



CONSTRUCTION CHEMICALS



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PRODUCT CATALOGUE

POLYURETHANE WATERPROOFING - INDUSTRIAL FLOOR COATING
PU INJECTION - PRIMERS - COMPLEMENTARY PRODUCTS



COMPANY PROFILE

Clever Polymers and Construction Chemicals Inc. develops and produces waterproofing polyurethane membrane, protective paints, polyurethane resins and final products for world of Construction and Architectural Detail Solutions in its Gebze/Turkey Factory.

With infrastructure based on innovative, high-tech research and development, it aims to provide high quality, internationally certified, wide range of products and services.

We are designing and manufacturing permanent high-tech products of waterproofing and continuously being a respectable player in international market, acting with the principle of excellence, innovation and also creativity and solution-oriented.

Furthermore Clever Polymers Construction Chemicals Inc. manufacturers polyurethane liquid membranes, bitumen rubberized waterproofing liquid membranes, eco friendly aqua polyurethane systems, polyurethane injection and many types of primers in its modern facilities.

Thus Clever Polymers and Construction Chemicals Inc. aims to be 'The Most Preferred Company of Waterproofing Industry In International Area' by increasing its business volume with its trusted business partners, customers, distributors day by day.

Quality,

Clever Polymers provides integrated solutions to its customers and business partners with its expert technical team.

Clever Polymer has ISO 9001 quality assurance system, ISO 14001 environmental management system and OHSAS 45001 occupational health and safety systems.



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DESCRIPTION

PU 110 PLUS is a single component, low viscosity, polyurethane based, liquid waterproofing membrane. Creates a durable and elastic layer by curing with the humidity in the air. PU 110 PLUS is suitable for application by airless spray due to its low viscosity.

TYPICAL APPLICATIONS

- Car parks,
- Irrigation channels,
- Bitumen membranes,
- Bridge platforms,
- Stadium tribunes,
- Gypsum and cement panels,
- Terraces, verandas and balconies,
- Roofs exposed to UV,
- Wet areas under the coating (bathroom, kitchen, etc.),
- EPDM membranes.

FEATURES AND ADVANTAGES

- Easy to apply (brush, roller or spray).
- When applied, it forms a one-piece layer that does not cause joint formation or leakage.
- Resistant to continuous water contact.
- It maintains its mechanical properties between -40°C and $+80^{\circ}\text{C}$.
- It is permeable to water vapor. Having a breathable structure it does not cause accumulation in the substrate.
- When the material is damaged, it can be repaired quickly with PU 110 PLUS.
- Provides excellent adhesion to the surface.
- Excellent UV resistance.
- Excellent chemical resistance.
- As its white color, it reflects the UV lights and prevent the heat increases of the substrate which is under coating noticeably.
- Excellent mechanical properties, tear and tensile strength.
- Does not contain toxic substances after fully curing.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
- Humidity: $W < 10\%$
- Temperature: $+5^{\circ}\text{C}$ and $+35^{\circ}\text{C}$
- Relative Humidity: $< 85\%$

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

In order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface before the application. The surface should be thoroughly dried after washing with high pressure water and should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should be used on non-absorbent surfaces such as metal and ceramic. Please examine primer table for detailed information.

• APPLICATION

Before using, the package should be opened and mixed with a low speed mixer for 2-3 minutes. For spray application, add CLEVER 001 at a maximum rate of 5%-7%. The previously primed surface should be applied with a roller or brush until the entire surface is covered, by pouring the product in at least two layers. After the first coat is applied, the second coat should be applied within minimum 6 and maximum 24 hours later. If the application of the second layer has not been made within the specified time, before application please consult to the technical office of CLEVER POLYMERS for information and solutions. If needed, in order to increase the acceleration of the drying process in cold weather, It is recommended to use ACC CATALYST. Consult our technical department for thinning.

APPLICATION REMARKS

- It should be covered with PU 650 TC-1K or PU 600 TC-1K Aliphatic flexible top coat material in order to extend the strength and shelf life of polyurethane based waterproofing products which are applied to areas exposed to open air conditions or pedestrian traffic.
- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

- First Layer (minimum) : 0,75 - 0,90 kg/m²
- Second Layer (minimum) : 0,75 - 0,90 kg/m²
- Airless Spray (for each layer) : 0,75 - 0,90 kg/m²
- Total Consumption (minimum) : 1,50 - 1,80 kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

It is white and in 5 kg and 25 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in unopened original pail at temperatures between $+5^{\circ}\text{C}$ and $+25^{\circ}\text{C}$. Opened product should be used at the soonest.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,35 (±0,05) gr/cm ³
Viscosity	ASTM D 4287 (+25°C)	2000 - 5000 cp
Flash Point	ASTM D93	42 °C
Water Vapor Permeability	ASTM E96	0,8 gr/m ² hour
Gloss	Clever Lab.	Semi Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Shock Heat Resistance	Clever Lab.	200°C - Passed
Solid Content	Clever Lab.	90% (±5)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	> 60 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> 500%
Tensile Strength	ASTM D 412 (+23°C)	> 8 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
Tensile State After 300% Elongation	ASTM D412	< 3%
QUV	ASTM G53	2000 Hours - Passed
Service Temperature	Clever Lab.	-40°C to +80°C
Tack Free Time	25°C / 55% RH	6 hours
Recoat Time	Clever Lab.	6 to 24 Hours
Hydrolysis (%8 KOH, 15 days at 50 °C)	Clever Lab.	No significant change observed in elastomeric characteristic
Hydrolysis (H₂O, 30 days rotative, 60-100 °C)	Clever Lab.	No significant change observed in elastomeric characteristic
HCl (PH=2, 10 days at RT)	Clever Lab.	No significant change observed in elastomeric characteristic
Thermal Resistance (100 days at 80 °C)	EOTA TR011	Passed

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU 110 is a single component, easily applied, polyurethane based, liquid waterproofing membranes. It creates an elastic and durable film layer by curing with the humidity in the air.

TYPICAL APPLICATIONS

- Car parks,
- Irrigation channels,
- Asphalt membranes,
- Gypsum and cement panels,
- Exposed roofs,
- Indoor and outdoor applications,
- Terrace, veranda and balconies,
- Wet areas in indoor (bathroom, kitchen and etc.).

FEATURES AND ADVANTAGES

- PU 110 is Certified according to ETAG 005, W3 category.
- Easy to apply (by brush, roller or spray).
- When applied it forms a one-piece layer that does not cause joint formation or leakage.
- Resistant to continuous water contact.
- Preserves its mechanical properties between -40°C and +90°C.
- It is permeable to water vapor. Having a breathable structure it does not cause accumulation in the substrate.
- When the material is damaged, it can be repaired easily and quickly with PU110.
- Excellent UV resistance.
- Excellent chemical resistance.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
 - Humidity: W <10%
 - Temperature: + 5 °C and + 35 °C
 - Relative Humidity: <85%
- For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPERATION

In order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface before the application. The surface should be thoroughly dried after washing with high pressure water and should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

• APPLICATION

Before using, the package should be opened and mixed with a low speed mixer for 2-3 minutes. For spray application, add CLEVER 001 at a maximum rate of 5% - 7%. The primed surface should be applied with a roller, squeegee or brush until the entire surface is covered, by pouring the product within minimum 2 layers. After the first layer is applied, the second layer should be applied minimum 6 hours and maximum 24 hours later. If the application has not been made within the specified time for the second layer, please consult the technical office of CLEVER POLYMERS for information and solutions before application. In order to increase the acceleration of the drying in cold weather, it is recommended to use ACC CATALYST if desired. Consult our technical department for thinning process.

APPLICATION REMARKS

- It should be covered with PU 650 TC-1K or PU 600 TC-1K aliphatic flexible top coat material in order to extend the strength and shelf life of polyurethane based waterproofing products which are applied to areas exposed to open air conditions or pedestrian traffic.
- Not recommended for loose and unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

- First Layer (minimum): 0,70 - 0,90 kg/m²
- Second Layer (minimum): 0,70 - 0,90 kg/m²
- Airless Spray (for each layer): 0,75 - 0,90 kg/m²
- Total Consumption (minimum): 1,40 - 1,80 kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

It is white and grey in 5 kg and 25 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in unopened original pail at temperatures between + 5°C and +25°C. Opened product should be used at the soonest.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,40 ±0,05 gr/cm ³
Viscosity	ASTM D4287 (+25°C)	3000 - 6000 cp
Flash Point	ASTM D93	35 °C
Water Vapor Permeability	ASTM E96	0,8 gr/m ² hour
Gloss	Clever Lab.	Semi-Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Shock Heat Resistance	Clever Lab.	200°C - Passed
Solid Content	Clever Lab.	%85 (±5)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	60 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> %500
Tensile Strength	ASTM D 412 (+23°C)	> 6 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
QUV	ASTM G53	2000 hours - Passed
Service Temperature	Clever Lab.	-40°C to +90°C
Tack Free Time	25°C / 55% RH	4 hours
Recoat Time	Clever Lab.	6 to 24 Hours
Hydrolysis (%8 KOH, 15 days at 50 °C)	Clever Lab.	No significant change observed in elastomeric characteristic
Hydrolysis (H ₂ O, 30 days rotative, 60-100 °C)	Clever Lab.	No significant change observed in elastomeric characteristic
HCl (PH=2, 10 day at RT)	Clever Lab.	No significant change observed in elastomeric characteristic
Hydrolysis (H ₂ O, RT 100 °C 14 days rotative)	Clever Lab.	No significant change observed in elastomeric characteristic
Thermal Resistance (100 days at 80 °C)	EOTA TR011	Passed

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

CLASSIFICATION ACCORDING TO EOTA GUIDELINE (EUROPEAN ORGANISATION OF TECHNICAL APPROVAL)

REQUIREMENT	PU 110	PU 110
Minimum Expected Working Life	W3 (25 years)	W2 (10 years)
Climatic Zone	S (severe)	
Used Load	P1	P3
Roof Slope	S1-S4	
Minimum Surface Temperature	TL3 (-20 °C)	
Maximum Surface Temperature	TH4 (90 °C)	TH3 (80 °C)
Exposure To External Fire	Broof (t1,t4)	
Reaction To Fire	Class E	



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DESCRIPTION

PU 120 is a single component, polyurethane based, liquid waterproofing membrane. Creates an elastic and durable film layer by curing with the humidity in the air.

TYPICAL APPLICATIONS

- Terrace, veranda and balconies,
- Wet areas under coating (bathroom, kitchen, etc.),
- Indoor and outdoor application areas,
- Irrigation channels,
- Bitumen membranes,
- Gypsum and cement panels,
- Non exposed roofs.

FEATURES AND ADVANTAGES

- Easy to apply (by brush, roller or spray).
- When applied it forms a single piece membrane that does not cause joint formation or leakage.
- It is resistant to continuous water contact.
- It preserves its mechanical properties between -30°C and +90°C.
- It is permeable to water vapor. Having a breathable structure it does not cause accumulation in the substrate.
- When the material is damaged, it can be repaired quickly with PU120.
- It has UV resistant.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 =15 Mpa
- Humidity : W <10%
- Temperature : +5°C and +35°C
- Relative Humidity : <85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

In order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface before the application. The surface should be thoroughly dried after washing with high pressure water and should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

• APPLICATION

Before using, the package should be opened and mixed with a low speed mixer for 2-3 minutes. For spray application, add CLEVER 001 at a maximum rate of 5%-7%. The previously primed surface should be applied with a roller, squeegee or brush until the entire surface is covered, by pouring the product in at least two layers. After the first coat is applied, the second coat should be applied within minimum 6 and maximum 24 hours. If the application of the second layer has not been made within the specified time, before application please consult to the technical office of CLEVER POLYMERS for information and solutions. If needed, in order to increase the acceleration of the drying process in cold weather, it is recommended to use ACC CATALYST. Consult our technical department for thinning.

APPLICATION REMARKS

- It should be covered with PU 650 TC-1K or PU 600 TC-1K Aliphatic flexible top coat material in order to extend the strength and shelf life of polyurethane based waterproofing products which are applied to areas exposed to open air conditions or pedestrian traffic.
- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

- First Layer (min.) : 0,60 - 0,75 kg/m²
- Second Layer (min.) : 0,60 - 0,75 kg/m²
- Airless Spray (for each layer) : 0,75 - 0,90 kg/m²
- Total Consumption (min.) : 1,20 - 1,50 kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

It is grey and in 5 kg and 25 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in unopened original pail at temperatures between + 5°C and +25°C. Opened product should be used at the soonest.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,45 ± 0,05 gr/cm ³
Viscosity	ASTM D 4287 (+25°C)	3000 - 6000 cp
Water Vapor Permeability	ASTM E96	0,8 gr/m ² hour
Gloss	Clever Lab.	Semi Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Heat Resistance	Clever Lab.	100 days at +80 °C
Shock Heat Resistance	Clever Lab.	200°C - Passed
Solid Content	Clever Lab.	%85 (±5)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	65 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> %400
Tensile Strength	ASTM D 412 (+23°C)	> 4 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
QUV	ASTM G53	2000 Hours - Passed
Service Temperature	Clever Lab.	-30°C to +90°C
Tack Free Time	25°C / 55% RH	6 hours
Recoat Time	Clever Lab.	6 to 24 Hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU 100 is a single component, fast curing polyurethane based liquid waterproofing membrane. It creates an elastic, thick and durable film layer by curing with the humidity in the air.

TYPICAL APPLICATIONS

- Uncovered roofs,
- Irrigation channels,
- Terraces, verandas and balconies,
- Wet areas under the coating (bathroom, kitchen, etc.),
- Car parks,
- Gypsum and cement panels,
- Light roofs made of metal or fiber cement,
- Indoor and outdoor application areas,
- Bridge platforms,
- Stadium stands,
- EPDM membranes.

FEATURES AND ADVANTAGES

- Fast curing (approx. 2 hours).
- It provides a thick and bubble-free layer.
- It is suitable for single layer application.
- Easy to apply (by brush, roller or airless spray).
- When applied, it forms a single piece membrane that does not cause joint formation or leakage.
- It is resistant continuous water contact.
- It preserves its mechanical properties between -40°C and + 90°C.
- It is permeable to water vapor. Having a breathable structure it does not cause accumulation in the substrate.
- When the material is damaged, it can be repaired quickly and easily with PU 100.
- It has excellent UV resistant.
- It has excellent chemical resistant.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
 - Humidity: W <10%
 - Temperature: +5 °C and +35 °C
 - Relative Humidity: <85%
- For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPERATION

In order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface before the application. The surface should be thoroughly dried after washing with high pressure water and should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should also be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

• APPLICATION

Before using, the package should be opened and mixed with a low speed mixer for 2-3 minutes. For spray application, add CLEVER 001 at a maximum rate of 5% - 7%. The previously primed surface should be applied with a roller or brush until the entire surface is covered, by pouring the product at single or two layers. After the first coat is applied, the second coat should be applied within minimum 6 and maximum 48 hours. If the application of the second layer has not been made within specified time, before application please consult to the technical office of CLEVER POLYMERS for information and solutions. Consult our technical department for thinning.

