

## Wecryl Concrete Repair System (PRC)

Concrete replacement for manual application



### Brief description

The Wecryl Concrete Repair System is an innovative PMMA-based system developed for repairing concrete. It is tested and approved in accordance with EN 1504-3:2006-03 "Products and systems for the protection and repair of concrete structures". Consequently the Concrete Repair System can be used in areas with and without structural relevance. A key feature of the Concrete Repair System is the primer, which also provides corrosion protection.

### Properties and advantages

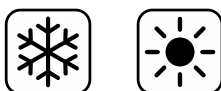
- Easy to apply
- Fast-curing, rapidly achieves final strength
- High compressive strength > 85 N/mm<sup>2</sup> after 1 day
- High tensile strength in bending > 23 N/mm<sup>2</sup>
- Low shrinkage < 0.3 mm/m
- Resistant to frost and de-icing salts
- Largely resistant to acids, alkali solutions and diesel
- UV-, hydrolysis- and alkali-resistant
- Solvent-free

### Applications

The Wecryl Concrete Repair System can be used as a substitute for concrete to make good any damage and skips on horizontal slightly sloping surfaces in civil engineering structures. The Wecryl Concrete Repair System is also suitable for repairing and levelling or for restoring the concrete cover depth on concrete elements. On account of its special properties, such as high compressive strength and tensile strength in bending, the system is the perfect product for areas with or without structural relevance. The Wecryl Concrete Repair System can be applied in accordance with the principles and methods for the protection and repair of concrete structures as set out in EN 1504-3:2006-03.

- Application in splash zones
- Application in atomised-spray zones
- Application in areas with or without structural relevance
- Replacement of damaged or carbonated concrete
- Increased coverage of reinforcement steel
- Improved structural strength (cross-sectional enhancement)

### Application conditions



### Temperatures

The system can generally be applied within an ambient temperature range between at least 3 °C and +35 °C. Some products are also suitable for application at sub-zero temperatures. Please refer to the table below for exact details.

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	Temperature range, in °C		
	Air	Substrate*	Material
<b>Corrosion protection</b>			
Wecryl 176, white	0 to + 35	+3 to +40*	+3 to +30
<b>Primer layer</b>			
Wecryl 176, white	0 to + 35	+3 to +40*	+3 to +30
<b>Repair mortar</b>			
Wecryl 885	0 to + 35	+3 to +40*	+3 to +30

\* The substrate temperature must be at least 3 °C above the dew point during application and curing.

#### Moisture

The relative humidity must be ≤ 90%.

The surface to be coated must be dry and ice-free.

The surface must be protected from moisture until the coating has hardened.

#### Consumption and reaction times

	Consumption [kg/m <sup>2</sup> ]	
	Steel 8 mm diam.	Steel 16 mm diam.
<b>Corrosion protection</b>		
Wecryl 176, white	approx. 400 g/m <sup>2</sup> *	approx. 600 g/m <sup>2</sup> *
	* If, after the first layer has dried, any of the steel surfaces are still exposed due to skips, it is vital that a second layer of corrosion protection is applied.	
<b>Primer layer</b>	fine-sandy	coarse
Wecryl 176, white	min. 0.5 g/m <sup>2</sup> *	min. 0.7 g/m <sup>2</sup> *
	* Consumption rates may vary depending on the condition of the substrate. If any pinholes are still exposed due to skips, it is vital that another layer of Wecryl 176 is applied. Skips must always be avoided.	
<b>Repair mortar</b>		
Wecryl 885	approx. 2.4 kg/m <sup>2</sup> per mm layer thickness	

	Reaction time (approx. values at 20 °C)			
	Pot life	Rainproof	Overlayable	Curing time
Wecryl 176, white	12 min	30 min	45 min	2 hours
Wecryl 885	12 min	30 min	1 hour	3 hours

#### Application tools



Product	Application tool
Wecryl 176, white	Sheepskin roller, brush
Wecryl 885	Smoothing trowel

#### Substrate preparation

Correct substrate preparation and a flawless primer coating are essential for ensuring the functional durability of the WestWood® Wecryl Concrete Repair System.



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Generally the substrate must be sound, dry, and free from loose and adhesion-reducing particles. That is why coats of paint, cement slurry, dirt and grease, for instance, must always be removed completely. As a rule this is done by shot blasting, scarifying or grinding and then vacuuming off the debris.

