



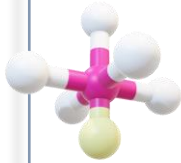
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MATERIALS DATA SHEETS



WATER & THERMAL INSULATION SYSTEM
POLYUREA & POLYURETHANE FOAM AND INJECTION



MATERIALS TECHNICAL DATASHEET

EPOXY PRIMER

PU PRIMER

POLYUREA

TOP COAT

POLYURETHANE FOAM

INJECTION MATERIALS

PRODUCT NAME	PRODUCT CODE
i. EPOXY PRIMER	BZ POX 002
ii. COLD APPLY POLYUREA	BZ PUR 450
iii. HYBRID HOT APPLY POLYUREA	BZ PUR 560
iv. PURE HOT APPLY POLYUREA	BZ PUR 670
v. ECONOMICAL HOT APPLY POLYUREA	BZ PUR 770
vi. POLYURETHANE INJECTION MATERIAL	BZ FOAM IN 4
vii. TOP COAT PROTECTION, UV RESIS.	BZ FLEXAL

Water & Thermal Insulation SYSTEMS

Polyurea & Polyurethane Foam



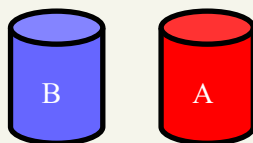
Polyurea spray

SPECIAL POINTS OF INTEREST :

- Define Polyurea
- Application Required Equipment
- Advantages of Polyurea

Polyurea :

is a type of elastomer that is derived from the reaction product of an isocyanate component and a synthetic resin blend component through step-growth polymerization. The isocyanate can be aromatic or aliphatic in nature. It can be monomer, polymer, or any variant reaction of isocyanates, quasi-prepolymer or a prepolymer. The prepolymer, or quasi-prepolymer, can be made of an amine-terminated polymer resin, or a hydroxyl-terminated polymer resin



Drums Filling 200 KG of A , B Materials

Polyurea Application Equip-

ment

Polyurea Need Special Equipment to be applied

- ⇒ Reactor
- ⇒ Air Unit
- ⇒ Electricity Unit
- ⇒ Vehicle Work Unit
- ⇒ Air Hoses
- ⇒ Heated Hoses
- ⇒ Spray Fusion Gun
- ⇒ Pumps
- ⇒ Liquid Transfer Hoses
- ⇒ Cleaning Chemicals
- ⇒ 2 Component Materials
- ⇒ Cleaning Materials
- ⇒ Well Trained Spray Technicians
- ⇒ Safety Equipment &

Polyurea Advantages :

- * **Fast drying** Materials : with in 30 seconds
- * **Fast Applying** Materials : one unit can finish 120 M2 Per Hour
- * **High Elongation** : 350 % Of Original Size
- * **Abrasion Resistant**
- * **Chemical Resistant**
- * **High Temperature Resistant** : can reach to more than 50 °c and direct thermal shocks more than 150 °c
- * **Long Guarantee** : from 25 years to 50 years
- * **Light on the surface** : as thickness from 1.5 : 2 mm can give warranty 20 years
- * **Anti Plants Grout** : can not penetrate polyurea layer
- * **Perfect Solution** for Old Roofs Leaking : through making barrier on the roof
- * **Humidity Resistant**
- * **Rust Resistant**
- * **Water tanks** Potable

Polyurea Application Fields

- ◆ Roof Coatings
- ◆ Flat Roof Repair
- ◆ Pipe Protection .
- ◆ Inner pipe repair
- ◆ Secondary containment .
- ◆ Tank coatings
- ◆ Truck bed liners
- ◆ Freight ship liners .
- ◆ Bulk transport wagon liners .
- ◆ Conveyer belts
- ◆ Car park decks
- ◆ Bridges
- ◆ Offshore

Polyurea System & Layers

◇ Two Layers System :

Need to be covered , consist of (Primer thickness 150 Micron + Polyurea spray 1.5 : 2 mm) , Warranty 25 years

◇ Three Layers System :

Does NOT need to be covered , perfect solution for tile surface that face leak, consist of (Primer .150 mm + Polyurea 1.5 : 2 mm+ Top coat 0.100 mm “ UV resistant, Color Stability

Polyurea Approvals

- Justice Palace Riyadh
- Ministry Of Health
- Real Estate Development Fund.
- Ministry of Interior
- Technical & Profession Training corporation

SPECIAL POINTS OF INTEREST :

- Polyurea Application Fields
- Polyurea SYSTEMS & Layers
- Polyurea Approval

Water & Thermal Insulation SYSTEMS

Polyurea & Polyurethane Foam

⇒ New **CONCRETE** Substrate Water Insulation

POLYUREA TWO LAYERS #SYS.

• DESCRIBE THE SYSTEM

Two Layers System is a water insulation for indoor areas or under tiles with a long warranty 20 years

• DESCRIBE THICKNESS & LAYERS

Layer	Thickness
Epoxy Primer	0.15 mm
Polyurea	1.5 : 2 mm

• APPLICATION FIELD & USAGE

- ⇒ Foundation
- ⇒ Basement
- ⇒ Concrete water tanks Lining
- ⇒ Roof under tiles

• WORK STAGES

- * Surface Preparation (Grinding , Expansion joints repair ,Cleaning)
- * Applying Primer Layer by Roller Or Spray
- * Polyurea Spray by Special Reactor

⇒ New Concrete Substrate Water & Thermal Insulation

POLYUREA TWO LAYERS #SYS. & PU FOAM

• DESCRIBE THE SYSTEM

Three Layers System is a water insulation for indoor areas or under tiles with a long warranty 20 years

• DESCRIBE THICKNESS & LAYERS

Layer	Thickness
PU Foam	5 CM
Epoxy Primer	0.15 mm
Polyurea	1.5 : 2 mm

• APPLICATION FIELD & USAGE

- ⇒ Roof under tiles (The System should be covered with tiles)

• WORK STAGES

- * Surface Preparation (Cleaning The Surface)
- * Applying PU Foam with a Special Reactor
- * Applying Primer (Optional)
- * Applying Polyurea Spray