APPLICATION REMARKS

- It should be covered with PU 650 TC-1K or PU 600 TC-1K Aliphatic flexible top coat material in order to extend the strength and shelf life of polyurethane based waterproofing products which are applied to areas exposed to open air conditions or pedestrian traffic.
- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

Total Consumption: 1,80 - 2,60 kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

It is grey and in 5 kg and 25 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in unopened original pail at temperatures between + 5°C and +25°C. Opened product should be used at the soonest.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,40 ± 0,05 gr / cm ³
Viscosity	ASTM D4287 (+25°C)	2000 - 5000 cp
Flash Point	ASTM D93	35 °C
Water Vapor Permeability	ASTM E96	0,8 gr/m ² hours
Gloss	Clever Lab.	Semi-Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Heat Resistance	Clever Lab.	100 days at +80°C
Sudden Shock Heat	Clever Lab.	200°C - Passed
Solid Content	Clever Lab.	85% (±5)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	70 (Shore A)
Elongation	ASTM D 412 (+23°C)	> 400%
Tensile Strength	ASTM D 412 (+23°C)	> 6,5 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
Tensile State After 300% Elongation	ASTMA D412	< 3%
QUV	ASTM G53	2000 Hours - Passed
Service Temperature	Clever Lab.	-40°C to +90°C
Tack Free Time	25°C / 55% RH	2-3 Hours
Recoat Time	Clever Lab.	6 hours to 48 hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU140 is a single component polyurethane based, thixotropic waterproofing membrane. It cures with the humidity in the air, easily applied. It forms a durable and elastic film layer by adhering seamlessly to the surface on which it is applied.

TYPICAL APPLICATIONS

- Vertical surfaces,
- Veranda and balconies,
- Walls,
- In the protection of PU foams,
- Wet areas,
- Flower pots.

FEATURES AND ADVANTAGES

- Application on vertical surfaces.
- Thixotropic.
- Easy to apply (with roller or airless spray).
- Being a pure Polyurethane it is water-resistant.
- It preserves its mechanical properties between -40 °C and +60 °C.
- Low solvent.
- No toxic material content when totally cured.
- It is permeable to water vapor. Having a breathable structure it does not cause moisture accumulation in the substrate.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
 - Humidity: W <10%
 - Temperature: +5°C and +35°C
 - Relative Humidity: <85%
- For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

In order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface before the application. The surface should be thoroughly dried after washing with high pressure water and should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should be used on non-absorbent surfaces such as metal and ceramic. Please examine primer table for detailed information.

• APPLICATION

Before the application, mix it with a low-speed mixer for 2-3 minutes. For spray application, add CLEVER 001 at a maximum rate of 5%-7%. The previously primed surface should be applied with a roller or brush until the entire surface is covered, by pouring the product in at least two layers. After the first coat is applied, the second coat should be applied within minimum 8 and maximum 24 hours. If the application of the second layer has not been made within the specified time, before application please consult to the technical office of CLEVER POLYMERS for information and solutions. If needed, in order to increase the acceleration of the drying process in cold weather, it is recommended to use ACC CATALYST. Consult our technical department for thinning.

APPLICATION REMARKS

- It should be covered with PU 650 TC-1K or PU 600 TC -1K Aliphatic flexible top coat material in order to extend the strength and shelf life of polyurethane based waterproofing products which are applied to areas exposed to open air conditions or pedestrian traffic.
- Not recommended for loose and unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

- Total Consumption (minimum): 1,50-1,80 kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed.

PACKAGING AND COLOR

It is grey in 5 kg and 25 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in unopened original pail at temperatures between +5°C and +25°C. Opened product should be used at the soonest.

PRECAUTIONS

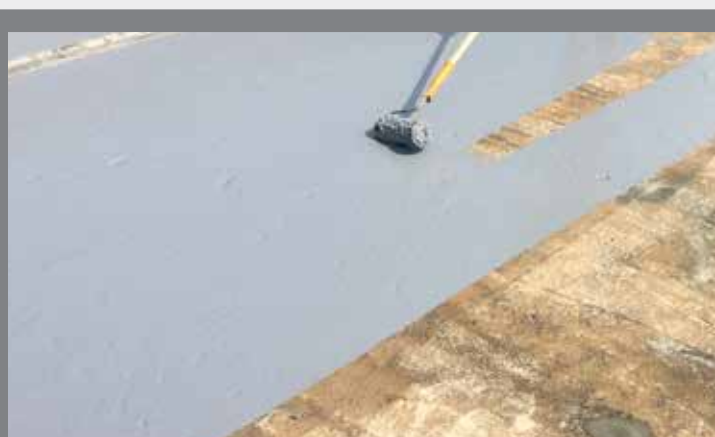
The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. Adequate ventilation is required during application. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,35 ± 0,05 gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	5000 - 10.000 cp
Water Vapor Permeability	ASTM E96	0,8 gr/m ² hour
Application Temperature	Clever Lab.	+5°C to +35°C
Hardness	ASTM D2240, DIN 53505, EN ISO R868	> 60 (Shore A)
Elongation at break	ASTM D 412 (+23°C)	> 800%
Tensile Strenght	ASTM D 412 (+23°C)	> 2 N/mm ²
Service Temperature	Clever Lab.	-40°C to +60°C
Tack Free Time	25°C / 55% RH	6 Hours
Recoat Time	Clever Lab.	6 to 24 Hours
Water Absorbency	Clever Lab.	%1

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU 130 is a single component, polyurethane based, economical liquid waterproofing membrane. Easy to apply and creates an elastic and durable film layer by curing with the humidity in the air.

TYPICAL APPLICATIONS

- Covered areas,
- Gypsum and cement panels,
- Covered roofs,
- Indoor and outdoor applications,
- Terraces, verandas and balconys,
- Wet surfaces under coating. (Bathroom, kitchen, etc.)

FEATURES AND ADVANTAGES

- It has low cost and high performance.
- Easy to apply (by brush, roller or spray).
- When applied it forms a single piece membrane that does not cause joint formation or leakage.
- It is resistant to continuous water contact.
- Preserves its elasticity and mechanical properties between -40°C and +60°C.
- It is permeable to water vapor. Having a breathable structure is does not cause accumulation in the substrate.
- When the material is damaged, it can be repaired quickly with PU130.
- Provides excellent adhesion to the surface.
- When fully cured, it does not contain toxic substances.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
 - Humidity : W <10%
 - Temperature : +5°C and +35°C
 - Relative Humidity : <85%
- For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

In order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface before the application. The surface should be thoroughly dried after washing with high pressure water and should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

• APPLICATION

Before using, the package should be opened and mixed with a low speed mixer for 2-3 minutes. For spray application, add CLEVER 001 at a maximum rate of 5% - 7%. Primed surface should be covered in minimum 2 coats by pouring the product until the entire surface is covered with a roller, squeegee or brush. After the first layer is applied, the second layer should be applied within minimum 8 hours and maximum 24 hours later. If the application has not been made within the specified time for the second layer, please consult the technical office of CLEVER POLYMERS for information and solutions before application. In order to increase the acceleration of drying in cold weather, it is recommended to use ACC CATALYST if desired. If ceramic is to be coated on it, silica sand should be poured on it before the second layer dries. Consult our technical department for thinning.

APPLICATION REMARKS

- It should be covered with PU 650 TC-1K or PU 600 TC-1K Aliphatic flexible top coat material in order to extend the strength and shelf life of polyurethane based waterproofing products which are applied to areas exposed to open air conditions or pedestrian traffic.
- Not recommended for loose and unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

- First Layer (min.) : 0,70 - 0,90 kg/m²
- Second Layer (min.) : 0,70 - 0,90 kg/m²
- Airless Spray (for each layer) : 0,75 - 1,00 kg/m²
- Total Consumption (min.) : 1,40 - 1,80 kg/m²

CLEANING

After the application, all tools used should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

It is grey and in 5 kg and 25 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in unopened original pail at temperatures between +5°C and +25°C. Opened product should be used at the soonest.

PRECAUTIONS

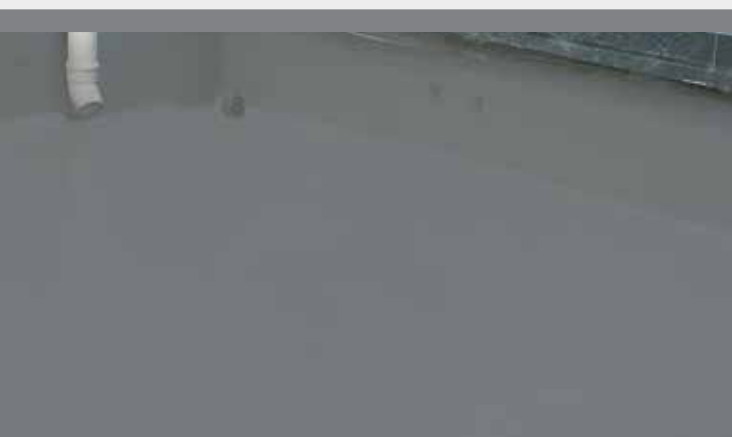
The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,40 ± 0,05 gr/cm ³
Viscosity	ASTM D 4287 (+25°C)	2500 - 5000 cp
Water Vapor Permeability	ASTM E96	0,8 gr/m ² hour
Application Temperature	Clever Lab.	+5°C to +35°C
Solid Content	Clever Lab.	%85 (±5)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	60 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	%1000
Tensile Strength	ASTM D 412 (+23°C)	> 2 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N / mm ²
Service Temperature	Clever Lab.	-40°C to +60°C
Tack Free Time	25°C / 55% RH	2-3 Hours
Recoat Time	Clever Lab.	6 to 24 Hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU SMART FLEX, is a single component, polyurethane / polyurea based, liquid applied membrane which is specially designed for waterproofing of heavy duty areas such as bridge decks platform. It has excellent elongation and crack bridging properties at low and high temperatures.

TYPICAL APPLICATIONS

- Bridge deck platforms (asphalt, bridges),
- Foundations,
- Underground structures as, parking platforms, and tunnels,
- Wet areas under the coating (bathroom, kitchen, etc.),
- Terraces, verandas and balconies,
- In high corrosive and high trafficable areas with top coat.

FEATURES AND ADVANTAGES

- High crack bridging ability.
- Easy to apply (brush, roller or airless spray).
- It is compatible with asphalt layers without any adhesion layer.
- It is hydrofobic.
- High thermal resistance.
- High chemical resistance.
- It is resistant to engine oils, fuel oils and gasoline.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

• APPLICATION

Before using, the package should be opened and mixed with a low speed mixer (for 2-3 minutes). For spray application, add CLEVER 001 at a maximum rate of 5%-7% if needed. The previously primed surface should be applied with a roller or brush until the entire surface is covered.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools chemically treated with water.

CONSUMPTION

- Airless Spray (for each layer): 0,75 - 0,90 kg/m²
- Total Consumption (min.): 1,50 - 1,80 kg/m²
- Bridge Application (min.): 2,50 kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Roller brushes are disposable.

PACKAGING AND COLOR

Grey and in 25 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

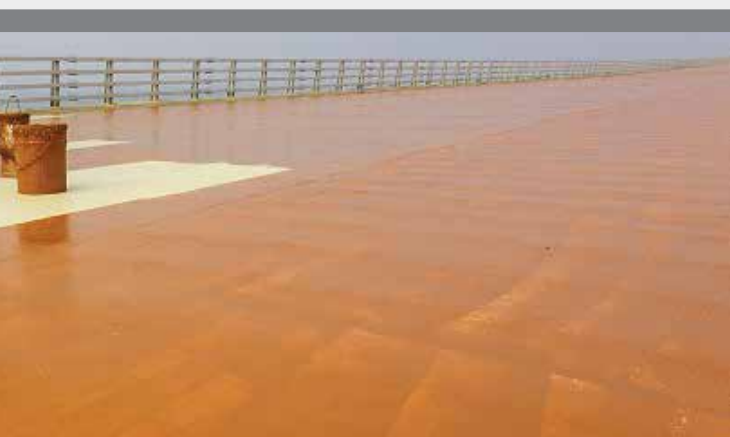
The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane / Polyurea
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,45 (±0,05) gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	2000 - 5000 cp
Water Vapor Permeability	ASTM E96	0,8 gr / m ² hour
Gloss	Clever Lab.	Semi-Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Heat Resistance	EOTA TR011	100 days at +80°C
Shock Heat Resistance	Clever Lab.	220°C - Passed
Solid Content	Clever Lab.	85% (±5)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	> 80 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> 350%
Tensile Strength	ASTM D 412 (+23°C)	> 7 N / mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N / mm ²
QUV	ASTM G154	2000 Hours - Passed
Abrasion Resistance	ASTM D4060-14	30 mg loss (CS17/1000/1000)
Service Temperature	Clever Lab.	-40°C to +80°C
Tack Free Time	25°C / 55% RH	6 hours
Recoat Time	Clever Lab.	6 to 24 Hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

400 BT-2K is a two component, bitumen polyurethane based, cold applied liquid waterproofing membrane. It forms a root-resistant film layer with 2000% elasticity by perfectly adhering to almost every surface it is applied to.

TYPICAL APPLICATIONS

- Green roofs and botanical garden terraces,
- Water tanks (except drinking water tanks),
- Foundations,
- Basement,
- Irrigation channels,
- Bridge platforms,
- Cut and Cover tunnels,
- Bathroom, veranda, terrace and roofs (under tiles),
- Gypsum and cement panels,
- Bitumen membranes,
- Light roofs made of metal and fiber cement.

FEATURES AND ADVANTAGES

- Easy to apply.
- When applied it forms a single piece membrane that does not cause joint formation or leakage.
- Certified for plant root resistance test.
- Certified according to ETAG 005, W3 category.
- Resistant to still water and frost.
- Water vapor permeability.
- It preserves its mechanical properties between -40°C and +80°C.
- It is resistant to cold. It keeps its elasticity up to -40°C.
- Provides effective resistance against chemicals.
- It can also be used as joint material.
- It has an elastomeric hydrophobic structure.
- Excellent mechanical properties. It has excellent elongation, tensile, tear and abrasion resistance.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
 - Humidity: W < 10%
 - Temperature: + 5°C and +35°C
 - Relative Humidity: <85%
- For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application in order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should also be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

• APPLICATION

The components should firstly be opened separately and mixed with a low speed mixer for 2-3 minutes. Then components A and B are combined and mixed with a low-speed mixer for a minimum of 3-4 minutes, and made ready to use. The pot life of the mixture is between 30 and 45 minutes at +20°C. The pot life time may be shortened or increased depending on temperature. 400 BT-1K or 400 BT-2K should be applied for crack bridging on cracks wider than 1mm before the main coat is applied. The mixed component material should be applied to primed surface with a roller, squeegee or brush until the entire surface is covered, by pouring the product in minimum 2 layers. After the first layer is applied, the second layer should be applied minimum 6 and maximum 24 hours later. If the application has not been made within the specified time for the second layer, please consult the technical office of CLEVER POLYMERS for information and solutions before application. If needed, it can be applied in a single layer. In this case, it should be applied as a minimum of 1.5 to 2.0 Lt./m².

