



URBAN SURFACE PROTECTION
THE TOTAL SURFACE PROTECTOR

USP-PIR “ABC”

“Accelerator, Base, Catalyst” - POLYESTER INJECTION RESIN

Product Description:

USP-PIR is a low viscosity polyester resin, specifically designed to be injected into cracked substrates to permanently seal and structurally bond such substrates. It is fast setting with a rapid strength gain within 2 hours.

USP-PIR low viscosity polyester resin for the injection of cracks. It is a high-performance material which gives an excellent bond to concrete, brickwork, stonework etc, and hence permanently seals and structurally bonds such substrates. It has good chemical resistance and abrasion resistance. This product may not be suitable for certain internal applications where nuisance odours may be a problem.

USP-PIR “ABC” allows for the use of a system accelerator. This allows the user control over the rate of curing of the system in adverse conditions. USP-PIR “ABC” can allow for the installation and delivery of this composite system at temperatures as low as -5 DegC.

USP-PIR “A” (Accelerator) “B” (Base) “C” (Catalyst) system is simple to use and highly versatile.

Uses:

1. Vacuum grouting and consolidation of concrete pavements.
2. Crack injection of concrete slabs.
3. Filler joist repairs to balconies and composite floor construction.
4. Consolidation of honeycombed concrete and cavities.
5. Vacuum resin injection to stabilise concrete and masonry elements.
6. Functional operation in cold weather environments.

Packaging:

225.5 ltr Unit (245.5 Kgs) comprising of: 2.5 ltr Comp A (Accelerator)
 200 ltr Comp B (Base)
 23 ltr Comp C (Catalyst)

Technical Data:

Specific Gravity: 1.10 +/- 0.02
Viscosity: 120 cPas
Pot Life: 50-70 minutes @ 10°C Standard (**See acceleration of resin**)





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Typical Ultimate Physical Properties:

Compressive Strength:	40-55 MPa (Depending on conditions)
Modulus:	1.95 GPa
Shrinkage % (free debonded):	7.0 approx

Directions for Use / Application:

Please Note: Each injection application is unique and must be assessed on its own parameters, but the summary below may be used as a guide.

1. Substrate Preparation:

Successful application depends on very thorough preparation. The crack to be treated must be dry and free from grease, oil, dust and other contaminants. Any loose material must be blown clear with clean dry compressed air. The surface of the crack can then be sealed with a fast setting composition which could also be used to grout in the injection nipples. The distance between the injection nipples/ports should be greater than the estimated depth of the crack (typically 1.5 times).

2. Mixing:

The two components of the injection resin should be thoroughly mixed together by volume in the ratio:

10 Parts Base:

1 Part Catalyst:

Using a suitable mixer attached to a slow speed drill, taking care not to entrain air into the mixture. The homogeneous material can then be transferred to a suitable injection gun ready for application. (**See acceleration of resin**)

3. Application:

The resin should be injected into the first (lower) nipple until it begins to flow from the adjacent nipple, the hose is disconnected, and the first nipple closed off. The resin is then injected into the second nipple, until it flows out of the third; this process is repeated until the whole crack has been injected. After the resin has been allowed to cure, the injection nipples should be removed, and any holes or voids made good.

Acceleration of Resin:

1. Substrate Preparation:

As above

2. Mixing:

The three components of the injection resin should be thoroughly mixed together by volume in the ratio:

