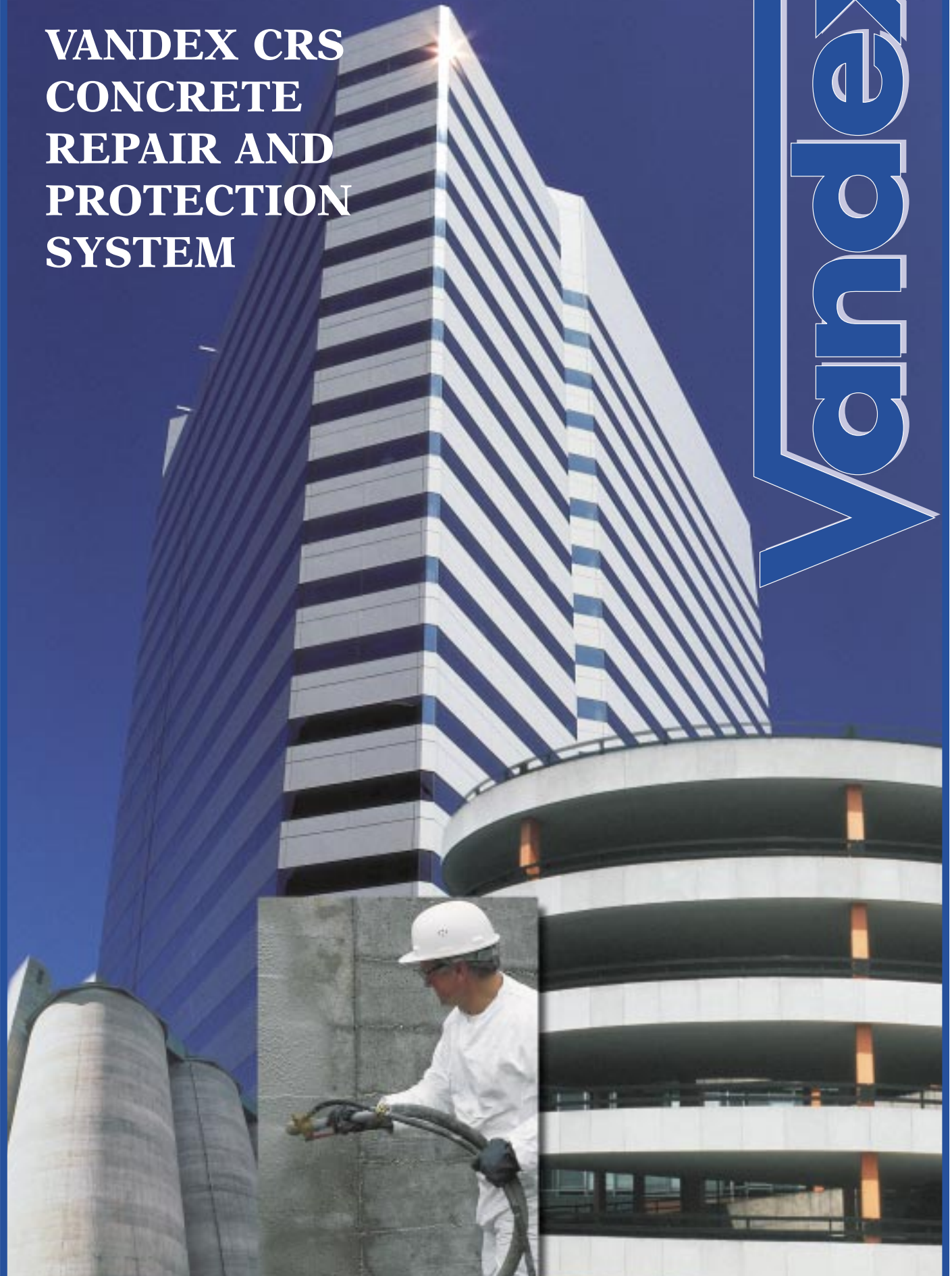


**VANDEX CRS  
CONCRETE  
REPAIR AND  
PROTECTION  
SYSTEM**

**Vanddex<sup>®</sup>**



### How Durable is Concrete?

Reinforced concrete, the most significant construction material of our time, for many years was considered to be resistant to environmental effects. Reinforced concrete manufactured to specification is durable and almost indestructible.