APPLICATION REMARKS

- After applying 400 BT-2K, it should be covered.
- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

- First Layer (min.): 0,75 - 1,00 Lt/m²
- Second Layer (min.): 0,75 - 1,00 Lt/m²
- Total Consumption (min.): 1,50 - 2,00 Lt/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

20 Lt. (Component A) + 20 Lt. (Component B) is black in metal bucket.
7,5 Lt. (Component A) + 7,5 Lt. (Component B) is black in metal bucket.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between + 5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Bitumen Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,00 ± 0,05 gr/cm ³
Viscosity	ASTM D 4287 (+25°C)	3.500 - 4.500 cp
Mixing ratio	Clever Lab.	1/1 By volume
Gloss	Clever Lab.	Semi Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Shock Heat Resistance	Clever Lab.	200°C - Passed
Solid Content	Clever Lab.	%90 (±5)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	35 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> %2000
Tensile Strength	ASTM D 412 (+23°C)	> 2 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
Tensile State After 300% Elongation	ASTM D412	< %1
QUV	ASTM G53	1000 Hours - Passed
Service Temperature	Clever Lab.	-40°C to +80°C
Tack Free Time	25°C / 55% RH	2 - 3 Hours
Recoat Time	Clever Lab.	6 to 24 Hours
Thermal Resistance (200 days at 80 °C)	EOTA TR011	Passed
Chemical Resistance (Sodium Hypochlorite NaOCl 5% at 10 days)	Clever Lab.	Not Effected
Hydrolysis Resistance (Potassium Hydroxide, 8%, 10 days at 50 °C)	Clever Lab.	Not Effected
H ₂ O Absorption (10 Days)	Clever Lab.	< % 0,9

* Viscosity measured at +25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

CLASSIFICATION ACCORDING TO EOTA GUIDELINE (EUROPEAN ORGANISATION OF TECHNICAL APPROVAL)

REQUIREMENT	METHOD	PROPERTY
Minimum Expected Working Life	EAD 030350-00-0402	W3 (25 Years)
Climatic Zone	EAD 030350-00-0402	S (severe)
Used Load	EAD 030350-00-0402	P1-P3
Roof Slope	EAD 030350-00-0402	S1-S4
Minimum Surface Temperature	EAD 030350-00-0402	TL 4 (-30°C)
Maximum Surface Temperature	EAD 030350-00-0402	TH 2 (60°C)
Exposure To External Fire	EAD 030350-00-0402	Broof (t1)
Reaction To Fire	EAD 030350-00-0402	Class E



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DESCRIPTION

400 BT-1K is a single component, bitumen polyurethane based, liquid waterproofing membrane. It is thixotropic. It creates a highly elastic and durable film layer by providing a strong adhesion to the applied surface. It is suitable for both vertical and horizontal application.

TYPICAL APPLICATIONS

- Basements,
- Wet areas,
- Asphalt membranes,
- Undertile applications,
- Foundations, and foundation walls,
- Gypsum and cement panels,
- Roof, terrace and balconies.

FEATURES AND ADVANTAGES

- Thixotropic.
- Fast curing.
- Easy to apply.
- When applied it forms a single piece membrane that does not cause joint formation or leakage.
- It has an elastomeric hydrophobic structure.
- It is resistant to cold and maintains its elasticity down to -40°C.
- It is permeable to water vapor. Having a breathable structure it does not cause accumulation in the substrate.
- Even if 400 BT-1K is damaged in any way, the damaged part is easily repaired in a short time.
- Provides effective resistance against chemicals.
- It is suitable for vertical applications, it never sags.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
- Humidity : W <10%
- Temperature : +5°C and +35°C
- Relative Humidity : <85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure a good adhesion, oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface. After cleaning the surface with high pressure water, it should be thoroughly dried. Surface defects should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should also be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

• APPLICATION

Open the package of the product and mix it with a low speed mixer for 2-3 minutes. The material should be applied to the previously primed surface in minimum 2 coats by pouring it with the help of a roller or brush until the entire surface is covered. After the first layer is applied, the second layer should be applied within minimum 3 hours and maximum 24 hours later.

APPLICATION REMARKS

- 400 BT-1K It should be covered after application.
- Not recommended for loose and unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

- First Layer (min.): 0,75 - 0,85 Kg/m²
- Second Layer (min.): 0,75 - 0,85 Kg /m²
- Total Consumption (min.): 1,50 - 1,70 Kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

It is black and in 20 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Bitumen Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,05 - 1,10 gr/cm ³
Viscosity	ASTM D 4287 (+25°C)	20.000 - 30.000 cp
Flash Point	ASTM D93	42°C
Gloss	Clever Lab.	Semi Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Heat Resistance	Clever Lab.	200 days at +80°C
Shock Heat Resistance	Clever Lab.	150°C - Passed
Solid Content	Clever Lab.	%85 (± 5)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	35 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> %600
Tensile Strength	ASTM D 412 (+23°C)	3 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
Thermal Resistance (200 days at 80 °C)	EOTA TR011	Passed
QUV	ASTM G53	1000 Hours - Passed
Service Temperature	Clever Lab.	-40 °C to +80°C
Tack Free Time	25°C / 55% RH	1,5 to 2,5 Hours
Recoat Time	Clever Lab.	3 to 24 Hours
Chemical Resistance (Sodium Hypochlorite NaOCl 5% at 10 days)	Clever Lab.	Not Effected
Hydrolysis Resistance (Potassium Hydroxide, 8%, 10 days at 50 °C)	Clever Lab.	Not Effected
H ₂ O Absorption (10 Days)	Clever Lab.	< %0,9

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

400 BT-1K RAPID is a single component, fast curing, bitumen modified polyurethane based, liquid waterproofing membrane. It creates a highly elastic and durable film layer by providing strong adhesion to the applied surface.

TYPICAL APPLICATION

- Foundations, basements and floors,
- Roofs, terraces and balconies,
- Wet areas,
- Undertile applications,
- Asphalt membranes,
- Gypsum and cement panels.

FEATURES AND ADVANTAGES

- It has a cost advantage and high performance.
- Cures fast even at low temperature and humidity.
- Easy to apply.
- When applied it forms a one-piece layer that does not cause joint formation or leakage.
- Heat resistance performance is from -40°C to +80°C.
- It is resistant to cold and maintains its elasticity up to -40°C.
- It is permeable to water vapor.
- Having a breathable structure it does not cause accumulation in the substrate.
- Excellent chemical resistance.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
 - Humidity: W <10%
 - Temperature: +5°C and +35°C
 - Relative Humidity: <85%
- For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

In order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface before the application. The surface should be thoroughly dried after washing with high pressure water and should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should also be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

• APPLICATION

Open the package of the product and mix it with a low speed mixer for 2-3 minutes. The material should be applied on the primed surface in minimum at 2 coats by a roller or brush until the entire surface is covered. After the first layer is applied, the second layer should be applied minimum 6 and maximum 24 hours later.

APPLICATION REMARKS

- After applying 400 BT-1K RAPID, it should be covered.
- Not recommended for unstable surfaces.

CONSUMPTION

- First Layer (min.): 0,90 - 1,00 Kg/m²
- Second Layer (min.): 0,90 - 1,00 Kg/m²
- Total Consumption (min.): 1,80 - 2,00 Kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

It is black and in 25 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in unopened original pail at temperatures between + 5°C and +25°C. Opened product should be used at the soonest.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Bitumen Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,30 gr/cm ³ (±0,05)
Viscosity	ASTM D4287 (+25°C)	3.000 - 6.000 cp
Flash Point	ASTM D93	30 °C
Gloss	Clever Lab.	Semi Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Heat Resistance	Clever Lab.	200 days at +80°C
Shock Heat Resistance	Clever Lab.	150 °C
Solid Content	Clever Lab.	%85 (±0,05)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	35 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> %800
Tensile Strength	ASTM D 412 (+23°C)	> 2 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
Thermal Resistance (200 days at 80 °C)	EOTA TR011	Passed
Service Temperature	Clever Lab.	-40°C to +80°C
Tack Free Time	25°C / 55% RH	1 - 2 Hours
Recoat Time	Clever Lab.	6 to 24 Hours
H ₂ O Absorption (10 Days)	Clever Lab.	< %1

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

2 KW PU is a two component, polyurethane based, solvent free liquid waterproofing membrane designed for the protection and waterproofing of drinking water tanks.

TYPICAL APPLICATIONS

- Water tanks,
- Concrete water tanks,
- Water tanks, made of steel and other metals,
- Surfaces in direct contact with drinking water.

FEATURES AND ADVANTAGES

- Certified for drinking water tanks.
- Solvent free.
- It has heat resistance between -40°C and +90°C.
- It has excellent adhesion properties.
- Suitable for indoor applications.
- Provides effective resistance against chemicals.
- It is the ideal solution for water tanks in terms of price and performance.
- It is thixotropic.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
 - Humidity: W <10%
 - Temperature: +5°C and +35°C
 - Relative Humidity: <85%
- For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes, should be removed from the surface. After cleaning the surface with high pressure water, it should be dried. Surface defects should be repaired with suitable products.

• PRIMING

Solvent-free EPOXY PRIMER WB should be preferred in closed and underground tanks. After the primer is dry, use CLEVERSEAL PU 35 to repair and seal the joints, cracks and holes.

• APPLICATION

Components A and B are combined and mixed in a low-speed mixer for a minimum of 2-3 minutes and made ready for use. The pot life of the mixture is between 20 and 30 minutes at +20°C. The pot life may be shortened or extended depending on the temperature. In order to increase the pot life, the product is poured onto the floor or put into a larger container. The material should be applied to the primed surface by a roller or brush until the entire surface is covered, by pouring it in min 2 layers for flooring applications. For vertical applications single layer is applied. After the first layer is applied, the second layer should be applied within minimum 8 and maximum 24 hours later. If the application has not been made within the specified time for the second layer, please consult the technical office of CLEVER POLYMERS for information and solutions before application.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools chemically treated with water.

CONSUMPTION

- First Layer (min.): 0,65 - 0,75 kg/m²
- Second Layer (min.): 0,65 - 0,75 kg /m²
- Total Consumption (min.): 1,30 - 1,50 kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

20 Kg + 4 Kg metal buckets, blue color.
5 Kg + 1 Kg metal buckets, blue color.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Solvent Free Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,40 ± 0,05 gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	5.000 - 10.000 cp
Mixing ratio	Clever Lab.	5/1 by weight
Gloss	Clever Lab.	Semi-Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Solid Content	Clever Lab.	%100
Hardness	ASTM D2240, DIN 53505, EN ISO R868	40 (Shore D)
Elongation at Break	ASTM D 412 (+23°C)	> %100
Pot Life	Clever Lab. (+25°C)	20 to 30 minutes
Tensile Strength	ASTM D 412 (+23°C)	> 20 N/mm ²
Water Absorption	DIN 53495	< 0,5%
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N / mm ²
Service Temperature	Clever Lab.	-40°C to +90°C
Tack Free Time	25°C / 55% RH	3 - 4 Hours
Recoat Time	Clever Lab.	6 to 24 Hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

TRANS ALM is a single component, polyurethane based, protective, transparent and aliphatic waterproofing liquid membrane.

TYPICAL APPLICATIONS

- Terraces,
- Verandas and balconies,
- Concrete, natural stone surfaces,
- Glass surfaces,
- Ceramic surfaces.

FEATURES AND ADVANTAGES

- Excellent mechanical properties.
- High UV resistance.
- Strength to bad weather conditions.
- Easy to apply (with roller or airless spray).
- Being pure polyurethane it can be in touch constantly with water.
- It can maintain its mechanical properties under the temperatures between -40°C - +80°C.
- Strong adhesion.
- It has alkaline and chemical strength, it maintains its transparency and elasticity for years.
- It's applied in thick layers with no swelling.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
- Humidity: W <10%
- Temperature: +5°C and +35°C
- Relative Humidity: <85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application in order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be free from damp. Surface defects and cracks should be repaired with suitable products.

• PRIMING

TILE PRIMER should be used on non-absorbent surfaces such as metal, ceramic or old coatings. Polished non-absorbent surfaces such as polished ceramic tiles, glass and glass bricks should be primed with TILE PRIMER. TILE PRIMER should be applied with a cloth to make sure that it is purely treated on the surface. TRANS ALM is applied after 15-20 minutes with the help of a roller or brush. The period of waiting between the application of two layers should not exceed 24 hours.

• APPLICATION

Before usage mix it manually or with a low-speed mixer to get it ready to use. It is applied without thinning. The material should be applied to the previously primed surface in minimum two coats by pouring it with the help of roller or brush. After the first layer is applied, the second layer should be applied within minimum 6 hours and maximum 24 hours. The tools should be cleaned within 2 hours after application.

APPLICATION REMARKS

- Not recommended for unstable surfaces.

CONSUMPTION

- Total Consumption (min.): 0,20 - 1,00 lt/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Roller are disposable, should not be used second time.

PACKAGING AND COLOR

In 4 lt and 20 lt metal buckets, in transparent color.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane
Density	ASTM D 1475/EN ISO 2811-1 (+20 °C)	1,00 (± 0,05) gr/cm ³
Viscosity	ASTM D 4287 (+25°C)	800 - 1200 cp
Water Vapor Permeability	ASTM E96	0,8 gr/m ² hour
Application Temperature	Clever Lab.	+5°C to +35°C
Heat Resistance	Clever Lab.	+80°C at 100 days
Shock Heat Resistance	Clever Lab.	200°C - Passed
Solid material	Clever Lab.	%80 (± 5)
Hardness	ASTM D2240, DIN 53505, EN ISO R868	> 40 (Shore D)
Elongation at break	ASTM D 412 (+23°C)	> 350%
Tensile Strenght	ASTM D 412 (+23°C)	> 35 N/mm ²
Flash Point	ASTM D 93 (Closed pot)	30°C
QUV	ASTM G53	3000 Hours - Passed
Service Temperature	Clever Lab.	-40°C to +80°C
TACK FREE TIME	25°C / 55% RH	6 hour
RECOAT TIME	Clever Lab.	6 to 24 hour
Potassium Hydroxide 8% ,10 day at 50 °C	Clever Lab.	Not effected
Sodium Hypochlorite 5% 10 days	Clever Lab.	Not effected
Water Absorbancy	Clever Lab.	≤ %1,4

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

AQUA HYBRID is a single component, polyurethane hybrid based, 100% aliphatic waterproofing membrane. It forms a fast drying, UV resistant elastic protective coating.

TYPICAL APPLICATIONS

- Vertical and horizontal areas,
- PU foams,
- Wet areas (bathroom, kitchen, etc.),
- The surfaces where UV resistance is required,
- Light roofs.

FEATURES AND ADVANTAGES

- Easy application on vertical surfaces.
- Thixotropic.
- Excellent UV resistance.
- It cures fast.
- Easy to apply (with roller brush or airless spray).
- Solvent free.
- Does not contain toxic substances when fully cured.
- High resistance against stagnant water.
- Elastic.

APPLICATION PROCEDURE

• SURFACE PREPERATION

Before the application, in order to ensure good adhesion; oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from surface. After cleaning the surface with high pressure water, it should be thoroughly dried. Surface defects should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, AQUA PRIMER 2K or EPOXY PRIMER WB should be used. TILE PRIMER should be used on non-absorbent surfaces such as metal, or old coatings. AQUA HYBRID can be thinned with 15% water and used as a primer on non-rigid surfaces.

• APPLICATION

Before usage open package and mix with a low speed mixer for 2-3 minutes. The material should be applied to the previously primed surface in minimum two coats by pouring it with the help of roller or brush until the entire surface is covered. After the first layer is applied, the second layer should be applied within minimum 8 hours and maximum 24 hours. If the application has not been made within the specified time for second layer, please consult the technical office of CLEVER POLYMERS for information and solutions before application.

APPLICATION REMARKS

- Not recommended for unstable surfaces.

CONSUMPTION

- Total Consumption (min.): 1,50 - 1,80 kg/m²

CLEANING

After the application, all tools should be cleaned with water.

PACKAGING AND COLOR

It is white and in 20 kg plastic buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Polyurethane Dispersion
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,35 - 1,45 gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	5.000 - 10.000 cp
Application Temperature	Clever Lab.	Between +5°C - +35°C
Hardness	ASTM D2240, DIN 53505, EN ISO R868	> 65 (Shore A)
Elongation at break	ASTM D 412 (+23°C)	> 300%
Tensile Strenght	ASTM D 412 (+23°C)	> 3,5 - 4 N/mm ²
QUV	ASTM G53	2000 Hours - Passed
Service Temperature	Clever Lab.	-20 °C to +80°C
Tack Free Time	25°C / 55% RH	6 - 8hours
Recoat Time	Clever Lab.	8 to 24 hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

400 BT AQUA; Single component, thixotropic, bitumen-polyurethane dispersion based liquid membrane. It produces a highly elastic membrane with its excellent adhesion to many type of surfaces. Used for horizontal and vertical applications.