⇒ New & Old **STEEL** Substrate Water & Thermal Insulation

POLYUREA THREE LAYERS #SYS. & PU FOAM

• DESCRIBE THE SYSTEM

Four Layers System is a water insulation for indoor areas or under tiles with a long warranty 20 years

• DESCRIBE THICKNESS & LAYERS

Layer	Thickness
PU Foam	5 CM
Epoxy Primer	0.15 mm
Polyurea	1.5 : 2 mm
Top Coat	0.10 mm

• APPLICATION FIELD & USAGE

- ⇒ Outdoor Steel Roofs

• WORK STAGES

- * Surface Preparation (Cleaning The Surface)
- * Applying PU Foam with a Special Reactor
- * Applying Primer (Optional)
- * Applying Polyurea Spray
- * Apply Top coat ,UV resistant, Color Stability

⇒ Old **TILE** Substrate REHABILITATION Water Insulation

POLYUREA THREE LAYERS #SYS.

• DESCRIBE THE SYSTEM

Three Layers System is a water insulation for indoor areas or under tiles with a long warranty 20 years

• DESCRIBE THICKNESS & LAYERS

Layer	Thickness
Epoxy Primer	0.15 mm
Polyurea	1.5 : 2 mm
Top Coat	0.10 mm

• APPLICATION FIELD & USAGE

- ⇒ Outdoor Old Tile Roofs Rehabilitation

• WORK STAGES

- * Surface Preparation (Cleaning The Surface)
- * Applying Primer
- * Applying Polyurea Spray
- * Apply Top coat ,UV resistant, Color Stability

Note :

It is the best solution for tile or concrete surface leak repair

PRODUCT CODE: BZ POX 002

Two Component Solvent Free Epoxy Primer

1. Description

BZ POX 002 is two component polyamine cured solvent free epoxy primer.

Primary Uses

- Chemicals storage areas
- Hospitals
- Bottling plants
- Forklift traffic areas
- Shopping centers
- Automotive industry
- Laboratories and many others

Principal Characteristics:

- Good resistance against water and oil
- Do not include extender and pigment
- Good low temperature cure
- Easy application
- Do not include solvent

Resistance

- Dilute Acid
- Cleaning Detergent
- Herbal Oil, Animal Oil and Mineral Oil
- Diesel Fuel, Gasoline and many solvents.

Color	Colorless, Clean
Mass Density (20°C)	1.09 gr/cm ³
Solid Content	% 100
Potlife	20-25 min
Occupancy for 20 kg (20°C)	10-15 min.
Surface and Room Temperature	+10°C +30°C
Touch After Dry (20°C)	6-8 hour
Overcoating Interval (20°C)	24 hour
Full Cure After	7 days

Recommended Substrate Conditions

- Surface should be clean from grease, dust or other contamination.
- New concrete should be at least 28 days old.
- Surface and room temperature should be between +10 / +30 °C.
There would be levelling and bubble problems with the low temperature and short drying time problem with the high temperature.
- New coating area should be protected from water first 24 hours.
- Relative humidity should be max. %75.
- Do not thin.

PRODUCT CODE:BZ POX 002

Two Component Solvent Free Epoxy Primer

Instruction For Use

- Mixing Ratio : By weight base to hardener : 66,3 : 33,3
- Stir the A Component well and then B Component above mentioned mixing ratio. Mix for 3 minutes with low speed electrical mixer (20-300rpm). The most important detail is mixing to get homogenous material with A and B component. Otherwise non mixing part will make a problem at the top of coating.
- Apply with trowel.
- The temperature of the mix. Should be above 15 °C.
- The estimated consumption is 0,350 kg/m². You should discuss our technical department regarding the thickness and consumption.
- Wait at min 24 hours / max. 48 hours between the layers before the installation. If you wait more than 48 hours, you should make sandpaper to get good adhesion.

Packaging

A Component : 12,00 kg

B Component : 6,00 kg

Cleaning :

All tools and equipment should be cleaned before the pot life of the system with Bunzen Thinner.

Storage Conditions :

The product is stored in sealed container placed at indoor dry warehousing premises within the temperature range from 14 °C to 35 °C. Shelf life is 12 months from the production date in cool and dry place.

Note

The data on product properties and its processing have been acquired by laboratory measurements and application tests. This leaflet can provide you with an advice legally not binding; the product processing must be adapted to concrete conditions. Please, do not hesitate to contact us for further details.

TECHNICAL DATA SHEET

PRODUCT CODE: BZ PUR 450

TWO-COMPONENT POLYUREA COATING MATERIAL FOR WATER WAFFLES, WITH CHAT, COLD

BZ PUR 450 is a fast-curing riding based polyurea system with two components. Specially developed for applications made with rolls or trowels. It has excellent elasticity and a polymerized profile specially formulated to strengthen adhesion. It is an ideal product for commercial and industrial applications requiring high levels of wear resistance and impact strength.

APPLICATION FIELD

- Terraces
- Balconies,
- Bridges and Tunnels,
- Wet volumes,
- Floors,
- Under coating areas,
- reinforced concrete structures.

ADVANTAGES

Provides quick curing.

Easy to Apply.

It does not contain plastic substances.

Toxic catalysts consisting of heavy metals do not contain.

It has excellent thermal resistance.

The product never softens again.

Resistant to cold.

The film retains its elasticity even at -40 °C.

Excellent mechanical properties;

High tensile and tearing force,

Exhibits high wear resistance.

Shows a good degree of chemical resistance.

The product is active in steam transmission.

The film breathes and thus prevents the dew from accumulating under the film solid.