10 Parts Base:

1 Part Catalyst:

0.1 Parts Accelerator

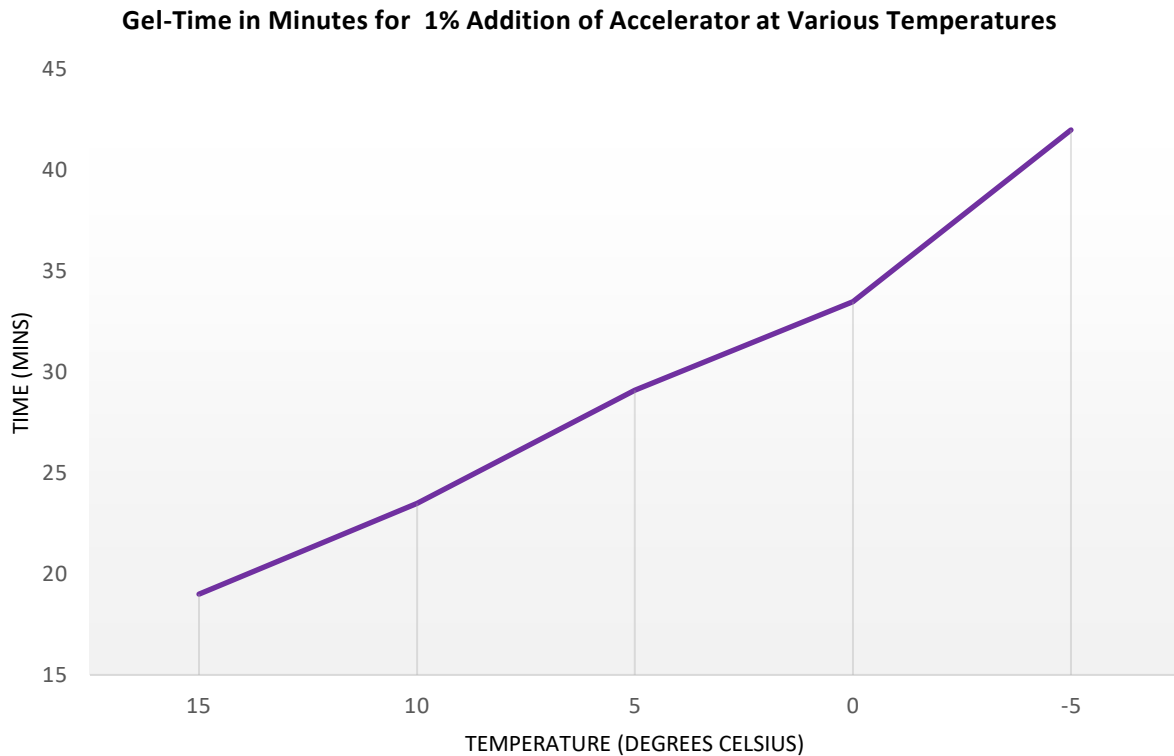
Using a suitable mixer attached to a slow speed drill, taking care not to entrain air into the mixture. The homogeneous material can then be transferred to a suitable injection gun ready for application. In cold/very cold conditions mixing speed can be increased to ensure homogenous mixing.





3. Application:
As above

Gel/Cure Time Manipulation:



Use the above table to achieve the corresponding Gel/Cure time at 15 DegC to minus 5 DegC.

Use the data below for quick reference.

Time (mins)	0 DegC	5 DegC	15 DegC
Gel Time	33	29	19
100% Cure Time Dry Concrete	120	90	45
100% Cure Time Wet Concrete	X2	X2	X2

Please note this indicative data is prepared under laboratory conditions with a fixed percentage addition of accelerator.

Storage/Cleaning:

Where possible keep in a dry place (between 5°C and 30°C).

Store in dry, frost-free conditions away from direct sunlight, under such conditions the shelf life is at least twelve months.

If standardized storage is not an option and the product is exposed to the elements, please allow extra mixing and speed to ensure homogeneity.

All tools should be cleaned before the material hardens using a proprietary low hazard cleaner.

If the mortar sets it can only be removed by mechanical means.





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Health and Safety:

USP-PIR resin component contains styrene, which is currently classified as a hazardous material. It is flammable, with a flash point of 32°C.

Wear suitable protective clothing, eye/face protection and gloves, and ensure adequate ventilation.

For further health and safety information, please refer to the relevant Safety Data Sheets.

KEEP OUT OF THE REACH OF CHILDREN

Please refer to Material Safety Data Sheet.

Legal Notes: See USP Limited Standard Terms & Conditions.

USP is REACH compliant to EU 2015/830

Our technical department is always at your service for further information and advice.

Our technical advice and recommendations given verbally, in writing or by trials are believed to be correct. They are neither binding regarding possible rights of third parties nor do they exempt you from your task of examining the suitability of our products for the intended use. We cannot accept any responsibility for application and processing methods that are beyond our control.

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