



TECHNICAL DATA SHEET

TYVcure 3PX

CHARACTERIZATION

Application field

TYVcure 3PX is a two-component system that has been developed for the rehabilitation of industrial and communal wastewater facilities, water insulation of engineering structures. The result is a thick, high-strength and chemical resistant coating on technological structures. It is also suitable as a matrix material for glass fiber reinforced composites for various application purposes.

Properties

- extremely fast-setting
- high strength
- high chemical resistant
- high abrasion resistant

Composition

TYVcure 3PX resin is made of two liquid components:

- "A" component: waterglass solution
- "B" component: isocyanate-based blend
- "A"+"B" mixture: light, yellowish emulsion

TECHNICAL DATA

Liquid components

Characteristics	Value	Test Method	Unit
Enclosed space flash point of "B" component	> 170	MSZ EN ISO 2719:2016	°C
Open space flash point of "B" component	> 200	MSZ EN 15967:1979	°C
Volatile organic content (VOC) of "A" component ¹⁾	0	MSZ EN 3251:2009	m/m%
Volatile organic (VOC) content of "B" component ¹⁾	0	MSZ EN 3251:2009	m/m%

¹⁾ at 150 °C

Component	Characteristics ²⁾	Value	Unit
„A” waterglass	density	1,5 ± 0,1	g/cm ³
	viscosity	400 ± 50	mPas
„B” isocyanate-based blend	density	1,2 ± 0,1	g/cm ³
	viscosity	190 ± 30	mPas

²⁾ Measured at 25 °C



Hardened resin / Essential characteristics

Characteristics ³⁾	Test method	Performance	Unit
Compressive strength	MSZ EN 13892-2:2003	≥ 50	MPa
Flexural strength	MSZ EN 13892-2:2003	≥ 30	MPa
Adhesion strength ⁴⁾	MSZ EN 13892-8:2003	≥ 3,2	MPa
Linear shrinkage	MSZ EN 12617-4-2002	≤ 0,1	%
Abrasion resistance	MSZ EN 9640-8:1988	≤ 75	mg
Surface water uptake	MSZ EN 12808-5:2009	≤ 24	g/m ² ·day
Frost resistance ⁵⁾	ÉMIHSZ 281:1972	resistant	-
Thermal resistance ⁶⁾	ÉMIHSZ 281:1972	resistant	-
Water vapor diffusion resistance	MSZ EN ISO 12572:2016 23-0/85	14·10 ⁷ – 18·10 ⁷	m ² ·s·Pa/g
Water tightness	1 m water column, 24 hours	watertight	-
Chemical resistance	ÉMISZ 281:1972	resistant	-

³⁾ after one week at 25 °C

⁴⁾ pull-off test on concrete

⁵⁾ after 25 freeze-thaw cycles

⁶⁾ at +80 °C

RESISTANCE

Chemical resistance

Chemicals tested	Result ⁷⁾	Chemicals tested	Result ⁷⁾	Chemicals tested	Result ⁷⁾
Normal petrol	1	H ₂ O ₂ 30%	5	HNO ₃ 40%	1
Super petrol	5	H ₂ O ₂ 5%	5	IPA	4
CaCl ₂ - saturated	5	H ₂ SO ₄ 10%	5	MgCl ₂ - saturated	5
Diesel	5	H ₂ SO ₄ 20%	4	NaCl 20%	5
Acetic acid 10%	5	H ₂ SO ₄ 40%	5	NaOH 10%	5
Acetic acid 20%	5	HCl 10%	5	NaOH 30%	5
Ethanol	1	HCl 37%	4	NaOH 50%	5
Oil	5	HNO ₃ 10%	5	Lactic acid 10%	5
Phosphoric acid 10%	5	HNO ₃ 20%	4	Toluol	4

⁷⁾After one month soaking on 25 °C :

Assessment guide:

1 Mechanical properties changed significantly (color may change)
- the coating is not suitable for the storage of the test chemical