Quality	Unit	Method	Property
Viscosity (Brookfield)	Cp	ASTM D2196-86, 25°C	600-800
Pot life (cap life)	Minutes		15-20 minutes
Touch drying	Minutes		120 minutes
Curing time	Hours		120

Cured product (s onrafrom application) :

APPLICATION INFORMATION:

Quality	Unit	Method	Property
Hardness	Shore A	ASTM D2240 / DIN	80
Rupture (stress) at 23 °C	(N/mm ²)	ASTM D412 / DIN 52455	12
Yawning percentage at 23 °C	%	ASTM D412 / DIN 52455	1200
Tear spread resistance	[N/mm]		40
Service temperature	°C		-40 to 80

Surface Information:

The application surface must be intact. The surface must have a pressure resistance of at least 25 N/mm² and a pull-off test result of at least 1.5 N/mm². The age of the new concrete should be at least 28 days according to the season, concrete surfaces should have a no more than 5-6% deer content. All loose, playful particles must be free of oil and paint left over, cement sorbet. Large

fractures and errors must be repaired in advance. Cement bark and shiny screed on the concrete surface, sandblasting, notching machine, diamond drum wiping machine, driven grinding tools, such as the surface should be roughened and wiped. The entire surface should be dust-free with industrial vacuum cleaner. The relative humidity of the air should be up to 80%, the application temperature (environment and surface) should be between +5°C and +35°C. It should not be rainy 24 hours before application in open areas, during the application and 24 hours after application. The ground temperature should be 3°C above the current sebnemation (dew drop) temperature.

Preparation of the mixture :

It is a two-component product and should be prepared at the specified mixture ratio of the amount to be consumed, taking into account the life of the mixture. In order to obtain a homogeneous mixture, it is important to note that the product temperature is not less than 15°C. Component A should be quickly mixed with a mechanical mixer in its own right, and hardener (Component B) should be added with attention to the mixture ratio. Components A and B should be mixed with a mechanical mixer until homogeneous.

Applied to the Surface:

The mixture, which is ready for application, is applied with rolls or trowels to satiate the surface and close the pores. The new floor application time above the floor is at least 8 hours (20°C), up to 1 day. It is very important that the second floor is implemented within the new floor application period mentioned above.

Consumption Quantity :

Minimum consumption 1.5-2 kg/m²

PACKAGING INFORMATION :

Component A is 8 kg and component B is 4 kg. It is a 12 kg team.

STORAGE INFORMATION :

The material should be stored in a cool and dry place. The life of the material in the original unopened packaging is 1 year for components A and B.

TECHNICAL DATA SHEET

PRODUCT CODE: BZ PUR 560

PRODUCT DESCRIPTION

BZ PUR 560 is a two-component, highly reactive, flexible hybrid polyurea based spray coating.

USAGE AREAS

- Roofs
- Terraces
- Industrial surfaces
- Roads
- Parking Lots
- Pipes
- Car bedliners
- Pools

GENERAL PROPERTIES

- Fast curing
- Seamless coating application
- Application on vertical surfaces
- High mechanical strength
- Chemical resistance
- Corrosion resistance
- Abrasion resistance
- Environmentally friendly (VOC free)

TECHNICAL PROPERTIES

Polymix : BZ PUR 560

Prepolymer : BZ PUR 15N

	Unit	Prepolymer	Polymix	Method
Density (25°C)	g/cm ³	1.10-1.12	1.00-1.05	ASTM D 4052
Viscosity (25°C)	cP	500-750	300-750	ASTM D 4878
Solid Content	%	100	100	In house test method

The information provided herein is true and accurate to the best of our research, experience and knowledge. However, in the case of changes in the conditions and application methods, nothing in this bulletin is to be taken as a warranty, and previous trials are recommended. For further information and assistance, service is supplied by our technical staff and laboratories.

	Unit	Value	Method
Gel Time	sec	8-10	In house test method
Tack Free Time	sec	17-20	In house test method
Hardness	Shore A	85-95	DIN 53505
Tear Strength	N/mm	15-30	ASTM D 624
Elongation	%	400-500	ASTM D 412
Tensile Strength	N/mm ²	10-15	ASTM D 412

APPLICATION METHOD

BZ PUR 560(polymix) and the BZ PUR 15N (prepolymer) should be applied using high pressure and temperature spray equipment in order to ensure homogeneous mixture and application. Prior to the application, surfaces must be free from dust, dirt, oil and similar residues that will prevent the material adhesion.

	Unit	Value
Mixture ratio (iso/poly)	By weight	110/100
	By volume	100/100
Process Temperature	°C	70-80
Process Pressure	bar	120-200

Consumption: For 1 mm thickness polyurea coating 1,1-1,2 kg/m²

STORAGE CONDITIONS / SHELF LIFE / PACKAGING

Storage: BZ PUR 560 and BZ PUR 15N is sensitive to moisture and should therefore be stored in sealed packages.

Shelf life: BZ PUR 560 and BZ PUR 15N can be stored for 6 months in its original sealed packaging at approximately 25°C. Storage at high temperatures shorten the shelf life.

Packaging: BZ PUR 560: Available in 200 kg drum
 BZ PUR 15N: Available in 220 kg drum

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TECHNICAL DATA SHEET

BZ PUR 560

NOTICE REGARDING SAFETY AND USAGE

Material Safety Data Sheet (MSDS) will be provided to you by BUNZEN CHEMICAL sales representative during the product supply. It is advisable to review this form before handling and use and also to check your own handling, safety and process conditions. It is necessary to dispose of the finished product drums according to MSDS. BUNZEN CHEMICAL commits protecting human health and the environment during the production conditions and customer conditions. So BUNZEN CHEMICAL is always ready to help its customers in this regard. Please contact to your BUNZEN CHEMICAL representative when you need help.

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PRODUCT CODE: BZ PUR 670
100% Pure Spray Insulation System Based On Polyurea With Polyamine Curing

BZ PUR 670 is a 100% solid, solvent-free, aromatic waterproofing material consisting of two-component polymeric isocyanate and polyol amine components. As a spray, it can be applied to metal, concrete, wood and other surfaces deemed necessary

APPLICATION AREA

- Roof, terrace and Terrace Gardens,
- Foundation and curtain insulation,
- In the tunnels,
- Waste collection tanks,
- Underground water tanks,
- Insulation and coating of parking lots, water channels,
- Pool and similar water tanks,
- Walking areas,
- Waterproofing on parking lot,
- Waterproofing of Yesil roofs
- Surface coatings of decorative products,
- Protection of metals against corrosion,
- Trapezoidal and sandwich panel roofs,

