

Characteristics				
Function	Concrete replacement for stress level M2 (SPCC) according renovation guideline for concrete of the German Association for Reinforced Concrete (DAfStb-SIB)			
Application	Spray application in dense flow method. Low rebound quantity. Good overhead working			
Areas of use				
Uses	For exterior and interior use The product is a component of the LaMaCo System corresponding to the DAfStb Guidelines for repair mortars and concrete 2001-10: Class M 2 / SPCC			
Technical data				
Product group	Wet spray mortar.			
Data	Criterion	Norm / Test prescript	Value	Units
	Density of fresh mortar	EN 1015-6	2.1	kg/dm ³ ⁽¹⁾
	Tear-off strength (after 14 days)	EN 1542	> 2,0	N/mm ² ⁽²⁾
	Flexional strength (after 28 days)	EN 196-1	9 - 12	N/mm ² ⁽²⁾
	Compressional strength (after 28 days)	EN 196-1	46 - 56	N/mm ² ⁽²⁾
	Dynamic E-modulus (after 28 days)	TP BE-PCC / -SPCC	29000	N/mm ² ⁽²⁾
<p>(1 g/cm³ = kg/dm³ = kg/l (2 N/mm² = MPa</p> <p>The values stated are average values. Due to the use of natural raw materials in our products, the actual value determined on an individual delivery may deviate slightly, without compromising product suitability</p>				
Certificates / Norms / Approvals	Report P-22-ibac	SPCC Concrete Repair System Cem Crete WSM 200 Test prescripts: DAfStb Guidelines 2001-10 (SIBR) and TL/TP BE-SPCC 1990 General approval for use as a construction material,		
Application				
	Requirements on the substrate:			
	<ul style="list-style-type: none"> The concrete substrate must be load bearing and free of homogeneous or foreign substances with a separating effect as well as free of corrosion promoting components (e.g. chlorides). Less firm layers and mud accumulation are to be removed. Damp in accordance with the definition of the DAfStb Renovation Guidelines 2001-10. 			
Substrate	<ul style="list-style-type: none"> The purity degree of exposed reinforcement steel after substrate preparation: Sa 2 ½ - clean metal in accordance with DIN EN ISO 12 944-4 (replacement for DIN 55 928 Part 4) or EN ISO 8501-1. Adhesive strength: on average 1.5 N/mm² Adhesive strength: lowest individual value 1.0 N/mm² 			
Substrate preparation	The substrate is to be prepared with suitable mechanical measures such as e.g. blasting with solid blasting agents, or high pressure water blasting (> 800 bars). Pores and blowholes should be opened sufficiently. The edges of damage areas should be angled off below approx. 45°.			


<p>Application temperature</p> <p>Coating procedure</p>	<p>Minimum application and substrate temperature + 5 °C Maximum application temperature + 30 °C</p> <p>SPCC Concrete Repair System Cem Crete WSM 200</p> <p><i>Substrate preparation:</i> <table border="1" data-bbox="956 554 1451 638"> <tr> <td>mechanical measures</td> </tr> </table></p> <p><i>Corrosion protection: (when Reinforcement is exposed)</i> <table border="1" data-bbox="956 667 1451 751"> <tr> <td>Epo Bond SMI</td> </tr> </table></p> <p><i>Reprofiling:</i> <table border="1" data-bbox="956 781 1451 865"> <tr> <td>Cem Crete WSM 200</td> </tr> </table></p> <p><i>Surface treatment:</i> <table border="1" data-bbox="956 894 1451 978"> <tr> <td>rough spray finish</td> </tr> </table></p> <p><i>Post-application treatment:</i> <table border="1" data-bbox="956 1008 1451 1125"> <tr> <td>temperature and humidity regulation</td> </tr> </table></p>			mechanical measures	Epo Bond SMI	Cem Crete WSM 200	rough spray finish	temperature and humidity regulation	
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<p>Mixing ratios</p>	<p>25 kg Cem Crete WSM 200 : 3.25 – 3.375 l water = 1 : 0.13 – 0.135 parts by weight = approx. 8 : 1 parts by weight</p>								
<p>Mixing procedure</p>	<p>Measure out water and add factory dry mortar. Mix for approx. 2 minutes, then allow to ripen for approx. 3 minutes and mix again for another half minute. Important: The prescribed consistency must be achieved after mixing.</p>								
<p>Application time</p>	<p>At 5 °C: approx. 45 minutes At 23 °C: approx. 35 minutes At 30 °C: approx. 15 minutes</p>								
<p>Consumption</p>	<table border="1" data-bbox="542 1402 1471 1520"> <thead> <tr> <th>Article</th> <th>Type of application</th> <th>Consumption approx.</th> </tr> </thead> <tbody> <tr> <td>00750</td> <td>Material per mm damage depth / coating thickness (without rebound)</td> <td>2.1 kg/m² (dry powder)</td> </tr> </tbody> </table> <p>Precise consumption figures should be determined on the object.</p>			Article	Type of application	Consumption approx.	00750	Material per mm damage depth / coating thickness (without rebound)	2.1 kg/m ² (dry powder)