TYPICAL APPLICATIONS

- Wet areas,
- Under tile applications, (bathroom, kitchen etc.)
- Retaining walls,
- Terraces and balconies.

FEATURES AND ADVANTAGES

- Thixotropic.
- Simple application (by brush, roller, air spray) and repairment.
- When applied it forms a single piece membrane that does not cause joint formation or leakage.
- It is based on elastomeric hydrophobic polyurethane resin.
- Provides water vapor permeability. Having a breathable structure it does not cause accumulation in the substrate.
- If 400 BT AQUA gets damaged, it can be easily repaired locally within minutes.
- Resistant to chemicals .
- Useful for vertical applications. Never leaks or sags.

CONCRETE SUBSTRATE STANDARTS

- Hardness: R28 = 15 Mpa
- Humidity: W <10%
- Temperature: +5°C and +35°C
- Relative Humidity: <85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPERATION

Before the application, the adhesion and cohesion factors such as oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface. After cleaning the surface with high pressure water, it should be thoroughly dried. Surface defects should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed and metal, AQUA PU PRIMER 2K or EPOXY PRIMER WB should be used. TILE PRIMER should be used on non-absorbent surfaces such as ceramic and glass.

• APPLICATION

Open the package of the product and mix it with a low speed mixer for 2-3 minutes. The material should be applied to the previously primed surface in minimum 2 coats by pouring it with the help of a roller or brush until the entire surface is covered. After the first layer is applied, the second layer should be applied minimum 6 hours and maximum 24 hours. It can be thinned with 5-10% water if needed.

APPLICATION REMARKS

- After applying 400 BT AQUA, it should be covered.
- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

- First Layer: 1,00 - 1,50 kg/m²
 - Second Layer: 1,00 - 1,50 kg/m²
 - Total Consumption (min.): 2,00 - 3,00 kg/m²
- Minimum 2 or 3 layers should be applied.

CLEANING

Tools should be cleaned with water after application.

PACKAGING AND COLOR

It is black and in 20 kg plastic buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 6 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Bitumen Polyurethane Dispersion
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,05 gr/cm ³ (±0,05)
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	3000 - 8000 cp
Gloss	Clever Lab.	Semi Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Thinning	Clever Lab.	Not Recommended
Hardness	ASTM D2240, DIN 53505, EN ISO R868	50 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> %200
Tensile Strength	ASTM D 412 (+23°C)	> 4,5 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 1,2 N/mm ²
Tack Free Time	25°C / 55% RH	6 hours
Recoat Time	Clever Lab.	6 to 24 hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU 650 2K AQUA is a two-component, polyurethane based, 100 % aliphatic top coat membrane. Especially in swimming pools, applying on epoxy or polyurethane coating products, creates a protective coating that is UV resistant and chlorine resistant.

TYPICAL APPLICATIONS

- Vertical and horizontal areas,
- As elastic top coat material for polyurethane waterproofing,
- Outdoor areas,
- Swimming pools,
- Areas where UV resistance required,
- Protective top coat on polyurethane and epoxy systems.

FEATURES AND ADVANTAGES

- Easy application on vertical surfaces.
- Excellent resistance to chlorinated water.
- Excellent UV-resistance.
- Fast curing.
- Easy to apply (with roller or airless spray).
- Solvent free.
- It does not contain toxic substance when fully cured.

APPLICATION PROCEDURE

• SURFACE PREPERATION

Before the application, the adhesion and cohesion factors such as oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface. After cleaning the surface with high pressure water, it should be thoroughly dried. Surface defects should be repaired with suitable products.

• APPLICATION

Before the application, A and B packages should be opened and mixed together with a low-speed mixer for 2-3 minutes. At least one or two coats should be applied on the applied epoxy or polyurethane products with the help of a roller or brush until the entire surface is covered. After the first layer is applied, the second layer should be applied within minimum 8, maximum 24 hours. If the second coat is not applied within the specified time, contact CLEVER POLYMER'S technical office for information and solutions before application.

APPLICATION REMARKS

- Not recommended for unstable surfaces.

CONSUMPTION

- Total consumption (min): 0,150 - 0,300 kg/m²

CLEANING

After the application, all tools should be cleaned with water.

PACKAGING AND COLOR

A: It is blue and in 4 kg plastic buckets.

B: It is blue and in 0,8 kg plastic buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Water Based Polyurethane Dispersion
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,00 - 1,10 gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	300 - 600 cp
Water Vapor Permeability	ASTM E96	0,8 gr/m ² Hour
Application Temperature	Clever Lab.	+5°C to +35°C
Solid Content	Clever Lab.	55% (±5)
QUV	ASTM G53	2000 Hours - Passed
Tack Free Time	25°C / 55% RH	8 hours
Recoat Time	Clever Lab.	8 to 24 hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

SLC 1100 is a single component, 100% silicone based, highly adhesive, solvent-free, UV resistant, flexible waterproofing membrane curing with the humidity in the air.

TYPICAL APPLICATIONS

- Metal roofs,
- Metal coating areas,
- In wooden coatings,
- On the bituminous membrane,
- Concrete roofs,
- Mineral coated roofs,
- Renewal of old polyurethane foam roofs.

FEATURES AND ADVANTAGES

- Easy to use.
- Low VOC value.
- Excellent adhesion to many surfaces without primer.
- Easy cleaning.
- Ease of use in closed areas.
- Excellent UV and alkali resistance.

APPLICATION PROCEDURE

• SURFACE PREPERATION

Before the application, the adhesion and cohesion factors such as oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface. After cleaning the surface with high pressure water, it should be thoroughly dried. Surface defects should be repaired with suitable products.

• APPLICATION

Before usage, the package should be opened and mixed with a low-speed mixer for 2-3 minutes. It should be applied as one layer with the help of a roller, brush or spray until the entire surface is covered. It is recommended to use EP PRIMER SLC on metal galvanized rusty surfaces and critical surfaces by contacting our technical service. Thinning is not recommended.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- Do not use special colored SLC 1100 on asphalt surfaces.
- Asphalt surfaces may change color.

CONSUMPTION

- Metal surfaces: 0,60 - 0,70 kg/m²
- Flat surfaces: 0,60 - 0,70 kg/m²
- Rough surfaces: 0,90 - 1,00 kg/m²

CLEANING

After application, all tools used should be cleaned with silicone solvent.

PACKAGING AND COLOR

It is white and in 5 kg and 20 kg plastic buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 24 months in its unopened original packaging at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Silicon
Solid Content	ASTM D 1644	96 %
Flash Point	ASTM D3278	TOK ≥ 81°C
Tensile strenght at 23 °C	ASTM D2370	2,00 N/mm ²
Tensile strenght at -18 °C	ASTM D2370	2,00 N/mm ²
Application Temperature	Clever Lab.	+10°C to +40°C
Elongation at break at 23 °C	ASTM D2370	200%
Elongation at break at -18 °C	ASTM D2370	200%
VOC	EPA 24	≤ 50 gr/lit
Wet Adhesion Spray Polyurethane Foam	ASTM D903	Passed
Wet Adhesion Acrylic Coating	ASTM D903	Passed
Wet Adhesion Primer Slc Galvanized Metal	ASTM D903	Passed
Wet Adhesion Primer Slc EPDM	ASTM D903	Passed
Wet Adhesion Primer Slc PVC	ASTM D903	Passed
Water Vapor Permeability	ASTM E96	Passed
Uv Reflection	ASTM C1549	Passed
Thermal Emission	ASTM C1371	Passed
Tack Free Time	25°C / 55% RH	24 hours
Recoat Time	Clever Lab.	Between 24-48 hours

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DESCRIPTION

SLC 1200 is a single component, 100% silicone based, solvent-free, UV-resistant, flexible waterproofing membrane curing with the humidity in the air.

TYPICAL APPLICATIONS

- Metal roofs,
- Metal coating areas,
- In wooden coatings,
- On the bituminous membrane,
- Concrete roofs,
- Mineral coated roofs,
- Renewal of old polyurethane foam roofs.

FEATURES AND ADVANTAGES

- Easy to use.
- Low VOC value.
- Excellent adhesion to many surfaces without primer.
- Easy cleaning.
- Ease of use in closed areas.
- Excellent UV and alkali resistance.

APPLICATION PROCEDURE

• SURFACE PREPERATION

Before the application, the adhesion and adhesion factors such as oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface. After cleaning the surface with high pressure water, it should be thoroughly dried. Surface defects should be repaired with suitable products.

• APPLICATION

Before usage, the package should be opened and mixed with a low-speed mixer for 2-3 minutes. It should be applied as one layer with the help of a roller, brush or spray until the entire surface is covered. It is recommended to use EP PRIMER SLC on metal galvanized rusty surfaces and critical surfaces by contacting our technical service. Thinning is not recommended.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- Do not use special colored SLC 1200 on asphalt surfaces.
- Asphalt surfaces may change color.

CONSUMPTION

- Metal surfaces: 0,65 - 0,80 kg/m²
- Flat surfaces: 0,80 - 0,95 kg/m²
- Rough surfaces: 1,00 - 1,20 kg/m²

CLEANING

After application, all tools used should be cleaned with silicone solvent.

PACKAGING AND COLOR

It is white and in 5 kg and 20 kg plastic buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 24 months in its unopened original packaging at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Silicon
Solid Content	ASTM D 1644	96 %
Flash Point	ASTM D3278	TOK ≥ 81°C
Tensile strenght at 23 °C	ASTM D2370	2,10 N/mm ²
Tensile strenght at -18 °C	ASTM D2370	2,50 N/mm ²
Application Temperature	Clever Lab.	Between +10°C - +40°C
Elongation at break at 23 °C	ASTM D2370	170%
Elongation at break at -18 °C	ASTM D2370	160%
VOC	EPA 24	≤ 37 gr/ltr
Wet Adhesion Spray Polyurethane Foam	ASTM D903	Passed
Wet Adhesion Acrylic Coating	ASTM D903	Passed
Wet Adhesion Primer Slc Galvanized Metal	ASTM D903	Passed
Wet Adhesion Primer Slc EPDM	ASTM D903	Passed
Wet Adhesion Primer Slc PVC	ASTM D903	Passed
Water Vapor Permeability	ASTM E96	Passed
Uv Reflection	ASTM C1549	Passed
Thermal Emission	ASTM C1371	Passed
Tack Free Time	25°C / 55% RH	4-6 hours
Recoat Time	Clever Lab.	Between 24-48 hours

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DESCRIPTION

AQUA STP is an single component MS polymer based, ready-to-use waterproofing membrane. It creates a UV resistant, super elastic protective coating.

TYPICAL APPLICATIONS

- Wet surfaces (bathroom, kitchen etc),
- Horizontal concrete surfaces,
- Repairing small areas on roofs,
- Bitumen membranes,
- Terraces and roofs,
- In waterproofing detail solutions,
- In waterproofing detail solutions,
- Chimney joints,
- Rain gutters.

FEATURES AND ADVANTAGES

- Easy and fast application.
- Excellent UV resistance.
- Crack bridging up to 4-5 mm (in 2,5 mm dry film thickness).
- Easy to apply (with roller or airless spray).
- Solvent-free.
- No toxic material content when totally cured.
- High resistancy to stagnant water.
- High resistancy to weather conditions.
- Applicable on damp and wet concrete.
- Excellent adhesion withouth primer.

APPLICATION PROCEDURE

• SURFACE PREPERATION

Before the application, in order to ensure good adhesion; oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from surface. After cleaning the surface with high pressure water, it should be thoroughly dried. Surface defects should be repaired with suitable products.

• PRIMING

AQUA STP is used without primer on many surfaces, Does not require a primer, even on slightly damp concrete surfaces. For absorbent surfaces such as concrete, cement or screed, AQUA PU PRIMER 2K or EPOXY PRIMER WB should be used when primer is required. TILE PRIMER should be used on non-absorbent surfaces such as metal, ceramic or old coatings.

• APPLICATION

AQUA STP is ready to use. It should be applied in minimum two layers with the help of a roller or brush until the entire surface is covered. Total dry film thickness should be minimum 2.5 mm. After the first layer application, second layer should be applied minimum 8 and maximum 24 hours later. Surface adhesion and primer requirement should be determined according to the application area to be used. Consult the technical office of CLEVER POLYMERS for information and solutions.

APPLICATION REMARKS

- Not recommended for unstable surfaces.

CONSUMPTION

- Minimum two layers should be applied.
- (Single layer for 1,5 mm dry film thickness):1,5 kg/m²
- 2 layers and 2,5 kg/m² for 4-5 mm of crack bridging.

CLEANING

After the application, all tools should be cleaned with suitable solvent.

PACKAGING AND COLOR

It is grey and in 14 kg plastic buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	MS Polymer
Application Temperature	Clever Lab.	Between +5°C - +35°C
Hardness	ASTM D2240, DIN 53505, EN ISO R868	> 30 (Shore A)
Elongation at break	ASTM D 412 (+23°C)	> 700%
Crack Bridging	Clever Lab.	4-5 mm (at 2,5 mm dry film thickness)
Service Temperature	Clever Lab.	Between -25°C - +80°C
Tack Free Time	25°C / 55% RH	6 - 8 hours
Recoat Time	Clever Lab.	8 - 12 hours

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DESCRIPTION

COLD POLYUREA is a two component, fast curing, cold applied polyurea waterproofing membrane. It creates an elastic and durable film layer on the surfaces. PU 650 TC-1K or PU 600 TC-1K should be used as a top coat in order to use it in places exposed to UV and outdoor effects.

TYPICAL APPLICATIONS

- Terraces and balconies,
- Bridges and tunnels,
- Wet areas,
- Floors,
- Undertile applications,
- Concrete structures.

FEATURES AND ADVANTAGES

- Easy to apply (via brush, roller or spray)
- Does not require expensive application equipment and machinery.
- When applied it forms a one-piece membrane that does not cause joint formation or leakage.
- It provides an elastomeric and hydrophobic layer.
- It is permeable to water vapor. Having a breathable structure is does not cause accumulation in the substrate.
- Even if the COLD POLYUREA is damaged in some way, the damaged part can be repaired quickly and easily.
- Provides effective resistance against chemicals.
- Fast curing in all weather conditions.
- Heat resistance performance between -40°C and +90°C.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
- Humidity: W < 10%
- Temperature: +5°C and +35°C
- Relative Humidity: < 85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be thoroughly dried. Surface defects and cracks should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should also be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

• APPLICATION

Firstly, components A and B should be mixed in their own containers in a low-speed mixer for 2-3 minutes. Afterwards, the components are combined and mixed in a low-speed mixer for 3 to 4 minutes and made ready for use. The material should be applied to primed surface with a roller or brush until the entire surface is covered, by pouring the product in at least one or two layers. If needed, the second layer can be applied 3 hours after the first layer is applied.

APPLICATION REMARKS

- After applying COLD POLYUREA, it should be covered
- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

Single layer consumption (minimum): 1,50 - 2,00 kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

25 Kg. (Component A) + 1,5 Kg. (Component B) in metal bucket and Red (RAL3013) color.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in unopened original pail at temperatures between + 5°C and +25°C. Opened product should be used at the soonest.