ADVANTAGES

- ✓ Fast reaction.
- ✓ Applicable on horizontal and vertical surfaces.
- ✓ Provides easy solution for difficult details.
- ✓ Fast application and fast curing.
- ✓ One-piece application provides no joint, no overlay, no details.
- ✓ Provides 100% adherence to the surface.
- ✓ Provides excellent adherence to many surfaces with proper primer use.
- ✓ Low risk of blistering due to high vapor permeability.
- ✓ High mechanical strength.
- ✓ High crack bridging capability.
- ✓ Puncture resistance.
- ✓ Can be used in continuous water contact.
- ✓ Does not soften at high temperatures..
- ✓ Maintains elasticity at low temperatures.
- ✓ Solvent-free

TECHNICAL PROPERTIES

Mix Density (20 °C)		1,05 - 1.10 gr/cm ³
Solids	ASTM D-2697	%100
Ambient Temperature (Application)	+10 °C +35 °C	+10 °C +35 °C
Gel Time (20 °C)		5 - 10 sc
Elongation At Break	ASTM 6-638	% 550
Strength	ASTM D-2240	Shore A 70-75 /Shore D 25-30
Tear Resistance	ASTM D-624	55 - 60
Taber Abrasion Resistance	ASTM D-4060	>75 1000
Adhesion strength (N/mm)	ASTM D-4541	≥42



Quality, environment, Occupational Health and safety management systems are ISO 9001/14001 and OHSAS 18001 approved.

PRODUCT CODE: BZ PUR 670**100% Pure Spray Insulation System Based On Polyurea With Polyamine Curing****SURFACE PREPARATION**

Generally, coating performance and retention to the surface is directly proportional to ground preparation. The biggest reason for failures in surface coating is the lack of adequate and proper surface preparation. It can be applied to newly poured concrete after 28 days. Dust, dirt, oil, corrosion and other impurities should not be present on the surfaces to be applied. If the surface has been coated before, it should be taken into account that the surface can absorb as it will affect the adhesion strength of the coating. In order for the coating to stick to the surface more effectively, it is recommended to use appropriate primer. According to the applications, the preparation of the product and surface to be used may vary. Please contact BUNZEN for suggestions. Isocyanate prepolymer and Amine component can be applied to the desired surface with appropriate spray machines. Special polyurea machines are used for the application, which can operate at high temperature and pressure, disposing material in a 1:1 volumetric ratio. Good in polyurea coating

APPLICATION METHODS

BZ PUR 670 application should be made with specially developed machines and equipment for polyurea applications with recommended pressure characteristics.

CONSUMPTION

Average consumption of 1.1 / m² kg for 1 mm

WATCHPOINTS

Application at temperatures below +5 C is not recommended. Because the Container Life of prepolymer-based products is limited, their complete air contact should be as little as possible. Because it provides very fast curing, the machine should not be applied externally.

PACKAGING

420 kg set A component 200 kg B component 220 kg

STORAGE

6 months from the date of production at temperatures of 15-25C under suitable storage conditions.

SAFETY RECOMMENDATIONS

Preventive measures for the use of conventional chemical products should also be observed when using this product. Hands should be washed with plenty of water when decommissioning or work is completed, food and drink it should not be consumed, it should not be smoked. Specific safety information regarding the use and transportation of this product can be found on the Material Safety Information page. For full information on health and safety issues related to this product, please refer to the relevant health and Safety Information Document. Destruction of this product and its box must be carried out in accordance with applicable local laws. The responsibility for this lies with the end user of the product.

LEGAL NOTICE

The data contained in this technical document are scientific and based on our practical knowledge. Bunzen chemical industry and trade. Co. Ltd. he is solely responsible for the quality of the product. Bunzen Kimya Sanayi Ve Tic from the results that may occur due to improper use and/or other than written recommendations on where and how to use the product.



Kalite, Çevre, İş Sağlığı ve Güvenliği yönetim sistemleri ISO 9001/14001 ve OHSAS 18001 onaylıdır.

BZ PUR 770 ECO

Economical Polyurea Based, Two-Component, Elastic, Fast Curing Waterproofing Membrane

BZ PUR 770 ECO is an economical waterproofing membrane based polyurea system, two-component, solvent-free, crack bridging. Because its reaction is very fast, it can be applied with the help of special machines.

APPLICATION AREA

- Roof, terrace and Terrace Gardens,
- Foundation and curtain insulation,
- In the tunnels,
- Waste collection tanks,
- Underground water tanks,
- Insulation and coating of parking lots,
- Water channels,
- Pool and similar water tanks,
- Walking areas,
- Waterproofing on parking lot,
- Waterproofing of green roofs
- Surface coatings of decorative products,
- Protection of metals against corrosion,
- Trapezoidal and sandwich panel roofs

ADVANTAGES

- Fast reaction.
- Applicable on horizontal and vertical surfaces.
- Provides easy solution for difficult details.
- One-piece application provides no joint, no overlay, no details.
- Provides 100% adherence to the surface.
- Provides excellent adherence to many surfaces with proper primer use.
- Low risk of blistering due to high vapor permeability.
- High mechanical strength.
- High crack bridging capability
- Can be used in continuous water contact.
- Does not soften at high temperatures.
- Maintains elasticity at low temperatures.
- Solvent-free.

TECHNICAL PROPERTIES

Mix Density (20° C)		1,00 - 1.05 gr/cm3
Solid	ASTM D-2697	%100
Ambient Temperature (Application)	+10° C +35° C	+10° C +35° C
Gel Time(20° C)		15 - 20 second
Elongation	ASTM 6-638	% 600
Hardness	ASTM D-2240	Shore A 70-75 /Shore D 25-30
Tear Resistance	ASTM D-624	55 - 60
Taber Abrasion Resistance	ASTM D-4060	>75 1000 dd
Adhesion strength (N/mm)	ASTM D-4541	≥36



Quality, environment, Occupational Health and safety management systems are ISO 9001/14001 and OHSAS 18001 approved.