2 Mechanical properties changed considerably (color may change)
- the coating may be suitable for the storage of the test chemical for less than one week period

3 Mechanical properties changed moderately (color may change)
- the coating may be suitable for the storage of the test chemical for less than one month period

4 Mechanical properties changed slightly (color may change)
- the coating may be suitable for the storage of the test chemical for one to two months period

5 Mechanical properties remained unchanged (color may change)
- the coating is suitable for the permanent storage of the test chemical

⁷⁾ the surface of the specimen was exposed to permanent contact with the test chemical



APPLICATION

Ambient temperature at work

Minimum ambient temperature at work: +10 °C
Maximum ambient temperature at work: +40 °C

Application time

Temperature [°C]	Potlife [min]	Pressure release time [min]
10	10 - 12	50 - 70
15	8 - 10	35 - 50
20	5 - 7	30 - 40
25	4 - 6	25 - 35

Mixing ratio

A component : B component = 2 : 3 by mass
A component : B component = 1 : 2 by volume

Mixing

During all operations with the initial components, especially with component "B", all contact with moisture must be avoided, including contact with the moisture content of the ambient air. Homogenization of "A" and "B" components is carried out in a plastic bucket by using a drilling machine with a paint mixing rod. The recommended mixing speed is 300 to 600 R/minute which also depends on the size of the vessel. Mixing time is 1 minute, till the full homogenization of the material. If viable let the least air as possible get into the blend. The temperature of the components shall be between 15 and 25 °C during mixing.

Longer mixing time or higher mixing speed produces shorter pot life, and therefore, must be avoided.

The homogenized blend must be put to rest for 30 minutes before usage then mix it up again (for a maximum of 1 minute). It is important to apply the total amount of the mixture onto the surface to be coated right after blending it.

Material consumption

Material consumption, among others, depends on the way of application, the condition of the surface, and on the consistency. The exact consumption value shall be determined for the actual building individually.

Tool cleaning

The resin shall be removed from the tools and equipment that are contaminated with resin, by using clean rags. The thin remaining resin layer can be removed by acetone. Where acetone is applied, an operable fire extinguisher must be available at the construction site.

Waste treatment

Remaining liquid or gel-like resin mix must be considered **hazardous waste**. However, hardened resin and the remaining pieces of the reinforcing materials are inert, and therefore, can be handled as normal household or industrial waste. Acetone contaminated waste must be stored separately from other litter, in well-sealed metal vessels.

DELIVERY

Packaging

Designation	Unit	Net mass
TYVcure 3PX Small pack "A" + "B" components	2 plastic cans	15 kg + 25 kg
TYVcure 3PX Large pack "A" + "B" components	3 drums	312 kg + 480 kg



STORAGE

Storage conditions

The resin components must be stored and transported in separate, airtight vessels. Special care must be devoted to "B" component protection against moisture. During storage and transport, the temperature shall be between +10 °C and +25 °C if possible. The resin containing vessels must be protected against direct sunshine and weather impacts.

Storage time

The quality of the product is guaranteed for 6 months from delivery provided it remains in its original, unopened packaging.

MARKING

Product group

Protection of industrial and communal wastewater facilities, water insulation of engineering structures rehabilitation product

Safety

At the first purchase, the manufacturer provides the customer with separate safety data sheets for each component. Please follow the instructions on the treatment, storage and disposal of the product. Beyond the general working clothes and special protection tools (e.g. safety helmets and belts) the following items are necessary for the safe use of resins: thin rubber gloves, protective glasses that provide side protection as well or transparent protective mask, on top of the working clothes: removable thin full-body overalls made of polyethylene or paper. Moreover, the contractor shall provide the following items in situ: first aid kit (e.g. bandages), eye washing liquid, reserve working clothes and protective clothes, and fire extinguisher.

SPECIAL INFORMATION

Any application of the product to purposes other than clearly mentioned in this data sheet, is possible only by preliminary consulting with Polinvent Kft.