PRECAUTIONS

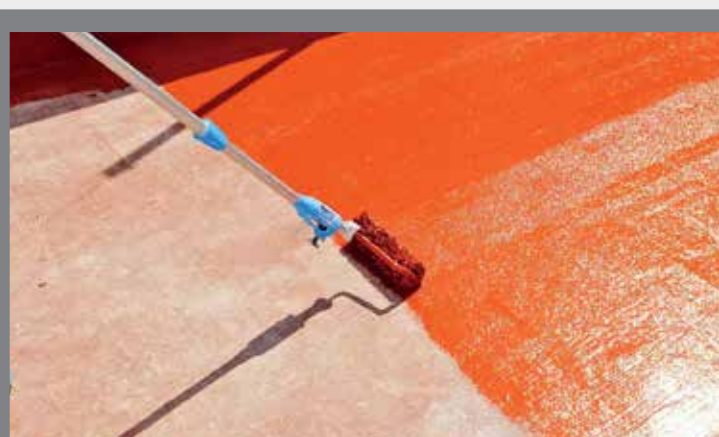
The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Pure Polyurea
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,30 (±0,05) gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	3,000 - 5,000 cp
Water Vapor Permeability	EN ISO 7783	0,8 gr/m ² Hour
Glossy	Clever Lab.	Semi Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Solid Content	Clever Lab.	90% (± 5)
Heat Resistance	Clever Lab.	100 days at +80°C
Shock Heat Resistance	Clever Lab.	200°C – Passed
Hardness	ASTM D2240, DIN 53505, EN ISO 868	50 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> 600%
Pot Life	Clever Lab. (+25°C)	40 to 45 minutes
Tensile Strength	ASTM D 412 (+23°C)	> 10 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
Service Temperature	Clever Lab.	-40°C to +90°C
Tack Free Time	25°C / 55% RH	2 to 3 hours
Recoat Time	Clever Lab.	3 to 6 hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

BITUM 2K PLUS is a two component, fast curing, polymer modified, bitumen rubber based liquid waterproofing membrane. It forms a water and moisture resistant, crack-bridging, high elastic and durable film layer by adhering perfectly to the applied surface. It complies with TS EN 15814+A2 standards.

TYPICAL APPLICATIONS

- Foundation walls,
- Basements and cellars,
- Underground parts of the buildings,
- Balconies, terraces and roofs,
- Retaining walls and settling tanks,
- Flower pots.

FEATURES AND ADVANTAGES

- W2A resistance class.
- Resistant to high pressure groundwater.
- It is resistant to aromatic and aliphatic components and materials such as oil.
- Fast curing.
- Its flexible structure enables crack bridging of shrinkage.
- Can be applied on damp surfaces.
- It has high freezing and thawing resistance.
- Solvent-Free.
- It is environmentally friendly.
- Seamless waterproofing.
- Suitable for indoor use.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
- Humidity : W < 10%
- Temperature : +5°C and +35°C
- Relative Humidity : < 85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surfaces or structures in contact with water under the ground. After cleaning the surface with high pressure water, it must be dried. Surface defects and cracks should be repaired with suitable products. Champer tape should be applied to corners and edges with a minimum radius of 4cm.

• PRIMING

For priming, 1 kg of BITUM 2K PLUS liquid component should be mixed with 5 liters of water in a separate container with a 400-600 rpm mixer for 3-4 minutes. The primer is applied by spreading homogeneously on the surface without ponding with a brush. Primer should be allowed to dry before application.

• APPLICATION

The powder component (component B) should be slowly added into the liquid material and mixed with a mixer at 400-600 rpm until it becomes homogeneous (Lumps should not be allowed). After the prepared mixture is rested for 2-3 minutes, it should be mixed again for 20-30 seconds to make it ready to use. At +23°C air temperature, BITUM 2K PLUS should be consumed within 60 minutes after preparation. The main coat is applied on the dried primer surface. The entire application should be made at least in 2 layers. If the application to be made with a brush, the application layers should be applied perpendicular to each other. Both application and surface temperatures should be between +5°C and +30°C. The application should be protected from severe weather conditions for a minimum of 24 hours. BITUM 2K PLUS should be applied from the direction of water comes from. After the material is completely dry, the foundation pit should be filled with drainage plates and thermal insulation plates, protecting from impacts during filling.

APPLICATION REMARKS

- After applying of BITUM 2K PLUS, the surface should be covered.
- Not recommended for unstable surfaces.

CONSUMPTION

Application Type	Number of Layers	Use of Damp Material
Damp Floor	2 mm	~2,5-3 kg /m ²
Leaking or Unpressurized Water	2 mm	~3,5-4 kg /m ²
Accumulated Leachate	2 (with fiber)	~4,5 kg-5 kg /m ²

CLEANING

After the application, all tools should be cleaned with water.

PACKAGING AND COLOR

22 Kg + 8 Kg It is presented in brown and black colors in a plastic bucket (30 Kg in one set).

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between + 5°C and +25°C. Opened product should be used as soon as possible.


PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Bitumen Rubber and Special Cement
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,03 ±0,05 gr/cm ³
Application Temperature	Clever Lab.	+5°C to +35°C
Crack Bridging Capacity (At +4°C and 2mm wet film layer)	TS EN 15814+A2	CB2
Vapor Diffusion Coefficient	Clever Lab.	5.000 - 30.000 μ
Temperature Resistance	Clever Lab.	+70°C
Resistance to Cold	Clever Lab.	0°C (no cracking during bending)
Water Permeability	TS EN 15814+A2	W2A
Rain Resistance	TS EN 15814+A2	R3
Thickness Reduction During Drying (After 28 Days)	Clever Lab.	~%20

 2164	
CLEVER POLİMER VE YAPI KİMYASALLARI A.Ş. Mermerçiler Sanayi Sitesi 34. Cad. No:5 Köşeler Köyü 41455 Dilovası / KOCAELİ / TÜRKİYE 19	
DOP NO: CLEVER-104 EN 15814:2011+A2:2014 BİTÜM 2K PLUS ZEMİN ALTINDAKİ YAPILARIN SU YALITIMI İÇİN KULLANILAN POLİMER MODİFİYEYELİ BİTÜMLÜ KAPLAMA(PMBC)	
Çatlak Köprülem Yeteneği	CB2
Düşük Sıcaklıkta Esneklik	Çatlama Yok
Sıkıştırılmaya Karşı Direnç	C2B
Yağmura Direnç	R3
Suya Direnç	Renk Değişimi, Yüzeyle Bozulma Yok
Tamamen Kurutulmuş Tabaka Kalınlığının Azalması	±%50
Yüksek Sıcaklıklarda Boyutsal Kararlılık	Akma, Kayma Yok
Su Geçirimsizlik Tayini	W2A
Yangın Tepki Sınıfı	Sınıf E

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DESCRIPTION

BITUM 2K is a two component, polymer modified, bitumen rubber based liquid waterproofing membrane. It forms a water and moisture resistant, crack bridging elastic film layer by adhering perfectly to the applied surface. It complies with TS EN 15814+A2 standards.

TYPICAL APPLICATIONS

- Foundation wall,
- Flower pots,
- Horizontal and vertical surfaces,
- Basements and cellars,
- Underground parts of the structures,
- Outdoors,
- Settling tanks and retaining walls.

FEATURES AND ADVANTAGES

- Easy to apply.
- Its flexible structure enables shrinkage crack bridging.
- It can be applied both vertically and horizontally.
- It has high freezing and thawing resistance.
- Solvent free.
- It is environment-friendly.
- It forms a mono-block, waterproof layer.
- It can be applied on both dry and damp surfaces.
- Suitable for indoor use.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
- Humidity : W < 10%
- Temperature : +5°C and +35°C
- Relative Humidity : <85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surfaces of the buildings that come into contact with water under the ground. After cleaning the surface with high pressure water, it must be dried. Surface defects and active water leaks, if any, should be repaired with suitable products. Chamfer tape should be applied to corners and edges with a minimum radius of 4cm.

• PRIMING

For priming, 1 kg of BITUM 2K liquid component should be mixed with 5 liters of water in a separate container with a 400-600 rpm mixer for 3-4 minutes. The primer prepared in this way is applied by spreading homogeneously on the surface without ponding with a brush. Primer should be allowed to dry before application.

• APPLICATION

The powder component (component B) in the package should be slowly added into the liquid material and mixed with a mixer at 400-600 rpm until it becomes homogeneous (Lumps should not be allowed). After the prepared mixture is rested for 2-3 minutes, it should be mixed again for 20-30 seconds to make it ready to use. At +23°C air temperature, BITUM 2K should be consumed within 60 minutes after preparation. The main coat should be applied on dried primer surface. The entire application should be made at least in 2 layers. If the application to be made with a brush, the application layers should be applied perpendicular to each other. Both application and surface temperatures should be between +5°C and +30°C. The application should be protected from severe weather conditions for a minimum of 24 hours. BITUM 2K should be applied from the direction the water comes from. After the material is completely dried, the foundation pit should be filled with drainage plates and thermal insulation plates, protecting from impacts during filling.

APPLICATION REMARKS

- After application of BITUM 2K, it should be covered.
- Not recommended for unstable surfaces.

CONSUMPTION

Usage Area Minimum	Application Thickness (Dry Film)	Minimum Consumption
Areas Exposed To Soil Moisture (Soil Waters With No Accumulation)	2mm	3 kg/m ²
Insulation Against Low Pressure Water	3mm (With Glass Fiber Reinforcement mesh)	4,5 kg/m ²
Insulation Against High Pressure Water	4mm (With Glass Fiber Reinforcement mesh)	6 kg/m ²

CLEANING

After the application, all tools should be cleaned with water.

PACKAGING AND COLOR

22 Kg + 8 Kg. It is presented in brown and black colors in plastic bucket (30 Kg in one set).

STORAGE AND SHELF LIFE:

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible. Packages must be protect from air temperature below 0 degrees and frost.

PRECAUTIONS


The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.

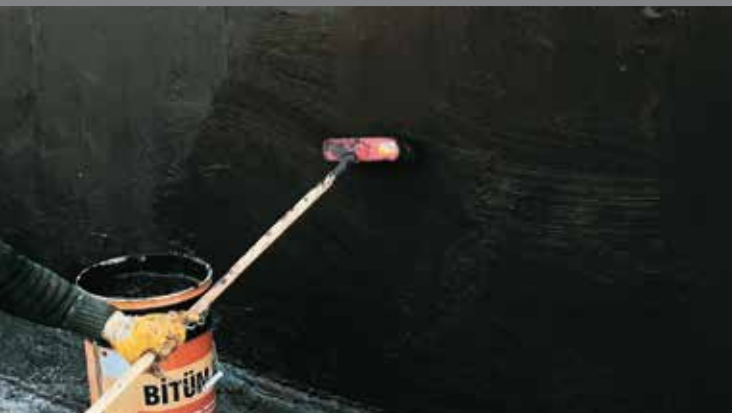


TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Bitumen Rubber and Special Cement
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,06 ±0,05 gr/cm ³
Application Temperature	Clever Lab.	+5°C to +35°C
Crack Bridging Capacity (At +4°C and 2mm wet film layer)	TS EN 15814+A2	CB2
Vapour Diffusion Coeficent	Clever Lab.	5.000 - 30.000 μ
Heat Resistance	Clever Lab.	+70°C
Cold Resistance	Clever Lab.	0°C (no cracking during bending)
Water Permeability	TS EN 15814+A2	W1
Rain Resistance	TS EN 15814+A2	R1
Thicknes Reduction During Drying (After 28 Days)	Clever Lab.	~%20

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 2164	
CLEVER POLİMER VE YAPI KİMYASALLARI A.Ş. Mermerçiler Sanayi Sitesi 34. Cad. No:5 Köşeler Köyü 41455 Dilovası / KOCAELİ / TÜRKİYE 19	
DOP NO: CLEVER-104 EN 15814:2011+A2:2014 BİTÜM 2K ZEMİN ALTINDAKİ YAPILARIN SU YALITIMI İÇİN KULLANILAN POLİMER MODİFİYELİ BİTÜMLÜ KAPLAMA(PMBC)	
Çatlak Köprülem Yeteneği	CB2
Düşük Sıcaklıkta Esneklik	Çatlama Yok
Sıkıştırmaya Karşı Direnç	C2B
Yağmura Direnç	R1
Suya Direnç	Renk Değişimi, Yüzeyde Bozulma Yok
Tamamen Kurulmuş Tabaka Kalınlığının Azalması	≤%50
Yüksek Sıcaklıklarda Boyutsal Kararlılık	Akma, Kayma Yok
Su Geçirimsizlik Tayini	W1
Yangın Tepki Sınıfı	Sınıf E



DESCRIPTION

CLEVERSEAL PU 35 is a single component, high modulus, polyurethane joint sealant curing with humidity in the air.

TYPICAL APPLICATIONS

- As joint filler,
- The dilatation of concrete layers,
- Water tanks and swimming pools,
- Joints of irrigation channels,
- Roof and terrace dilatations,
- Horizontal and vertical dilatation joints.

FEATURES AND ADVANTAGES

- Bonds perfectly to all kinds of surfaces with or without primer.
- It is easily applied and its surface can be smoothed.
- It has excellent chemical resistance.
- It is suitable for the waterproofing of joint systems in water tanks and swimming pools treated with chemicals.
- Can be painted.
- It is non-sagging, thixotropic.
- Waterproofs after drying.
- 25% mobility.
- No air bubbles occur during curing.

APPLICATION PROCEDURE

• SURFACE PREPARATION

The joint should be cleaned before the application. Make sure that the joint should be dry. The factors that will prevent or weaken the adhesion, such as oil, grease, fuel, paraffin and silicone in the joint must be completely removed and cleaned. If the bottom of the joint is open, a polyethylene backing rod should be used to create an application area with a depth equal to half the joint width (width 2 / depth 1).

• PRIMING

Suitable primer should be chosen in accordance with the surface and climatic conditions. It is recommended to use PU PRIMER 200 as primer on porous surfaces, EPOXY PRIMER WB for damp surfaces.

• APPLICATION

Before application, CLEVER PU INJECTION should be mixed properly. Backing rod is placed in the joint to prevent air flow. The package of sealant is cut from the far end and placed in the application gun. The injector head is cut and placed in the gun so that the appropriate and correct amount of flow is obtained. For wide joints it is recommended to apply in multiple layer to reduce the risks of air entrapment. It is necessary to apply more than one application with a gun in order to be in contact with the edges and bases in wide joints. It is necessary to tool the material immediately after the application.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated waters.

CONSUMPTION

Joint Width	Joint Depth	Joint Depth (600ml Sausage/m)
10 mm	5 mm	6
20 mm	10 mm	3
30 mm	15 mm	1,3

The information in the sample consumption table is theoretical. The consumption may vary depending on the joint.

CLEANING

After the application, all tools should be cleaned with CLEVER 001.

PACKAGING AND COLOR

The product is white or grey in 600ml aluminum sausage packaging.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between + 5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be contacted with naked fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. In case of contact of the material with eyes, wash immediately with plenty of water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane Sealant
Form	Clever Lab.	Thixotropic Paste
Density	ASTM D 1475 / EN ISO 2811-1 (+20C)	1,25 ± 0,05 gr/cm ³
Curing Rate	Clever Lab.	2mm / Day
100% Stretch Modulus	ASTM D-412	0,35 - 0,40 N/mm ²
Joint Movement Capability	Clever Lab.	25%
Elastic Recovery	Clever Lab.	> 60
Hardness	ASTM D2240, DIN 53505, EN ISO R868	Shore A 35 (± 5)
Elongation	ASTM D 412 (+23°C)	> 600%
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 1.5 N / mm ²
Take Free Time	25°C / 55% RH	60 - 90 Minutes
Drying Time	Clever Lab.	2mm / 24 Hours

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DESCRIPTION

CLEVERSEAL PU 2K POURABLE, is a two component, polyurethane based, high performance joint sealant designed for wide joints and their isolation.