BZ PUR 770 ECO

Economical Polyurea Based, Two-Component, Elastic, Fast Curing Waterproofing Membrane

SURFACE PREPARATION

Generally, coating performance and retention to the surface is directly proportional to ground preparation. The biggest reason for failures in surface coating is the lack of adequate and proper surface preparation. It can be applied to newly poured concrete after 28 days. Dust, dirt, oil, corrosion and other impurities should not be present on the surfaces to be applied. If the surface has been coated before, it should be taken into account that the surface can absorb as it will affect the adhesion strength of the coating. In order for the coating to stick to the surface more effectively, it is recommended to use appropriate primer. According to the applications, the preparation of the product and surface to be used may vary. Please contact BUNZEN Chemical for suggestions. Isocyanate prepolymer and Amine component can be applied to the desired surface with appropriate spray machines. Special polyurea machines are used for the application, which can operate at high temperature and pressure, disposing material in a 1:1 volumetric ratio. In order to achieve good performance in polyurea coating, sufficient pressure and temperature must be constant during application.

APPLICATION METHODS

BZ PUR 770 Eco application should be made with specially developed machines and equipment for polyurea applications with recommended pressure characteristics.

CONSUMPTION

Average consumption of 1.1 / m² kg for 1 mm

WATCHPOINTS

Application at temperatures below +5 °C is not recommended. Because the Container Life of prepolymer-based products is limited, their complete air contact should be as little as possible. Because it provides very fast curing, the machine should not be applied externally.

PACKAGING

425 kg set A component 200 kg B component 225 kg

STORAGE

12 months from the date of production at temperatures of 15-25°C under suitable storage conditions.

SAFETY RECOMMENDATIONS

Preventive measures for the use of conventional chemical products should also be observed when using this product. Hands should be washed with plenty of water when work is decommissioned or work is completed, food and drink should not be consumed, smoking should not be. Specific safety information regarding the use and transportation of this product can be found on the Material Safety Information page. For full information on health and safety issues related to this product, please refer to the relevant health and Safety Information Document. Destruction of this product and its box must be carried out in accordance with applicable local laws. The responsibility for this lies with the end user of the product.

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TECHNICAL DATA SHEET

PRODUCT CODE: BZ FOAM IN 4

Single Component, Low Viscosity, Polyurethane Based Elastic Injection Resin

PRODUCT DESCRIPTION

BZ FOAM IN 4 is a single component polyurethane based hydrophobic injection resin that reacts with water and creates an elastic mortar in the plug function.

developed for the closure and waterproofing of cracks and joints on the surfaces of the surfaces. Effectively stops water leaks or leaks. It is recommended to use on concrete elements where structural movements are involved.

It is applied with a single component injection pump.

APPLICATION AREAS

- Alkalies
- Subliminal structures such as garages
- Tunnels and underground passageways
- Wastewater, sewage systems
- Warehouses
- Waterways and dams

FEATURES AND BENEFITS

- It performs effectively in sealing cracks and cavities in concrete, especially joints.
- Low viscosity: Penetrates deeply with minimal pressure.
- It is an elastic and completely hydrophobic foam.

Cleaning

Clean all equipment with SOLVENT THINNER. The use of other cleansing substances is not recommended as it may cause the remains of **BZ FOAM IN 4** to solidify.

- It is easy to implement because it is single component. It is ready for use with a very reasonable container life span.
- Its resistance to fungi and other microorganisms is very high.
- Environmentally and user-friendly: It does not contain solvents and propulsive gases. It is safe to store, transport and use.

APPLICATION DETAILS

Surface Preparation:

The surface should be cleaned using pressurization water if possible; oil, grease, fuel and paraffin waste, as well as mold separators, cement waste, chips, loose particles and

completely free of cured membranes. Large holes or gaps can be **filled with BZ SEAL 2K-H**.

Mixing:

Mix BZ FOAM IN 4 with **BZ FOAM IN 4** (catalyst) after adequately taken into the injection machine. The rate of the catalyst is 1% to 10% depending on the temperature and temperature of the lower layer

changes between the two. Before moving on to the application, make it important to note that the mixture does not come into contact with the water. Otherwise, it may react. To prevent an early reaction, the container where the mixture is located must be closed and contained.

Application:

Gradually increase the pumping pressure from the minimum until it reaches the desired level.

upgrade. The injection level (quantity) depends on the size of the space to be filled and the condition of the lower layer. can be stored for a minimum of 12 months in dry environments at temperature. The material in the bucket should be used as soon as possible.

Packaging

20 kg Resin 1,3 kg (catalyst) 21,3 KG set

SHELF LIFE

In unopened original buckets, from 5°C to 25°C

SECURITY INFO

Although it does not contain solvents, it is in the harmful category. For this reason, standard safety precautions should be taken and applied with appropriate protective gloves and clothing. Ask your vendor for the Material Safety Information Form (MSDS).

TECHNICAL FEATURES

Page3/3

BZ FOAM IN4

Quality	Unit	Method	Property
Form	-	-	Clear Brown
Viscosity (Brookfield)	Cp	ASTM D2196-86, 25 °C	300-500
Specific weight	gr/cm ³	ASTM D1475 / DIN 53217 / ISO 2811, 20 °C	1.00-1.10
Ignition point	°C	ASTM D93, closed container	> 110
25°C and 55% relative humidity (RH) drying time – the catalyst ratio in the mixture Depends.	Hours	-	2

BZ FOAM IN 4 (catalyst):

Quality	Unit	Method	Property
Form	-	-	light yellow color Liquid
Viscosity (Brookfield)	Cp	ASTM D2196-86, 25 °C	60
Specific weight	gr/cm ³	ASTM D1475 / DIN 53217 / ISO 2811, 20 °C	0.94
Ignition point	°C	ASTM D93, closed container	> 110

SAFETY ADVICE Preventive measures for the use of customary chemical products should also be observed when using this product. When work is suspended or when the work is completed, hands should be washed with plenty of water, food and drink should not be consumed, smoking should not be smoked. Special safety information about the use and transportation of this product can be found on the Material Safety Information Page. For full information about health and safety issues related to this product, the relevant Health and Safety Information Document should be applied. The destruction of this product and its box must be carried out in accordance with applicable local law. The end user of the product responsible for this.