Its high alkalinity ( $pH \approx 13$ ) protects reinforcing steel from corrosion. However, defects in manufacture, inadequate steel cover and external influences can cause severe damage.

### Carbonation – a Critical Factor

Natural ingress of carbon dioxide converts the calcium hydroxide contained in concrete to calcium carbonate, thereby reducing the high alkalinity and anticorrosion properties. With low steel cover of poor concrete quality carbonation can cause the steel to corrode as oxygen and water combine to produce rust and spalling.

### Main Causes of Concrete Damage

Environmental influences and construction defects are the major causes of concrete damage:

- carbonation due to  $CO_2$
- de-icing salts
- insufficient steel cover
- poor concrete quality

The extent of damage and appearance are governed by the cause and progress of the concrete deterioration.

### Systematic Concrete Repair

Only a systematic procedure will result in a durable concrete repair. Equally important is a high-quality, tested product system with balanced components.

The Vandex CRS program provides products and know-how for assured success in concrete repair.

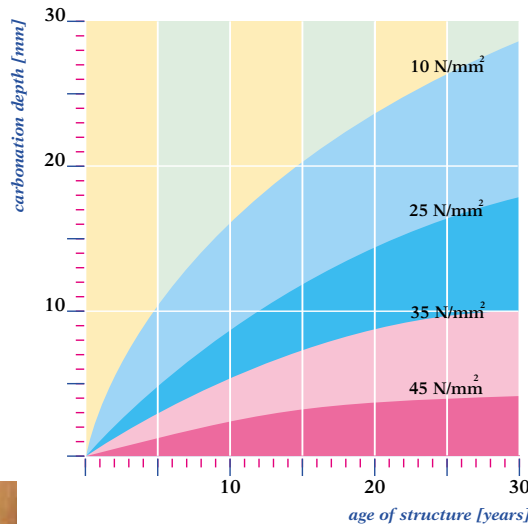
### Concrete Repair Measures Following a Clear Concept

- Structural examination
- Damage diagnosis/ Damage classification
- Repair concept
- Repair of structure
- Quality assurance and Inspection program

### Structural Examination

An examination of the structure using special equipment provides information to enable a correct diagnosis and damage assessment, which leads to an appropriate repair concept.

Carbonation depth as a function of age structure and concrete quality



Assessing the compressive strength

Measuring depth of concrete cover with a Covermeter



# From Damage Assessment to Concrete Repair Concept

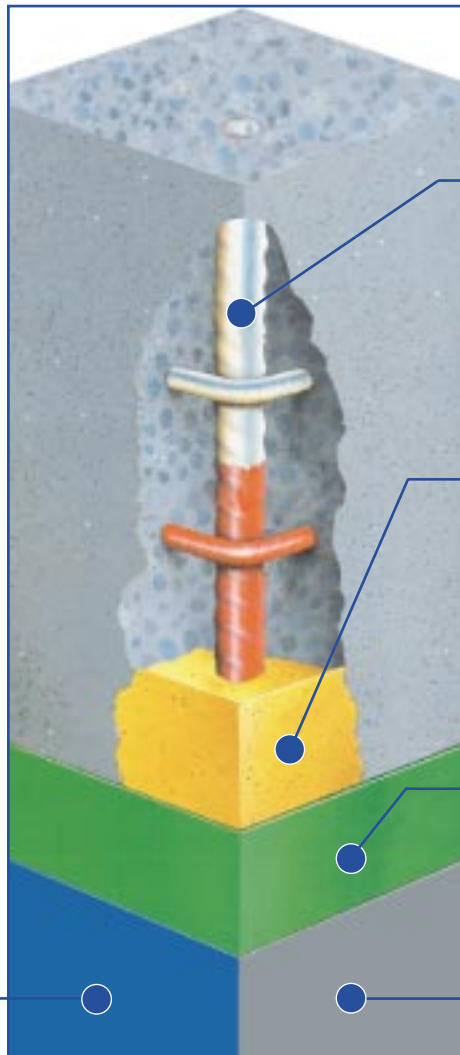
The Vandex CRS program provides system-products and know-how for assured success in concrete repair.