TYPICAL APPLICATIONS

- Wide, horizontal dilatation joints,
- Joints of water tanks and swimming pools,
- Irrigation channels joints,
- Roof and terrace dilatations,
- Airport runway joints,
- Can be painted. Resistant to fresh and salt water,
- Resistant to petroleum derived materials.

FEATURES AND ADVANTAGES

- Easy to apply.
- Polyurethane based.
- Suitable for applications poured in wide joints.
- Permanently flexible.
- Resistant to oils and many chemicals.

APPLICATION PROCEDURE

• SURFACE PREPARATION

The joint should be cleaned before application. Make sure that the joint should be dry. The factors such as oil, grease, fuel, paraffin and silicone that will prevent or weaken the joint must be completely removed. If the bottom of the joint is open, a polyethylene filler cord should be used and the application area should be created by leaving a depth equal to half the width of the joint (width 2 / depth 1).

• PRIMING

Suitable primer should be chosen according to the surface and climatic conditions. It is recommended to use PU PRIMER 200 as a primer on porous surfaces, EPOXY PRIMER WB for damp surfaces.

• APPLICATION

The ratio of width to depth in the application area should be 2/1. Components A and B are combined and mixed in a low-speed mixer to make it ready for use. The pot life of the mixture is between 20 to 30-35 minutes at +20°C. The pot life of sealant may be shortened or increased depending on the temperature. Backing rod is placed in the joint to prevent air flow. For wide joints it is recommended to apply in multiple layer to reduce the risks of air entrapment. It is necessary to level the material immediately after the application.

APPLICATION REMARKS

- Not recommended for unstable surfaces.

CONSUMPTION

WIDTH \ DEPTH	2 cm	4 cm	8 cm
1 cm	0,28 Kg/m	0,56 Kg/m	1,12 Kg/m
2 cm	0,56 Kg/m	1,12 Kg/m	2,24 Kg/m

The information in the sample consumption table is theoretical. The consumption may vary depending on the way the polyethylene roving is placed and the width of the joint.

CLEANING

After the application, all tools should be cleaned with CLEVER 001.

PACKAGING AND COLOR

8 Kg + 4 Kg in a metal bucket, grey.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for a Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,40 ± 0,05 gr/cm ³
Application Temperature	Clever Lab.	+5°C to +35°C
Solid Content	Clever Lab.	-40°C - +90°C
Hardness	ASTM D2240, DIN 53505, EN ISO R868	30 (±5) (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	> %500
Pot Life	Clever Lab. (+25°C)	30 - 35 minutes
100% Stretch Modulus	ASTM D412 / EN ISO 527-3	% 0,4 N/mm ²
Elastic Recovery	DIN 52458	> 80%
QUV	ASTM G154	1000 Hours - Passed
Tack Free Time	25°C / 55% RH	3-4 hours
Toxicity	Clever Lab.	No Restriction After Curing
Hydrolysis (%8 KOH, 15 day at 50 °C)	Clever Lab.	No Change Observed In Elastomeric Property
Hydrolysis (H ₂ O, 30 days at 60-100 °C Rotatively)	Clever Lab.	No Change Observed In Elastomeric Property
HCl (PH=2, 10 days at RT)	Clever Lab.	No Change Observed In Elastomeric Property

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DESCRIPTION

PU INJECTION is a single component, low viscosity, closed cell injection resin that reacts with moisture and water. It is a special polyurethane based waterproofing material used to stop pressurized or non-pressure water leaking from cracks in concrete surfaces.

TYPICAL APPLICATIONS

- Foundations,
- Retaining walls,
- Cracked walls,
- Underground surfaces of garages and houses,
- Dams,
- Foundations and underground passages,
- Waste water and sewage systems,
- Warehouses,
- Filler layers and joints.

FEATURES AND ADVANTAGES

- Easy to apply.
- It has an effective performance in sealing cracks, voids and joints in concrete.
- Reaction time can be adjusted.
- Hydrophobic.
- Due to its low viscosity, it penetrates very well into capillary cracks.
- Solvent free.
- Prevents leakage by reacting with water.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before application, all materials and dust in the cracks should be cleaned. Cracks larger than 3mm should be covered with suitable repair materials. The locations of the packers (injectors) are determined according to the place of the leak. Packers are placed at an angle of 45 degrees. The packers should be nailed to a distance of half the thickness of the reinforced concrete. The distance between the packers can be 15 cm and 90 cm.

• PRIMING

If the cleaning process is done in the above-mentioned way and in a sufficient way, priming is not required.

• APPLICATION

PU INJ CATALYST must be mixed well beforehand. PU INJECTION is made ready for use by mixing with the determined amount of catalyst. The catalyst ratio should be determined in the application area according to the crack and leaking water and weather conditions. The catalyst can be used between %5 and %10. The application pressure varies between 14 and 200 bar. The application should be started from the first packer. The pressure is increased until the resin starts to overflow with low pressure. With the overflow of the resin, the other packer is switched to the next one. In the injection application, the resin injected from all packers will overflow from the leaking cracks in the reinforced concrete. After this process, the application is terminated. The consumption of PU INJECTION is the amount that the cracks and gaps must be filled completely.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated waters.

CONSUMPTION

- The consumption of PU INJECTION is the amount required to completely fill the cracks and gaps.

CLEANING

After the application, all tools should be cleaned with CLEVER 001.

PACKAGING AND COLOR

Beige transparent-yellow as a set in 25 kg + 2,5 kg metal packages.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Polyurethane Injection Resin
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,10 ± 0,04 gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	200 cp
Gloss	Clever Lab.	Semi Gloss
Thinning	Clever Lab.	Not recommended
Solid Matter	Clever Lab.	100 %
Flash Point	Clever Lab.	+145 °C
Full Curing Time	Clever Lab.	2 to 4 Hours

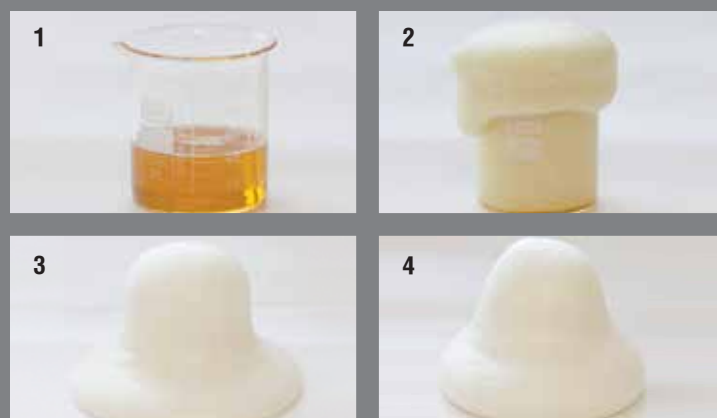
* Viscosity measured at +25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

PU INJ CATALYST

TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Color	Clever Lab.	Transparent-Yellow
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	0,95 gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	~ 15 cp
Flash Point	Clever Lab.	+145 °C

* Viscosity measured at +25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU PRIMER 200 is a single component, polyurethane based primer material developed for all kind of surfaces.

TYPICAL APPLICATIONS

- Concrete,
- Plaster,
- Gypsum, cement panels and wooden surfaces,
- Primer for polyurethane based waterproofing materials,
- Damp or wet concrete surfaces,
- Non-absorbent surfaces,
- Glass, metal and marble surfaces.

FEATURES AND ADVANTAGES

- Easy to apply (brush, roller or spray).
- Fast curing.
- Excellent bonding with non-absorbent surfaces.
- Excellent adhesion.
- Covers the applied surface very well homogenously and it is impregnated.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be dried. Surface defects and cracks should be repaired with suitable products.

• APPLICATION

Open the package and mix with a low-speed mixer for 2-3 minutes. It should be applied without thinning. Apply the primer to the substrate by pouring and spreading with a roller or brush. It is recommended to use airless spray on large surfaces. After 2-4 hours, PU waterproofing material or joint filler should be applied.

APPLICATION REMARKS

- After PU PRIMER 200 is applied, it is absolutely necessary to apply PU waterproofing material before the surface totally cures.
- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

Total Consumption (min.): 0,10 - 0,25 lt/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

It is transparent in 4 lt and 20 lt metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,00 ± 0,05 gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	30 - 60 cp
Application Temperature	Clever Lab.	+5°C to +35°C
Elongation at Break	ASTM D 412 (+23 °C)	> 300
Strength Tensile	ASTM D 412 (+23 °C)	30 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 4 N/mm ²
Tack Free Time	25°C / 55% RH	3 - 6 hours
Coating Time	Clever Lab.	6 - 12 hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

AQUA PU PRIMER 2K is a two component, low viscosity polyurethane dispersion based primer membrane.

TYPICAL APPLICATIONS

- As a primer in all kinds of polyurethane waterproofing systems,
- As a primer over all polyurea waterproofing systems,
- Indoors and outdoors.

FEATURES AND ADVANTAGES

- Easy application.
- 1:1 mixture by volume.
- Zero VOC value.
- Excellent adhesion strength.
- Able to be used on damp concrete.
- Fast drying.
- Easy to clean.
- Easy to apply indoors.
- Same day usage of waterproofing material.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be dried. Surface defects and cracks should be repaired with suitable products.

• APPLICATION

Before application the packages should be opened and mixed with a low-speed mixer for 2-3 minutes. Then component A and B mixed together 2-3 minutes to get ready to be used. It should be applied minimum one layer with the help of roller or brush till the entire surface is covered.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- Surfaces exposed highly to sun should be damped.
- It should be applied in maximum 25 minutes after mixing.

CONSUMPTION

Total consumption (min): 0,15 - 0,20 lt/m²

CLEANING

After the application, all tools should be cleaned with water or suitable solvent. Rollers are disposable, cannot be used twice.

PACKAGING AND COLOR

A Component: 4 lt is brown in plastic bucket.

B Component: 4 lt is white in plastic bucket.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.

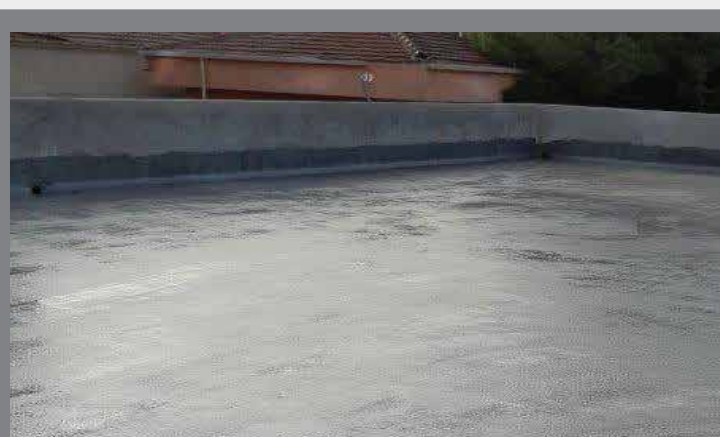


TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Polyurethane Dispersion
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,10 gr/cm ³ (±0,05)
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	50 - 100 cp
Mixture Ratio	Clever Lab.	1:1 by volume
Application Temperature	Clever Lab.	between +5°C - +40°C
Pot Life	Clever Lab. 25°C / 55% RH	25 minutes
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 3 N/mm ²
Tack Free Time	25°C / 55% RH	~1-2 hour
Recoat Time	Clever Lab.	2 - 24 hour

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU UNIVERSAL is a two component, solvent-free polyurethane based primer material.

TYPICAL APPLICATIONS

- As a primer in all kinds of polyurethane waterproofing systems,
- As a primer over bitumen and asphalt membranes,
- On metal, galvanized metal and marble surfaces.

FEATURES AND ADVANTAGES

- Easy application.
- Zero VOC value.
- Excellent adhesion strength.
- Fast drying.
- Easy to clean.
- Easy to apply indoors.
- Same day usage of waterproofing material.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be dried. Surface defects and cracks should be repaired with suitable products.

• APPLICATION

Before application the packages should be opened and mixed with a low-speed mixer for 2-3 minutes. It should be applied minimum one layer with the help of roller or brush till the entire surface is covered. Main waterproofing layer can be applied after 2-3 hours.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It should be applied in maximum 25 minutes after mixing.
- Main layer should be applied maximum 10 hours later after primer treatment.

CONSUMPTION

Total consumption (min): 100 - 200 g/m²

CLEANING

After the application, all tools should be cleaned with water or suitable solvent. Rollers are disposable, cannot be used twice.

PACKAGING AND COLOR

A Component: 8 kg is brown in metal bucket.

B Component :12 kg is transparent yellow in metal bucket

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	Com. A 1,20 gr/cm ³ (±0,05) Com. B 1,00 gr/cm ³ (±0,05)
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	750 - 1000 cp
Mixture Ratio	Clever Lab.	1:1,5 by weight
Application Temperature	Clever Lab.	+5°C to +35°C
Pot Life	Clever Lab. 25°C / 55% RH	25 Minutes
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 4 N/mm ²
Tack Free Time	25°C / 55% RH	~1-2 Hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

ADHERENCE ACCORDING TO ASTM D4541		
SURFACE	STRENGTH	RESULT
Galvanized Steel	> 10 mPa	Surface Degradation
Concrete	> 4 mPa	Concrete Degradation
Damp/Wet Concrete	> 4 mPa	Concrete Degradation
Marble	> 5 mPa	Surface Degradation
CLEVER PU as a main layer over PU UNIVERSAL	> 5 mPa	Surface Degradation

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DESCRIPTION

TILE PRIMER is a single component, primer developed for non-absorbent surfaces.

TYPICAL APPLICATIONS

- Glass,
- Ceramic,
- Glass Ceramic,
- Tiles.

FEATURES AND ADVANTAGES

- Easy application (with brush or cloth).
- Fast curing.
- Provides perfect bonding on nonabsorbent surfaces.
- Excellent adhesion.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be dried. Surface defects and cracks should be repaired with suitable products.

• APPLICATION

After opening the package mix it manually or with a low-speed mixer for 2-3 minutes. It should be applied without thinning. The surface to be primed is applied with the help of a cloth till the entire surface is covered. PU waterproof material should be used after 10-15 minutes.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- Avoid ponding.

CONSUMPTION

Total consumption (min): 0,05 - 0,07 Lt /m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001.

PACKAGING AND COLOR

Transparent in 4 Lt and 20 Lt metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	0,80 ±0,05 gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	30 - 50 cp
Flash Point	ASTM D 93 (Closed pot)	42 °C
Application Temperature	Clever Lab.	+5°C to +35°C
Tack Free Time	25°C / 55% RH	10 - 15 minutes

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PRIMER PVC is a single component, fast curing, low viscosity primer and surface cleaning agent for PVC materials.

TYPICAL APPLICATIONS

- Old PVC membranes,
- PVC surfaces.

FEATURES AND ADVANTAGES

- Easy application (with brush or cloth).
- Fast curing.
- Excellent adhesion.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure good adhesion; oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from surface. After cleaning the surface with high pressure water, it should be thoroughly dried.

• APPLICATION

After opening the package mix it manually or with a low-speed mixer for 2-3 minutes. It should be applied without thinning. The surface to be primed is applied with the help of a roller or brush till the entire surface is covered. Airless spray is recommended to be used for large surfaces. PU waterproof material should be used after 10-15 minutes.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- Avoid ponding.