PRODUCT CODE: BZ FLEXAL**Elastomeric Resin Based, UV Resistant One
Component Waterproofing
Membrane****BZ FLEXAL**

Acrylic-based, one-component liquid plastic coating and elastic waterproofing membrane

USAGE AREA

- Concrete, plaster, cement board, galvanized, zinc, aluminum, PVC, polyester, wood covered sloped In the insulation of roofs and terraces
- Waterproofing of the exterior of buildings,
- It is used for the insulation of details such as cracks, eaves, chimney bottoms.

ADVANTAGES

- Ready to use, easily applied with a brush or roller.
- 600% elastic..
- It has effective water vapor permeability.
- Highly resistant to UV
- Maintains its flexibility at low temperatures.
- Can be over painted

APPLICATION DETAILS

Care should be taken to ensure that the cement-based surfaces of the buildings that come into contact with water are solid, dry, bearing, dust-free and clean, as well as in balance. The surface should be thoroughly cleaned of all kinds of oil, grease, rust and paraffin residues that will weaken adherence and there should be no loose particles on the surface.

Application**Mixture**

BZ FLEXAL does not require mixing since it has one component.

Primer Application

By taking 1 kg from BZ FLEXAL, 6 liter of water is added and mixed with a mixer of 400-600 rpm for 3-5 minutes until a homogeneous mixture is obtained. The material should be distributed evenly with a suitable brush or roller, and it should be applied without allowing on horizontal surfaces. The primer is waited to dry and the application is started BZ FLEXAL is applied with a brush, roller or a suitable spraying machine in the amount specified in the consumption table, depending on the environmental conditions to be applied.

- In application, ambient and surface temperature

If it is below +5 C or above +30 C, suitable temperatures should be expected.

- In exterior surface applications, the surface must be protected from sun, wind, frost or rain for the first 24 hours.

- BZ FLEXAL should not be applied when it is raining or if it is likely to rain.

- Reaction slows down at low temperatures, which increases pot life and working time. High temperatures accelerate the reaction and the times mentioned above decrease accordingly. For the material to complete its curing, the ambient and ground temperature should not fall below the allowed minimum temperature.

CLEANING OF TOOLS

Uygulamadan sonra kullanılan alet ve ekipmanlar sabunlu ılık su ile temizlenmelidir. BZ FLEXAL sertleştikten sonra uygun solvent ile mekanik olarak yüzeyden temizlenebilir.

PACKAGE

20 kg



BZ FLEXAL

Elastomeric Resin Based, UV Resistant One Component Waterproofing Membrane

TECHNICAL SPECIFICATIONS

Solvent	Water Based
Color	All requested can be produced in colors
Application Tools	Roller (synthetic epoxy), brush, spray
Density	1,45 gr / cm
Application Temperature	+5°C + 30°C
Adhesion strength (N/mm2)	Crack bridging flexible systems without trafficking $\geq 0,8$
Viscosity (25°C, mPa.s)	13000 – 15000
Touch-free Drying	3 hours
Elongation	%600

SAFETY RECOMMENDATIONS

Preventive measures for using conventional chemical products should also be observed while using this product. When work is interrupted or when the work is completed, hands should be washed with plenty of water, no food and drink should be consumed, and no smoking. Specific safety information regarding the use and transportation of this product can be found in the Material Safety Data Sheet. For full information on Health and Safety issues for this product, the relevant Health and Safety Data Sheet should be consulted. Disposal of this product and its container must be done in accordance with applicable local laws. The responsibility for this lies with the end user of the product.

LEGAL WARNING

The data contained in this technical document are based on our scientific and practical knowledge. Bunzen Kimya Sanayi ve Tic. Ltd. Şti. it is only responsible for the quality of the product. Bunzen Kimya Sanayi ve Tic. Ltd. Şti. can not be held responsible. This technical document is valid until the new one is printed and makes old editions void.





CERTIFICATES



Oasis
ISOLATION SOLUTIONS
الواحة لحلول العزل



CERTIFICATE



CERTIFICATE OF CONFORMITY

UYGUNLUK SERTİFİKASI

To The Manufacturer/Aşağıdaki Üretici için

BUNZEN KİMYA SANAYİ VE TİCARET LİMİTED ŞİRKETİ

DERİ OSMAN MAH. TUŞE SK. NO: 4 TUZLA / İSTANBUL / TÜRKİYE

Product and designation of type/Ürün ve Belirtilen tipleri

polyurethane acrylic epoxy insulation injection and polyurea chemicals – BZ series
(Bunzen Branded-Cast-Type)

Poliüretan, Akrilik, Epoks, İzolasyon, Enjeksiyon ve Polyurea Kimyasalları – BZ
serisi (Bunzen Markalı-Dökme Tip)

**The samples tested is covered by following EU -Directive/Test edilen numuneler aşağıdaki
yönetmelik kapsamındadır**

305/2011/EU, CPD-Construction Products Directive/Yapı Malzemeleri Yönetmeliği
EN 1176-1:2008, EN 1177:2008

For this following test report edit/Bu kapsamda aşağıdaki test raporu düzenlenmiştir
28.02.2018 DRS-180221

Observing all EU-Directive referans fort he product, the CE mark can be available on the products/ ürüne all
yönetmelikler referans alındığında ürünler üzerinde CE işareti kullanılabilir

This certificate is the covers of periodically tested products in the production. Does not cover all products produced,
covers the above products/ bu sertifikat, belli periyotlarda test edilen ürünlerin üretimini kapsamaktadır, üretilen tüm
ürünleri kapsamaz, yukarıdaki ürünleri kapsar

Sertifika no/Certificate No:
Date of Initial Registration/İlk Kayıt Tarihi:
Date of Expiry/Geçerlilik Süresi:

CE-18.04.133
25.04.2018
24.04.2019



DSR ULUSLARARASI GÖZETİM VE BELGELENDİRME HİZMETLERİ LTD. ŞTİ.
Yayınlar Mah. Fıstık Sok. No: 43 Daire: 2 Tel: +90 216 806 06 26 FENİCH / İSTANBUL / TÜRKİYE
E-mail: info@dsrgoretim.com - Web: www.dsrgoretim.com



CERTIFICATE

This certificate /Bu sertifika

BUNZEN KİMYA SANAYİ VE TİCARET LİMİTED ŞİRKETİ

İSTANBUL DERİ OSB MAH. TUŞE SK. NO:4 TUZLA-İSTANBUL/TÜRKİYE

The above-mentioned company, accord to the ISO 18001 OHSAS standart and the company's request for the following scope given by **EINCERT** international certification and test service / Yukarıda adı geçen firmaya, ISO 18001 OHSAS standardına göre ve firmanın isteği üzerine aşağıdaki kapsam için **EINCERT** uluslar arası sertifikasyon ve test hizmetleri tarafından verilmiştir.