The top layer of concrete, to which the Wecryl Concrete Repair System is applied, must be prepared so that the surface is rough. The rounded tops of the firmly embedded aggregate grains must be exposed.

The primer coating then applied creates an ideal barrier and enables optimum adhesion between the substrate and the WestWood® Wecryl Concrete Repair System.

### Treatment of the reinforcement

Loose particles of rust on the reinforcement already exposed or laid bare by the preparation method must be removed. The rust must be removed so that surface preparation grade SA 2 1/2 is achieved in accordance with EN ISO 12944-4.

If a concrete cover depth in accordance with EN 1992-2 ( $c_{min} = 40$  mm) cannot be achieved normally with the concrete replacement, the reinforcement must be treated with a coat of corrosion protection.

Once hardened, the corrosion protection must not display any visible skips and the reinforcement must be coated completely.

The next layer must not be applied until this coat has cured fully.

### Corrosion protection

#### Wecryl 176 – Corrosion protection

Whenever Wecryl 176 is used as corrosion protection, WestWood® 910 must be added as an anti-flow additive. This changes the viscosity, or rather the thixotropic properties, of Wecryl 176 so that the resin does not run off the reinforcement too quickly.

Depending on the desired effect, up to 2 % w/w of WestWood® 910 may be added. WestWood® 910 is added before the catalyst, Wekat 900, is added.

An even coat of corrosion protection is applied to the reinforcement using either a brush or a sheepskin roller. It is vital that there are no skips, i.e. the entire surface must be coated. However, if skips - exposed patches of steel - are visible once the resin has cured, a second coat of Wecryl 176 must be applied.

It is important that the reinforcement is completely encased in Wecryl 176.

Once the resin has cured fully, a mirror can be used to examine less accessible areas to ensure that there are no skips.

### Primer

#### Wecryl 176, white – Primer for absorbent substrates

Use the sheepskin roller to apply an even film-forming coat of primer. Avoid creating puddles of primer.



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Once the coating has cured, apply a second coat to cover any skips (bubbles, areas not fully coated).

### Concrete repair mortar

#### Wecryl 885 – Concrete repair mortar

Stir the mortar and pour it onto the primed surface, then immediately compact with a smoothing trowel and smooth over/compact the surface.

Thickness of applied coating: 10 - 40 mm per application.

Please note: Make sure that the mortar is worked well into the corners (compressed).

### Performance features according to DIN EN 1504-3:2006-03

#### WestWood® Wecryl Concrete Repair System

Key features	Rating	Test Standard	Harmonised technical specification
Compressive strength	Class R4 ( $\geq 45$ MPa)	EN 12190	EN 1504-3:2006-03
Adhesion	Class R4 ( $\geq 2.0$ MPa)	EN 1542	
Hindered shrinkage / swelling	Shrinkage: Class R4 ( $\geq 2.0$ MPa) Sources: Class R4 ( $\geq 2.0$ MPa)	EN 12617-4	
Modulus of elasticity	NPD	EN 13412	
Thermal compatibility, part 1 "Exposure to frost/dew"	Class R4 ( $\geq 2.0$ MPa)	EN 13687-1	
Grip	Class III: $> 55$	EN 13036-4	
Capillary water absorption	$\leq 0.5 \text{ kg} \cdot \text{m}^{-2} \cdot \text{h}^{-0.5}$	EN 13057	

### Cleaning the tools

If work is interrupted or when it is completed, clean the tools thoroughly with WestWood® Cleaning Agent within the pot life of the material (approx. 10 minutes). This can be done with a brush. The tools are ready to be used again as soon as the cleaning agent has evaporated fully. Simply immersing the tools in the Cleaning Agent will not prevent the material from hardening.

### Information on safety and risks

Please refer to the safety data sheets for the individual products.

### General information

The above information, especially information about application of the products, is based on extensive development work as well as many years of experience and is provided to the best of our knowledge.



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However, the wide variety of requirements and conditions on site mean that it is necessary for the product to be tested to ensure that it is suitable for the intended purpose. Only the most recent version of the document is valid. We reserve the right to make changes to reflect advances in technology or improvements to our products.

### Appendix

System drawings

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System drawing

## Wecryl Concrete Repair System (PRC)

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**Substrate**

1 e.g. concrete

**Primer layer**

2 Wecryl 176

**Corrosion protection**

3 Wecryl 176  
(around reinforcement bars)

**Concrete repair**

4 Wecryl 885