CONSUMPTION

Total consumption (min): 0,100 Lt /m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001.

PACKAGING AND COLOR

Transparent in 4 Lt and 20 Lt metal buckets

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	0,85 ± 0,05 gr/cm ³
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	20 - 60 cp
Application Temperature	Clever Lab.	between +5 °C- +35 °C
Tack Free Time	25°C / 55% RH	15-30 minutes

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

AQUA EPOXY PRIMER is a two component, low viscosity, water based, epoxy primer. It is a fast-drying primer that can be applied to damp concrete, mixed with the volume by 1:1.

TYPICAL APPLICATIONS

- As a primer in all kinds of polyurethane waterproofing systems,
- As a primer in all kinds of polyurea waterproofing systems,
- Indoor and outdoor applications.

FEATURES AND ADVANTAGES

- Easy application.
- Mixture by 1:1 volume.
- Zero VOC value.
- Excellent adhesion strength.
- Application on damp concrete.
- Fast drying.
- Easy to clean.
- Easy to apply indoors.
- Same day usage of waterproofing material.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
- Humidity: W <10%
- Temperature: +5°C and +35°C
- Relative Humidity: <85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure good adhesion; oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from surface. After cleaning the surface with high pressure water, it should be thoroughly dried. Surface defects should be repaired with suitable products.

• APPLICATION

Before using, the packages should be opened and mixed separately 2-3 minutes with a low-speed mixer. Then components A and B are mixed 2-3 minutes and made ready to use. The mixture should be applied minimum 1-2 layers by a roller or brush till entire surface is covered.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- Surfaces exposed highly to Sun should be dampen before usage
- It should be applied in maximum 25 minutes after mixing.

CONSUMPTION

Total Consumption (min.): 0,15 - 0,20 lt/m²

As a moisture barrier: 0,50 - 0,60 lt/m²

CLEANING

After the application, all tools should be cleaned with water or suitable solvent. Rollers are disposable, cannot be used twice.

PACKAGING AND COLOR

A Component: 4 Lt is white in plastic bucket.

B Component :4 Lt is yellow in plastic bucket.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. Adequate ventilation is required during application. For more detailed information, ask for a Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Water Based Epoxy
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,00 gr/cm ³ (±0,05)
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	100 cp
Mixture ratio	Clever Lab.	1:1 by volume
Application Temperature	Clever Lab.	between +10°C - +40°C
Pot life	Clever Lab. 25°C / 55% RH	50 min.
Adhesion to concrete	ASTM 4541 (+23°C)	> 3 N/mm ²
Tack Free Time	25°C / 55% RH	3 - 4 hours
Recoat Time	Clever Lab.	3 - 12 hours
Friction Resistance	ASTM D4541 (TABER 503)	120*10 ⁻³

* Viscosity measured at +25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

EPOXY PRIMER is a two component, chemically cured, solvent-free epoxy primer for waterproofing materials.

TYPICAL APPLICATIONS

- Indoor and outdoor,
- Protective coating for absorbent surface systems of industrial flooring,
- Sewage and waste facilities,
- Parking lots and walkways,
- Primer for PU and epoxy systems,
- Warehouses and factories.

FEATURES AND ADVANTAGES

- Solvent free.
- Multi-purpose primer for concrete.
- Easy to apply (via brush, roller or spray).
- Resistant to common cleaning chemicals.
- Creates a strong film layer on the surface.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
- Humidity : W < 10%
- Temperature : +5°C and +35°C
- Relative Humidity : < 85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. Surface defects should be repaired with suitable products. After the surface is prepared, the tensile strength of the ground concrete should be minimum 1.5 N/mm² and the humidity rate should not exceed 5% maximum.

• APPLICATION

Components A and B should be combined and mixed with a low speed mixer or by hand for 2-3 minutes. The pot life of the mixture is 45 minutes at +25°C. Higher temperatures may reduce the pot life. After the surface is repaired and preparation is completed, it is applied to the floor with a roller in accordance with the application system selected. It can also be applied to the surface by mixing 0,10 - 0,30 mm dry silica sand at a ratio of 1 to 1 or by sprinkling 0,20 - 0,50 mm dry silica sand on it. Do not keep the mixture in the equipment for more than 30 minutes. Even though EPOXY PRIMER does not contain solvents, good ventilation will protect the applicator, prevent condensation on the paint film and ensure optimum coating performance. Ventilation should be continued during the curing time.

APPLICATION REMARKS

- Not recommended for loose and unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

Total consumption (minimum): 0,30 - 0,50 kg/m²

CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

17kg (A) + 8Kg (B) in transparent in a metal bucket.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between + 5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Solvent Free Epoxy
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,10 gr/cm ³ (± 0,05)
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	85 KU
Mixing Ratio	Clever Lab.	2,12/1 by weight
Gloss	Clever Lab.	Glossy
Application Temperature	Clever Lab.	+5°C to +35°C
Thinning	Clever Lab.	Not Recommended
Temperature Resistance	Clever Lab.	121°C Dry
Solid Content	Clever Lab.	100%
Hardness	ASTM D2240, DIN 53505, EN ISO R868	> 90 (Shore D)
Compressive Strength	Clever Lab.	> 95 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
VOC (Volatile Organic Compound)	Clever Lab.	31 gr/lit
Pot Life	Clever Lab.	30 minutes
Tack Free Time	25°C / 55% RH	6 hours
Full Curing Time	25°C, 55% RH	7 days
Recoating Time	Clever Lab.	8 to 24 Hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

EPOXY PRIMER WB is a two component, chemically curing, moisture tolerant, water based, epoxy primer.

TYPICAL APPLICATIONS

- Indoor and outdoor applications,
- As a primer for applications such as epoxy, PU or cement based systems,
- Moisture barrier applications,
- As concrete sealing,
- As an bonding agent between old and new concrete.

FEATURES AND ADVANTAGES

- Water based.
- It is high level barrier against water and moisture.
- Provides great adhesion to all absorbent surfaces, including damp concrete.
- It is resistant to common cleaners and chemicals.
- Odorless.
- Not flammable.
- It is suitable for indoor applications.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. Surface defects should be repaired with suitable products. After the surface is prepared, the tensile strength of the ground concrete should be minimum 1,5 N/mm²

• APPLICATION

A and B components should be combined and mixed with a low speed mixer for 2-3 minutes. After the mixture is completed, it is made ready to use by diluting with 20-30% water. Pot life of the mixture is 60 minutes at +25°C. Higher temperatures reduce the pot life. Do not wait more than 60 minutes to apply the mixture. After the surface is repaired and preparation is completed, is applied to the floor with a roller in accordance with the application system selected. Good ventilation will prevent condensation and ensure optimum coating performance. Ventilation should be maintained during curing. After the white layer on the primed surface turns transparent, epoxy or polyurethane top layer application should be started. 0,15 - 0,20kg/m² is used as a primer. As a moisture barrier, a minimum of 3 layers should be applied at 0,50-0,60 kg/m².

APPLICATION REMARKS

- Not recommended for loose and unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

Consumption (min.): 0,15 - 0,30 kg/m²
As a moisture barrier: 0,50 - 0,60 kg/m²

CLEANING

After the application, all tools should be cleaned with water.

PACKAGING AND COLOR

Transparent color in 5 Kg (A) + 15 Kg (B) plastic bucket.
Transparent color in 2,5 Kg (A) + 7,5 Kg (B) plastic bucket.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for a Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Water Based Epoxy
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,05 gr/cm ³ (±0,05)
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	100 - 300 cp
Application Temperature	Clever Lab.	+5°C to +35°C
Thinning	Clever Lab.	%20-30 with water
Water Vapour Permeability	EN ISO 7783-2	3,9 gr/m ² 24 Hours Class III (low, <15)
Water Permeability	NF EN 1062-3	0,003-0,006 kg/m ² Hours 0,5 Class III (low, < 0,1)
Compressive Strength	Clever Lab.	> 3 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 3 N/mm ²
Pot Life	Clever Lab. (+25°C)	1 hours
Tack Free Time	25°C / 55% RH	4 - 5 hours
Recoat Time	Clever Lab.	6 - 12 hours
Friction Resistance	ASTM D4541 (TABER 503)	120*10 ⁻³

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

EP PRIMER SLC is a two component, filled, water-based multi-purpose epoxy primer.

TYPICAL APPLICATIONS

- Metal roofs,
- Metal coated areas,
- Wooden coatings,
- Over the bitumen membrane,
- Renewal of old polyurethane or polyurea insulation,
- In repairment and filling construction by adding silica sand.

FEATURES AND ADVANTAGES

- Easy to use.
- 1:1 mixture by volume.
- Low VOC value.
- Excellent adhesion to many surfaces.
- Easy cleaning.
- Ease of use in closed areas.
- Excellent chemical and alkali resistance.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. Surface defects should be repaired with suitable products. After the surface is prepared, the tensile strength of the ground concrete should be minimum 1,5 N/mm²

• APPLICATION

Before use, the packages should be opened and mixed with a low-speed mixer for 2-3 minutes. Then the A and B components are mixed for 2-3 minutes and made ready for use. It should be applied in one layer with the help of a roller, brush or spray until the entire surface is covered. For the filling, the mixture prepared by mixing with silica sand should be used. It will be easier for air evacuation if scanning is done with a dry roller on large concrete surfaces 5-10 minutes after application. In spray applications, it should be diluted with clean water at a maximum rate of 20%.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It should be applied within maximum 45 minutes after mixing.

CONSUMPTION

- Metal surfaces: 0.20 - 0.25 lt/m²
- Flat surfaces: 0.15 - 0.20 lt/m²
- Rough surfaces: 0.20 - 0.25 lt/m²

CLEANING

After the application, all the tools used should be cleaned with water.

PACKAGING AND COLOR

A Component: 3,8 lt
B Component: 3,8 lt

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for a Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Water Based Epoxy
Solid Content	ASTM D 2697	44 % by volume
Flash Point	ASTM D1310	TOK \geq 93°C
Mixture Ratio	Clever Lab.	1:1 by volume
Application Temperature	Clever Lab.	Between +10°C - +40°C
Pot Life	Clever Lab. At 25°C / 55% RH	50 min.
Voc	EPA 24	\leq 100 gr/lit
Tack Free Time	At 25°C / 55 % RH	6 hours
Recoat Time	Clever Lab.	Between 12 - 48 hours

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DESCRIPTION

PU 640 TC-1K is a single component, transparent, PU based, high UV resistance aliphatic top coat. It cures with the humidity in the air and creates a transparent and glossy film layer. As it is aliphatic, it preserves its color when exposed to sunlight and does not fade or become yellowish.

TYPICAL APPLICATIONS

- Industrial floors,
- Indoor and outdoor car parks,
- Top coat for wood, stone, marble, brick e.t.c.
- Stadiums,
- Terrace, veranda and balconies,
- High pedestria traffic areas,
- Roofs exposed to UV,
- Top coat for epoxy coatings,
- Surfaces requiring high abrasion resistance.

FEATURES AND ADVANTAGES

- Easy to apply (by brush, roller or spray).
- It has excellent UV resistance.
- It provides excellent adhesion to the surface.
- As it is aliphatic, it preserves its color when exposed to sunlight and does not fade or become yellowish.
- It is resistant to continuous water contact.
- Preserves its mechanical properties between -40°C and +80°C.
- It has excellent chemical resistance.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application in order to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be dried. Surface defects should be repaired with suitable products.

• PRIMING

PU PRIMER 200 should be used for absorbent surfaces such as concrete, cement or screed and TILE PRIMER for non-absorbent surface. It can be applied with a brush. There is no need for a primer as a top coat in Polyurethane and Polyurea applications.

• APPLICATION

Before the application, mix it with a low-speed mixer for 2-3 minutes. While mixing the product, care should be taken not to let air into the mix. If air is mixed into the material, visible air bubbles will occur after the material is cured on the floor. The material is poured over the primed surface and spread over the entire surface with the help of a roller or brush.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

For each layer minimum: 0,10 - 0,15 Lt/m²

CLEANING

After the application, all tools used should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

It is transparent in 4 Lt and 20 Lt metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Aliphatic Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	0,95 gr/cm ³ (±0,01)
Viscosity	ASTM D 4287 (+25°C)	80 - 180 cp
Water Vapor Permeability	ASTM E 96	0,8 gr/m ² hour
Application Temperature	Clever Lab.	+5°C to +35°C
Heat Resistance	Clever Lab.	100 days at + 80°C
Shock Heat Resistance	Clever Lab.	200°C
Hardness	ASTM D2240, DIN 53505, EN ISO R868	>60 (Shore D)
Elongation at Break	ASTM D 412 (+23°C)	%50
Tensile Strength	ASTM D 412 (+23°C)	25 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
QUV	ASTM G53	2000 hours
Service Temperature	Clever Lab.	-40 to +80°C
Tack Free Time	25°C / 55% RH	4 - 6 hours
Recoat Time	Clever Lab.	6 to 24 hours
Hydrolysis (Potasium Hydroxide 8 %, 10 days at 60°C)	Clever Lab.	No significant Change Observed In Elastomeric Property
Hydrolysis (Sodium Hypoclarite 5%, 10 Days)	Clever Lab.	No significant Change Observed In Elastomeric Property
Water Absorbancy	Clever Lab.	< %1

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU 600 TC-1K is a single component, polyurethane based, high UV resistant aliphatic top coat membrane. It is elastic top coat material for PU waterproofing membranes. It forms an elastic and transparent film layer curing with the humidity in the air. Due to its aliphatic structure, it protects the color of the substrate when exposed to sunlight, does not fade or turn yellow.

TYPICAL APPLICATIONS

- Areas exposed to pedestrian traffic,
- As elastic top coat material for polyurethane waterproofing,
- Industrial floors,
- On materials such as wood, stone, marble or brick,
- Terraces, porches and balconies,
- Exposed roofs.

FEATURES AND ADVANTAGES

- Easy application (with brush, roller or spray).
- UV resistance.
- Due to its aliphatic structure, it protects the color of the substrate when exposed to sunlight, does not fade or turn yellow.
- When applied it forms a single piece membrane that does not cause joint formation or leakage.
- Provides good adhesion to the surface.
- High resistance against stagnant water.
- It preserves its mechanical properties between -40 °C and +90°C.
- It has excellent chemical resistance.
- It has excellent mechanical properties as well as excellent tensile and tear resistance.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be dried. Surface defects should be repaired with suitable products.

• PRIMING

PU PRIMER 200 should be used for absorbent surfaces such as concrete, cement or screed. It can be applied by brush. There is no need for a primer as a top coat in Polyurethane and Polyurea applications.

• APPLICATION

Before the application, mix it with a low-speed mixer for 2-3 minutes. While mixing the product, special care should be taken not to let air into the mix. If air is mixed into the material, visible air bubbles will occur after the material is cured on the floor. The material is poured over the primed surface and spread over the entire surface with the help of a roller or brush.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated waters.
- If polyurethane waterproofing materials will be coated, recoat time should be passed.

CONSUMPTION

Total Consumption (min.): 0,20 - 0,60 lt/m²

CLEANING

After the application, all tools should be cleaned with water. Rollers and brushes should be disposed.