ISO 18001 OHSAS



QUALITY
MANAGEMENT

Scope of Certification/Belgelendirme kapsamı

BİRİNCİL FORMDA ALKİD REÇİNE, POLYESTER REÇİNE,
EPOKSI REÇİNE, POLİASETAL, POLİKARBONAT İLE DİĞER
POLİETER VE POLYESTER İMALATI

PRIMARY FORM OF ALKYD RESIN, POLYESTER RESIN,
EPOXY RESIN, POLYACETAL, POLYCARBONATE,
OTHER POLYETHER AND POLYESTER MANUFACTURING



Certificate No/Belge No: 102422

Date of Issue/Veriliş Tarihi :

14.12.2018

Expiration date/Geçerlilik tarihi :

14.12.2019

Certification manager / Belgelendirme sorumlusu

This document is valid as long as the company complies with the rules of certification **EINCERT**.
For more information about the period of validity of the document can be examined www.eincert.com.tr
Bu belge firmanın **EINCERT**'in belgelendirme kurallarına uyduğu sürece geçerlidir.
Belgenin geçerlilik devamı ile ilgili bilgi için www.eincert.com.tr sitesinde incelenebilir.

Quality Management System



CERTIFICATE

This certificate /Bu sertifika

BUNZEN KİMYA SANAYİ VE TİCARET LİMİTED ŞİRKETİ

İSTANBUL DERİ OSB MAH. TUŞE SK. NO:4 TUZLA-İSTANBUL/TÜRKİYE

The above-mentioned company, accord to the ISO 14001 standart and the company's request for the following scope given by **EINCERT** international certification and test service / Yukarıda adı geçen firmaya, ISO 14001 standardına göre ve firmanın isteği üzerine aşağıdaki kapsam için **EINCERT** uluslar arası sertifikasyon ve test hizmetleri tarafından verilmiştir.

ISO 14001



QUALITY
MANAGEMENT

Scope of Certification/Belgelendirme kapsamı

BİRİNCİL FORMDA ALKİD REÇİNE, POLYESTER REÇİNE, EPOKSİ REÇİNE, POLİASETAL, POLİKARBONAT İLE DİĞER POLİETER VE POLYESTER İMALATI

PRIMARY FORM OF ALKYD RESIN, POLYESTER RESIN, EPOXY RESIN, POLYACETAL, POLYCARBONATE, OTHER POLYETHER AND POLYESTER MANUFACTURING



Certificate No/Belge No: 102421

Date of Issue/Veriliş Tarihi :

14.12.2018

Expiration date/Geçerlilik tarihi :

14.12.2019

Certification manager / Belgelendirme

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Quality Management System



CERTIFICATE

This certificate /Bu sertifika

BUNZEN KİMYA SANAYİ VE TİCARET LİMİTED ŞİRKETİ

İSTANBUL DERİ OSB MAH. TUŞE SK. NO:4 TUZLA-İSTANBUL/TÜRKİYE

The above-mentioned company, accord to the ISO 10002 standart and the company's request for the following scope given by **EINCERT** international certification and test service / Yukarıda adı geçen firmaya, ISO 10002 standardına göre ve firmanın isteği üzerine aşağıdaki kapsam için **EINCERT** uluslar arası sertifikasyon ve test hizmetleri tarafından verilmiştir.

ISO 10002



QUALITY
MANAGEMENT

Scope of Certification/Belgelendirme kapsamı

BİRİNCİL FORMDA ALKİD REÇİNE, POLYESTER REÇİNE,
EPOKSİ REÇİNE, POLİASETAL, POLİKARBONAT İLE DİĞER
POLİETER VE POLYESTER İMALATI

PRIMARY FORM OF ALKYD RESIN, POLYESTER RESIN,
EPOXY RESIN, POLYACETAL, POLYCARBONATE,
OTHER POLYETHER AND POLYESTER MANUFACTURING



Certificate No/Beige No: 102420

Date of Issue/Veriliş Tarihi:

14.12.2018

Expiration date/Geçerlilik tarihi:

14.12.2019

Certification manager / Belgelendirme sorumlusu

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Quality Management System



CERTIFICATE

This certificate /Bu sertifika

BUNZEN KİMYA SANAYİ VE TİCARET LİMİTED ŞİRKETİ

İSTANBUL DERİ OSB MAH. TUŞE SK. NO:4 TUZLA-İSTANBUL/TÜRKİYE

The above-mentioned company, accord to the ISO 9001:2015 standart and the company's request for the following scope given by **EINCERT** international certification and test service / Yukarıda adı geçen firmaya, ISO 9001:2015 standardına göre ve firmanın istegi üzerine aşağıdaki kapsam için **EINCERT** uluslar arası sertifikasyon ve test hizmetleri tarafından verilmiştir.

ISO 9001:2015



QUALITY
MANAGEMENT

Scope of Certification/Belgelendirme kapsamı

BİRİNCİL FORMDA ALKİD REÇİNE, POLYESTER REÇİNE,
EPOKSİ REÇİNE, POLİASETAL, POLİKARBONAT İLE DİĞER
POLİETER VE POLYESTER İMALATI

PRIMARY FORM OF ALKYD RESIN, POLYESTER RESIN,
EPOXY RESIN, POLYACETAL, POLYCARBONATE,
OTHER POLYETHER AND POLYESTER MANUFACTURING



Certificate No/Belge No: 102419

Date of Issue/Veriliş Tarihi :

14.12.2018

Expiration date/Geçerlilik tarihi :

14.12.2019

Certification manager / Belgelendirme

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Quality Management System



CERTIFICATE

This certificate /Bu sertifika

BUNZEN KİMYA SANAYİ VE TİCARET LİMİTED ŞİRKETİ

İSTANBUL DERİ OSB MAH. TUŞE SK. NO:4 TUZLA-İSTANBUL/TÜRKİYE

The above-mentioned company, accord to the ISO 18001 OHSAS standart and the company's request for the following scope given by **EINCERT** international certification and test service / Yukarıda adı geçen firmaya, ISO 18001 OHSAS standardına göre ve firmanın isteği üzerine aşağıdaki kapsam için **EINCERT** uluslar arası sertifikasyon ve test hizmetleri tarafından verilmiştir.