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<p>Application</p>	<p>1. <u>Substrate preparation</u> The substrate is to be prepared with suitable mechanical measures. De-rust the exposed reinforcement steel in accordance with DIN EN ISO 12 944-4 or EN ISO 8501-1 to purity degree Sa 2 ½. The de-rusted reinforcement steel must be free of dust and grease.</p> <p>2. <u>Corrosion protection</u> Immediately after de-rusting the exposed reinforcement steel, the coating with Epo Bond SMI. Coat the reinforcement steels with a fine paint brush evenly and without gaps. Waiting times between 4,5 hours. The corrosion protection must have hardened on the reinforcement steel sufficiently so that it cannot be separated from the reinforcement steel during the 2nd application. Reinforcement steel Ø up to 18 mm: 1st application: Epo Bond SMI. Consumption approx. 130 g/m per single application 2nd application: Epo Bond SMI. Consumption approx. 140 g/m per single application or Reinforcement steel Ø over 18 mm: 1st application: Epo Bond SMI. Consumption approx. 150 g/m per single application 2nd application: Epo Bond SMI. Consumption approx. 160 g/m per single application</p> <p>3. <u>Reprofiling</u> The concrete substrate must be sufficiently pre-wetted before application of Cem Crete WSM 200. It must however be so dry that it only appears matt-damp by the time of application. Spray procedure: the transport of the ready-mixed mortar takes place with a spiral pump in the dense flow method. For spraying, compressed air is used at the spray nozzle to increase spray speed. The transport quantity is variable between 3 and max. 9 l / minute. The transport pressure is 15 to max. 40 bars at a transport range from 20 to max. 50 m with a hose diameter of 35 mm. As compressor, a device with min. 7 m³ / min. air output at 3 bars pressure should be available. Before the first material transport, the hoses should be pre-wet on the inside and prepared for smooth transport with wallpaper paste. Do not transport any diluted Cem Crete WSM 200, as otherwise the material may de-mix and cause blockages in the hose. Spraying should be carried out using a tested nozzle guide, which through nozzle distance, spray orientation, mortar and water quantity significantly influences the quality / rebound of the sprayed mortar. Typical nozzle distance: 0.5 – 1.0 m. 1st coat approx. 50 % of total coating thickness, allow surface to stand with a rough spray finish. The surface is, if necessary, to be protected against premature drying according to local climate conditions, if necessary by hanging tarpaulins against wind and direct sunlight. Min. / max. waiting times between 1st and 2nd spray coats: at +5 °C : 1 - 2 hrs at + 20 °C: 30 min. - 1 h at + 30 °C: 15 - 30 mins.</p>
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<p>Application (con't)</p>	<p>When spraying the second layer, the first layer must still be matt-damp and free of separating substances. If the spray mortar surface is to be worked (rubbing off or smoothing), then spraying must be carried out in two coats, in order to avoid bond disruptions. The surface of the 2nd coat can be drawn off and rubbed down over tracks. Care should be taken to avoid joint disruptions and separations from the substrate.</p> <p>The surface treatment works (drawing off and rubbing down) must take place immediately after the spraying of the last coat. Tracks must be removed.</p> <p>Any working joints that occur should be treated in accordance with DIN 1045, para. 10.2.3 (edition July 1988) as necessary with sand blasting, oil free compressed air blasting off of soiling, and pre-wetting, so that a homogenous mortar layer is produced after conclusion of the spray application.</p> <p>Multiple coats: if greater even coating thicknesses than 40 mm are required, further coats may only be sprayed when the layer beneath has achieved a tear-off strength of on average 1.5 N/mm² (smallest individual value 1.0 N/mm²).</p> <p>The SPCC substrate should then be cleaned and sufficiently pre-wetted. Abrasive blasting is only required where the layer below is not left with a rough spray finish.</p> <p><u>Recommended mixer and wet spray :</u> Compulsory mixer type "WM-Jetmix 125" (mixer drum 125 l / finished mixed goods 90 l). Stainless steel eccentric spiral pump of type "Variojet-FU" (stator KP 20). High pressure hoses, type "NW 35" (with fix quick couplings) Reprofilng spray pistol with nozzle pipe Ø 12 – 15 mm Sales and rental for Germany: <u>Werner Mader GmbH</u> Mortar and Concrete Spray Machines Bullauer Strasse 6 D-64711 Erbach Phone +4960629442-0 Fax +4960629442-29 E-mail: info@wernermader.de Internet: www.wernermader.de Compulsory mixer type: Multimix (mixer drum 125 l / finished mixed goods 90 l) Spiral pump of type PFT-N2V High pressure hoses, type "LW 35mm" (with fix quick couplings) Sales in Germany: <u>PFT GmbH & Co. KG</u> Einersheimer Strasse 53 D-97346 Iphofen Phone +4993 2331-760 Fax +49932331-770 E-mail: info@pft-iphofen.de Internet: www.pft.de</p>