PACKAGING AND COLOR

It is transparent in 4 lt and 20 lt metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. Adequate ventilation is required during application. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Aliphatic Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,00 gr/cm ³ (±0,05)
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	400 - 800 cp
Water Vapor Permeability	ASTM E96	0,8 gr/m ² hour
Gloss	Clever Lab.	Glossy
Application Temperature	Clever Lab.	Between +5°C - +35°C
Heat Resistance	EOTA TR011	100 days at +80°C
Shock Heat Resistance	Clever Lab.	200°C
Hardness	ASTM D2240, DIN 53505, EN ISO R868	40 (Shore D)
Elongation at break	ASTM D 412 (+23°C)	> %300
Tensile Strength	ASTM D 412 (+23°C)	> 40 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N / mm ²
QUV	ASTM G53	2000 Hours - Passed
Service Temperature	Clever Lab.	Between -40 °C and +90°C
Tack Free Time	25°C / 55% RH	6 - 8 hour
Recoat Time	Clever Lab.	24 hour
Hydrolysis (Potasium Hydroxide 8 %, 10 days at 60 °C)	Clever Lab.	No significant Change Observed In Elastomeric Property
Hydolysis (Sodium Hipochlorite 5%, 10 days)	Clever Lab.	No significant Change Observed In Elastomeric Property
Water Absorbancy	Clever Lab.	< %1,4

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU 650 TC-1K is a single component, PU based, aliphatic top coat with high UV resistance. It is an elastic top coat material for PU waterproofing membranes. It cures with the humidity in the air and creates a seamless flexible and colored film layer. As has an aliphatic structure, it preserves its color when exposed to sunlight and does not fade or become yellowish.

TYPICAL APPLICATIONS

- As an elastic finishing material for polyurethane and polyurea waterproofing,
- Building materials such as wood, stone, marble or brick,
- Roofs exposed to UV,
- Surfaces requiring high abrasion resistance.

FEATURES AND ADVANTAGES

- Easy to apply (by brush, roller or spray).
- UV resistant.
- As it an aliphatic structure, it preserves its color when exposed to sunlight, does not fade or become yellowish.
- It provides excellent adhesion.
- It is resistant to continuous water contact.
- It has excellent chemical resistance.
- It has excellent mechanical properties, tear and tensile strength.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be dried. Surface defects should be repaired with suitable products.

• PRIMING

PU PRIMER 200 should be used for absorbent surfaces such as concrete, cement or screed and TILE PRIMER for non-absorbent surface. It can be applied by brush. There is no need for a primer as a top coat in Polyurethane and Polyurea applications.

• APPLICATION

Before use, open the package and mix it with a low speed mixer for 2-3 minutes. While mixing the product, care should be taken not to let air into the mix at a high rate. If air is mixed into the material, visible air bubbles will occur after the material is cured on the floor. The material is poured over the primed surface and spread over the entire surface with the help of a roller or brush.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated waters.
- If polyurethane waterproofing materials will be coated, recoat time should be passed.

CONSUMPTION

For each layers minimum: 0,20 - 0,50 kg/m²

CLEANING

After the application, all tools used should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

White and grey in 4 kg and 20 kg metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

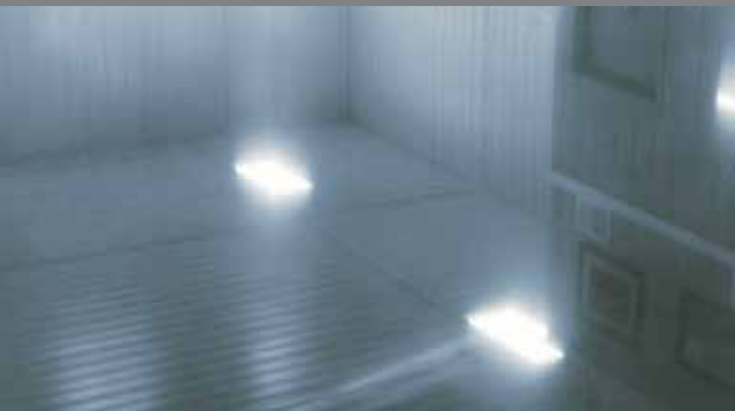
The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Single Component Aliphatic Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,15 - 1,25 gr/cm ³ (±0,01)
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	100 - 500 cp
Gloss	Clever Lab.	Glossy
Application Temperature	Clever Lab.	+5°C to +35°C
Heat Resistance	Clever Lab.	100 days at +80 °C
Hardness	ASTM D2240, DIN 53505, EN ISO R868	>75 (Shore A)
Elongation at Break	ASTM D 412 (+23°C)	%500
Tensile Strength	ASTM D 412 (+23°C)	10 N/mm ²
QUV	ASTM G53	2000 hours
Tack Free Time	25°C / 55% RH	4 to 6 hours
Recoat Time	Clever Lab.	6 to 24 hours

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PU 640 TC-2K is colored, two component, PU-based, aliphatic top coat with high UV resistance. It forms a, brightly colored and very scratch resistant film. As it is aliphatic structure, it preserves its color when exposed to sunlight, does not fade or become yellowish.

TYPICAL APPLICATIONS

- All kinds of surfaces where high abrasion resistance is required,
- Areas exposed to pedestrian traffic,
- Stadiums,
- Industrial floors,
- Indoor and outdoor car parks,
- Roofs, terraces, porches and balconies,
- Top coat of epoxy floor coatings,
- Surfaces requiring high abrasion resistance.

FEATURES AND ADVANTAGES

- Easy to apply (by brush, roller or spray).
- UV resistant.
- As aliphatic, it preserves its color when exposed to sunlight, does not fade or turns yellow.
- It provides excellent adhesion to the surface.
- When applied it forms a single piece membrane that does not cause joint formation or leakage.
- It is resistant to continuous water contact.
- Preserves its mechanical properties between -40°C and +80°C.
- It has excellent chemical resistance.

CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
- Humidity : W < 10%
- Temperature : +5°C and +35°C
- Relative Humidity : < 85%

For detailed information, please consult our technical department.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure a good adhesion such as oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be dried. Surface defects should be repaired with suitable products.

• PRIMING

PU PRIMER 200 should be used for absorbent surfaces such as concrete, cement or screed. It can be applied with a brush. There is no need for a primer as a top coat in Polyurethane and Polyurea applications.

• APPLICATION

The components should be separately mixed with a low speed mixer at first then combined. Combined components should be mixed for 2-3 minutes with a low speed mixer. While mixing the product, air shouldn't be taken in to the product. If air is mixed into the material, visible air bubbles will occur after the material is cured on the floor. The material is poured over the primed surface and spread over the entire surface by roller or brush.

APPLICATION REMARKS

- Not recommended for unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

CONSUMPTION

For each layers minimum: 0,15 - 0,30 kg/m²

CLEANING

After the application, all tools should be cleaned with suitable solvent. Rollers and brushes should be disposed of.

PACKAGING AND COLOR

RAL Code (grey tones) colors specified in 16 Kg (A component) and 4 Kg (B component) metal buckets.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA		
QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Two Component Aliphatic Polyurethane
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,20 gr/cm ³ (±0,05)
Viscosity	ASTM D 2196-86 / EN ISO 3219 (+25°C)	2000 - 5000 cp
Water Vapor Permeability	EN ISO 7789	0,8 gr/m ² hour
Glossy	Clever Lab.	Semi - Gloss
Application Temperature	Clever Lab.	+5°C to +35°C
Mixing ratio	Clever Lab.	4/1
Hardness	ASTM D2240 / DIN 53505 / ISO R868	>60 Shore D
Pot Life	Clever Lab. (+25°C)	35 - 45 minutes
Elongation at Break	ASTM D 412 (+23°C)	> %50
Tensile Strength	ASTM D 412 (+23°C)	10 N/mm ²
Adhesion to Concrete	TSE EN 1542 (+23°C)	> 2 N/mm ²
QUV	ASTM G53	3000 hours
Service Temperature	Clever Lab.	-40 to +80°C
Tack Free Time	25°C / 55% RH	3 to 4 hours
Recoat Time	Clever Lab.	8 to 24 hours
Hydrolysis (Potasium Hydroxide 8 %, 10 days at 60°C)	Clever Lab.	No significant Change Observed In Elastomeric Property
Chemical Resistance (Sodium Hypoclorite 5%, 10 Days)	Clever Lab.	No significant Change Observed In Elastomeric Property
H ₂ O Absorption (10 Day)	Clever Lab.	< %1

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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DESCRIPTION

PUR FLEX two component, solvent free, polyurethane based, self levelling coating. It is high mechanical and chemical resistant, hygienic and easy to clean. It makes a glossy finish coat and high crack bridging.

TYPICAL APPLICATIONS

- Factories,
- Warehouses,
- Car Parks,
- On concrete surfaces requiring chemical and mechanical resistance,
- Stores and offices,
- Cold rooms,
- Schools, hospitals,
- Shopping centers.

FEATURES AND ADVANTAGES

- Solvent free.
- High resistance to abrasion and friction.
- High elasticity.
- Permanent coating without any joint.
- Easy to clean, hygienic.
- No need to maintenance, it is durable.
- Easy to apply.

APPLICATION PROCEDURE

• SURFACE PREPARATION

Before the application, in order to ensure a good adhesion such as oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from the surface. After washing the surface with high pressure water, it should be dried. Surface defects should be repaired with suitable products.

• PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should be used on non-absorbent surfaces such as metal, ceramic. Please examine "prime table" for detailed information.

• APPLICATION

PUR FLEX; A component is mixed in its bucket with low speed mechanical mixer (300-400rpm) till it gets homogenous. Add Component B to Component A, and mix using a low-speed mixer for two minutes. Mix well to avoid air entrainment. The application time is between 20-30 minutes.

CONSUMPTION

For 1,5 mm coating thickness, use 1,85 kg/m² (without sand).

PACKAGING AND COLOR

16 kg + 4 kg (20 kg combi set) is gray in metal bucket.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	FEATURE
Color	Chosen RAL Colors
Component Number	2 (can be used with sand)
Mixing Ratio	A/B 4/1 (Weight)
Density	+20°C 1.36 gr/m ³ (mixing density)
Elongation at Break	< 50
Hardness	< 63
Tensile Strength	< 13
Application and Surface Temperatures	+5°C to +30°C
Walkability	16 Hour
Tack Free Time	-25 °C to +60 °C
Recoat Time	48 Hour
Chemical and Mechanical Strength	7 days
Pot Life	at +23 °C 20 to 30 minutes

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DESCRIPTION

EPOXY REPAIR; Two component, solvent free, chemically cured, mortar for repair, anchorage and building up.

TYPICAL APPLICATIONS

- Concrete and stone walls,
- High adherence to all kinds of metal and steel construction materials,
- Fixing of earthquake dampers and balustrades in bridges and viaducts,
- Fixing of anchoring elements,
- Sealing of dilatation tapes.

FEATURES AND ADVANTAGES

- Perfect adherence to concrete and steel.
- Used both in horizontal and vertical applications.
- Never sagging.
- Resistant to chemicals.
- It has high filler capacity.
- Easy to apply, paste consistency.

APPLICATION PROCEDURE

• SURFACE PREPARATION

All surfaces to be coated must be free of grease, oil, moisture and other foreign matter. Before application, in order to ensure a good adhesion oil, grease, paraffin wastes, cement grout, loose particles, mold release areas, cured old membranes should be removed from surface. Steel surfaces should be cleaned of rust by sandblasting. If there is water flow on the surface, it should be drained or the water flow should be blocked with a suitable material.

• PRIMING

Primer is not necessary for surfaces cleaned properly.

• APPLICATION

It is supplied in two-component kits. A and B components are combined to be ready to be used by mixing with a low speed mixer in 2-3 minutes. Pot life of mixture is 40 minutes at +20°C. Higher temperatures will reduce pot life of the coating, lower temperatures will increase. Don't mix by manually. It is applied by spatula, trowel or cartridge gun. The prepared holes are filled starting from the bottom. The application should be at least 2 mm and maximum 30 mm. During the anchor assembly, the filled EPOXY REPAIR should be rotated into the holes drilled at the depth and width determined in the project, and it should be observed that the material overflows the hole.

CONSUMPTION

Total minimum consumption: 1,70 kg/m² for 1mm thickness.

PACKAGING AND COLORS

3,75 + 1,25 Kg Metal Buckets

Grey.

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Epoxy Resin
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	1,70 gr/cm ³ ± 0,05
Application Thickness	Clever Lab.	2mm - 30mm
Retention Time	Clever Lab.	~40 minutes
Flexural Strength	Clever Lab.	(1 day) ≥ 17 N/mm ² (7 day) ≥ 25 N/mm ²
Compressive Strength	Clever Lab.	(1 day) ≥ 30 N/mm ² (7 day) ≥ 75 N/mm ²
Adhesion Strength	Clever Lab.	(1 day) ≥ 3,5 N/mm ² (7 day) ≥ 3,0 N/mm ²
Application Surface Temperature	Clever Lab.	+5 °C +35 °C
Service Temperature	Clever Lab.	-15 °C +90 °C
Tack Free Time	Clever Lab.	4 - 8 Hrs
Full Curing Time	Clever Lab.	7 days

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DESCRIPTION

PU ACC CATALYST; It is catalyst which accelerates the reaction time of PU 100 - PU 110 - PU 110 PLUS and PU 120 systems.

TYPICAL APPLICATIONS

Used for accelerating the curing time of single component polyurethane membranes.

FEATURES AND ADVANTAGES

- Accelerates the reaction of PU especially in winter times,
- Eliminates defects of application and bubbles,
- Increases the thixotropy value of coating film,
- Provides to apply a thicker layer.
- Increases very effectively the mechanical features of products.

APPLICATION PROCEDURE

• SURFACE PREPARATION

It is added as the portion of 0,20 - 0,40 kg into 25 kg pail. Stir properly till getting homogenous mixture. The mixture should be used in 30 minutes.

CONSUMPTION

0,20 - 0,40 kg is used for 25 kg package.

PACKAGING AND COLOR

Transparent color in 1 kg plastic box

STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in its unopened original package at temperatures between +5°C and +25°C. Opened product should be used as soon as possible.

PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fire. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.

TECHNICAL DATA

QUALIFICATION	METHOD	FEATURE
Coating Type	Clever Lab.	Accelerator
Density	ASTM D 1475 / EN ISO 2811-1 (+20°C)	0,95 gr/cm ³ (±0,05)
Colour	Clever Lab.	Transparent - Red

* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

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PRIMER TABLE

The main topics that should be done for a healthy and correct waterproofing application are; planning, detail solutions, choosing the right product and primer.

Appropriate primer selection:

You can start the installation of waterproofing systems with the appropriate primer selection after controlling the weather conditions and completing the surface preparation. The primer series of CLEVER POLYMER provides unique properties for different surfaces. CLEVER POLYMER's primer types secure your waterproofing application on any surface by strengthening, stabilizing and sealing sub-surfaces and providing excellent adhesion with related polyurethane liquid waterproofing products.

SURFACE AND CONDITIONS	CONCRETE	HUMID CONCRETE	GYPSUM	METAL STEEL	POROUS CERAMIC TILES	GLASS / GLAZY TILES	PVC MEMBRANES	EPDM MEMBRANES (OLD TYPE)	BITUMEN MEMBRANES	LOW TEMPERATURE APPLICATION	VAPOR BARRIER	NEGATIVE PRESSURE / RISING HUMIDITY (tanks)
POLYURETHANE PRIMERS												
PRIMER 200	X	X	X	X	X			X				
PU UNIVERSAL	X	X							X	X		
TILE PRIMER						X						
PRIMER PVC							X					
WATER BASED PRIMERS												
EPOXY PRIMER WB	X	X	X								X	X
AQUA EPOXY PRIMER	X	X	X								X	X
AQUA PU PRIMER 2K	X	X								X		
EP PRIMER SLC	X			X	X				X			



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