ISO 18001 OHSAS



QUALITY
MANAGEMENT

Scope of Certification/Belgelendirme kapsamı

BİRİNCİL FORMDA ALKİD REÇİNE, POLYESTER REÇİNE,
EPOKSI REÇİNE, POLİASETAL, POLİKARBONAT İLE DİĞER
POLİETER VE POLYESTER İMALATI

PRIMARY FORM OF ALKYD RESIN, POLYESTER RESIN,
EPOXY RESIN, POLYACETAL, POLYCARBONATE,
OTHER POLYETHER AND POLYESTER MANUFACTURING



Certificate No/Belge No: 102422

Date of Issue/Veriliş Tarihi :

14.12.2018

Expiration date/Geçerlilik tarihi :

14.12.2019

Certification manager / Belgelendirme sorumlusu

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Belgenin geçerlilik devamı ile ilgili bilgi için www.eincert.com.tr sitesinde incelenebilir.

Quality Management System



CERTIFICATE

RoHS

CERTIFICATE OF CONFORMITY

ROSH UYGUNLUK SERTİFİKASI

To The Manufacturer/Aşağıdaki Üretici için

BUNZEN KİMYA SANAYİ VE TİCARET LİMİTED ŞİRKETİ .

DERİ OSB MAH TUŞE SK. NO: 4 TUZLA / İSTANBUL / TÜRKİYE

Product and designation of type/Ürün ve Belirtilen tipleri

Polyurethane acrylic epoxy insulation injection and polyurea chemicals – BZ series
(Bunsen Branded-Cast-Type)

Poliüretan, Akrilik, Epoksi İzolasyon, Enjeksiyon ve Polyurea Kimyasalları –BZ serisi
(BUNZEN Markalı-Dökme Tip)

Applicable Standarts/Uygulanana Standartlar

EN 1176-1:2008, EN 1177:2008

The samples tested is covered by the following EU-Directive /Test edilen numuneler aşağıdaki yönetmelik kapsamındadır

2002/95/EC, RoHS Directive/Elektrikli ve Elektronik Aygıtlarda Belli Başlı Zararlı Maddelerin Kullanımını Kısıtlayan Yönetmelik 2002/95/EC

For this following test report edit/Bu kapsamda aşağıdaki test raporu düzenlenmiştir
RoSH20180201

This certificate is the covers of periodically tested products in the productions. Does not cover all products produced, covers the above products/ Bu sertifika, belli periyotlarla test edilen ürünlerin üretimini kapsamaktadır, üretilen tüm ürünleri kapsamaz, yukarıdaki ürünleri kapsar

Sertifika no/Certificate No:

RoSH-18.04.133

İlk Kayıt Tarihi /Date of initial Registration:

25.04.2018

Date of Expiry/Geçerlilik Süresi:

24.04.2019

DSR ULUSLARARASI GÜZETİM VE BELGELENDİRME HİZMETLERİ LTD. ŞTİ.

Yasınlar Mah. Ejani Sk. No: 42 Daire: 2 Tel: +90 216 408 06 35 PENDİK / İSTANBUL / TÜRKİYE
E-mail: info@dsrgazetim.com - Web: www.dsrgazetim.com





EXPERIMENT REPORT

Report Number:2019-11-12-11-10-58

Report Date: 16.12.2019

Prepared by:Dr. Erhan Bat, METU Chemical Engineer Dept., Ankara

SUBJECT

In this report, BZ PUR 670 polyurea branded two component cement polymer based waterproofing material in the annex of BUNZEN Kimya Sanayi ve Ticaret Ltd. Sirketi dated 12.11.2019 is in compliance with BS 6920 standard and it is suitable for use in drinking water systems in terms of metallic contamination.

EXAMINATION RESULTS

Cured BZ PUR 670 polyurea samples sent by the company to determine the amount of elements that can be transferred to water in accordance with BS 6920 Part-1 Art. 8 are left in contact with ultra-pure water according to Section 2.6 of the relevant standard. Inductively coupled plasma mass spectrometry (ICP-MS) was used to analyze the sample. The arithmetic mean results of parallel measurements are shown in the table below.

Yapılan Analiz	Sinir	Sonuç
Alüminyum (Al) Miktarı, μ g/L	≤ 200	<5
Antimon (Sb) Miktarı, μ g/L	≤ 5	<0.01
Arsenik(As) Miktarı, μ g/L	≤ 10	<0.1
Baryum (Ba) Miktarı, μ g/L	≤ 1000	1.22
Kadmiyum (Cd) Miktarı, μ g/L	≤ 5	<0.01
Krom(Cr) Miktarı, μ g/L	≤ 50	<0.06
Demir (Fe) Miktarı, μ g/L	≤ 200	<2.0
Kurşun (Pb) Miktarı, μ g/L	≤ 25	<0.01
Manganez (Mn) Miktarı, μ g/L	≤ 50	<0.08
Civa(Hg) Miktarı, μ g/L	≤ 1	<0.03
Nikel (Ni) Miktarı, μ g/L	≤ 20	<0.03
Selenyum (Se) Miktarı, μ g/L	≤ 10	<8

The BZ PUR 670 branded product of BUNZEN Kimya Sanayi ve Ticaret Ltd. Sirketi is suitable for use in drinking water systems within the scope of BS 6920 in terms of the above mentioned element impurities that may enter water.

Kimya Mühendisliği Bölümü / Dr. Erhan Bat