Taber Abrasion Resistance</i>	mg	EN ISO 5470-1	< 200 (H22, 1000 cycle)
<i>Impact Resistance</i>	-	EN ISO 6272-1	Class III
<i>Adhesion Strength</i>	N/mm <sup>2</sup>	ASTM D 4541	Concrete: ≥ 2 Steel: ≥6
<i>Carbon Dioxide Permeability</i>	meter	EN 1062-6	76, 45
<i>Capillary Water Permeability and Water Transfer Rate</i>	kg/m <sup>3</sup> h <sup>0.5</sup>	EN 1062-3	0.021
<i>UV Resistance Test</i>	-	ASTM G53	No cracking or swelling

## CHEMICAL RESISTANCE PROPERTIES

Chemical Name	Result	Chemical Name	Result
Sulfuric Acid (10%)	5	Potassium Hydroxide (10%)	5
Sulfuric Acid (20%)	4	Potassium Hydroxide (20%)	5
Sulfuric Acid (30%)	1	Sodium Hydroxide (50%)	5
Hydrochloric Acid (10%)	5	Brake Fluid	2
Hydrochloric Acid (20%)	4	Drinking Water (1mg/L chlor)	5
Nitric Acid (10%)	2	Chlorine Pool Water	5
Acetic Acid (10%)	5	Vinegar (5%)	5
Chromic Acid	4	Hydrogen peroxide (3%)	4
Hydrofluoric Acid (10%)	1	Mineral oil	5
Phosphoric Acid (10%)	5	Hydraulic oil	5
Phosphoric acid (20%)	5	Engine oil	5
Diesel	5	Toluene	2
Gasoline	4	Methanol	5
Kerosene	5	Ethanol (10%)	5
Citric Acid (10%)	5	Acetone	2
Citric Acid (20%)	5	MEK	2
Lactic Acid (25%)	5	Hexane	5
Muric Acid (10%)	5	Diethyl Ether	3
Ammonium Hydroxide (10%)	5	Xylene	2
Ammonium Hydroxide (20%)	5		

- These tests were done by dipping into chemicals for 6 months
- 5: RESISTANT, 4: RESISTANT ONLY COLOR CHANGE, 3: SWELLING, 2: CONDITIONS (SHORT-TERM DISCRIMINATION), 1: NOT RECOMMEND

### TECHNICAL SERVICE

The technical service department of Arkaz is available to assist in the correct and best use of our products, these resources and advice are at your disposal entirely without obligation.

Please contact:  
concretedoctor@arkaz.com

### LEGAL DISCLAIMER

The information given is based on data and knowledge considered to be true and accurate and is offered for the user's consideration, investigation and verification. Since the conditions of use are beyond our control, we do not warrant the results to be obtained. Please read all statements, recommendations or suggestions in conjunction with our conditions of sale including those limiting warranties and remedies which apply to all goods supplied by us. No statement, recommendation or suggestion is intended for any use which would violate or infringe statutory obligations or any rights belonging to a third party.

These products may be covered by patents or patents pending.



Copyright 2021  
Printed in K.S.A. Version 2.0  
13-March-2020