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Application (con't)	<p>Observe manufacturer's operating instructions!</p> <p>4. <u>Surface treatment</u> In general, if not required otherwise, the surface should be left with a rough spray finish (see DIN 18 551). Smoothing is possible immediately after spray application. After a specified hardening time (dependent on temperature, air humidity, application thickness and substrate), the substrate can be drawn off over tracks and rubbed down, during which care should be taken that joint disruptions and separations from the substrate are avoided.</p> <p>5. <u>Post-application treatment</u> PCC mortars are to be treated after application so that no mixing water, which is necessary for the binding process, can escape.</p> <p>Post-application treatment methods:</p> <ol style="list-style-type: none"> 1. Cover with sheeting or mats 2. Increase air humidity in the air layer above the surface 3. Chemical post-application treatment <p>The post-application treatment must continue until the mortar has reached 50 % of its final solidity, under normal conditions according to ZTV-ING after a minimum of 3 days. In the post-application treatment period, no colour change from dark to light may take place.</p> <p>Water for post-application treatment may only be sprayed on the mortar surface once this is rainproof, corresponding to the weathering conditions after 6 - 24 hours.</p> <p>An alternate drying and wetting of the mortar during the post-application period can lead to destruction of the mortar matrix and so to cracks and bubbles.</p> <p>A chemical post-application treatment may only be carried out when the subsequent works will be compatible with this. The corresponding Data Sheets should be observed accordingly:</p> <ol style="list-style-type: none"> 1. "Guidelines for the post-application treatment of concrete" of the DAfStb (February 1984) 2. Data sheet B8 of the Construction Advisory Council for Cement "Post-application treatment of concrete" (November 2002)
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Cleaning of tools	Clean spray nozzle immediately after use with water. Bound material can only be removed mechanically.
Supply	
Product code and name	00750 Cem Crete WSM 200
Packaging	00750-002 25 kg sack
Storage	
Storage conditions	Store in dry conditions.
Storage life	<p>In unopened original sacks, product can be stored for 9 months; in LaMaCo large containers also for 9 months. (Relevant data: refer to packaging).</p> <p>This product is low in chromates according to TRGS 613. We guarantee these characteristics until expiry of the max. storage life.</p>

Environment	
Disposal	Waste has to be disposed considering the local, official regulations. Waste key in accordance with the European Waste Catalogue: 17 09 03.
Special notes	
Marking	Xi – irritant 
Safety	This product requires marking according to the current EU guidelines. For further information on handling, storage and disposal of the product, refer to the EU Material Safety Data Sheet, available for the professional user. You will receive an EU Material Safety Data Sheet with your first order. Please observe the information on handling, storage and disposal of the product.
GISBAU-code	ZP01
Application note	Pay attention to the general application notes
Revision No.	Cem Crete WSM 200/INT/EN/022
Validity	22.01.2008 The information and data serve to ensure the normal application purpose and normal application suitability. Uses not specifically discussed in this Technical Data Sheet may only take place after consultation with LaMaCo. This Technical Data Sheet is valid outside Germany, in all countries without LaMaCo subsidiary.



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Health & Safety Some of the components of this product may be hazardous during mixing and application. Please consult the relevant Health & Safety Data Sheets, available from **LaMaCo Malaysia** on request and sent with each delivery.