REMEDIAL TREATMENT	STOP CORROSION	REPAIR			SURFACE PROTECTION	
	REINFORCEMENT PROTECTION	REFILLMENT RESTORING PROFILE	SURFACE LEVELLING	WEATHER PROOFING	PROTECTIVE COATING	
<b>VANDEX CRS PRODUCTS</b>	<b>VANDEX CORROSION PROTECTION M</b>	<b>VANDEX CRS REPAIR MORTAR 05</b>	<b>VANDEX CRS REPAIR MORTAR HB</b>	<b>VANDEX CRS LEVELLING COMPOUND LC</b>	<b>VANDEX SEALER AC</b>	<b>VANDEX CRS OS 95</b>
CHARACTERISTICS	Mineralic corrosion protection for reinforcement	Cementitious repair mortar to be mixed with water	Cementitious high-build repair mortar with light-weight aggregates to be mixed with water	Cementitious levelling mortar to be mixed with water	Acrylic liquid weather-proofer to protect concrete structures	Cementitious polymer-modified surface protection coating for concrete with crack-bridging abilities
PACKAGING	 5 kg	 25 kg	 20 kg	 25 kg	 10 litres	 7.5 kg 25 kg

## Vandex CRS Repair Materials and Concrete are Homogeneous

Developed as a product system, Vandex CRS materials are based on many years of experience with Vandex repair mortars, concrete protection and waterproofing materials, along with the latest scientific and concrete technology knowledge.

The product system consists primarily of cementitious materials homogeneous with concrete (strength, modulus of elasticity, thermal movement).



### VANDEX CORROSION PROTECTION M

A cementitious system provides highly effective corrosion protection for reinforcing steel.

### VANDEX CRS REPAIR MORTAR 05

Cement mortar to create a repair mortar with optimum performance in adhesion, workability, strength and dimensional stability.

### VANDEX CRS LEVELLING COMPOUND LC

Levelling compound for filling blow holes and repairing minor concrete surface defects. Also used as a levelling or slurry coat over existing concrete and the CRS repair mortar. Can also be applied as slurry coat.

### VANDEX CRS OS 95

Two-component polymer modified cementitious protective surface coating with crackbridging abilities forms a CO<sub>2</sub>-barrier. Good adhesion to the substrate.

**VANDEX SEALER AC**  
A clear acrylic resin solution providing increased protection against the weather. Impermeable to water, but permeable to water vapour.

## ***Vandex CRS Products Matched to Practice***

*Success in concrete repair requires careful preparation, correct repair procedures and the use of high-quality products.*

*Vandex offers a complete solution with its systematic approach and products of the highest quality backed by technical know-how and expertise.*

***Vandex CRS materials are installed in a minimum number of steps using techniques familiar to the industry.***

*The Vandex CRS Concrete Repair Product Data Sheets present, the individual steps in a clear and concise manner providing quick and easy instruction for the user.*



*Carefully remove unsound concrete and expose reinforcing steel completely.*



*Remove rust and clean reinforcement steel by sandblasting or other suitable mechanical methods.*



*If available use highest waterpressure technology and remove unsound concrete completely. Expose corroded reinforcing steel. Remove rust and clean.*



*Application steps with Vandex CRS products. Stop corrosion. **CORROSION PROTECTION M***



*Restoring Profile. **CRS REPAIR MORTAR 05.** A versatile repair mortar with excellent workability.*



*Restoring Profile. **CRS REPAIR MORTAR HB.** High-build repair mortar ideal for overhead application.*



*Surface Levelling. **CRS LEVELLING COMPOUND LC** is used for surface levelling over the CRS repair and surrounding concrete. Also provides an ideal substrate for the protective coating.*



*Weatherproofing. **SEALER AC** for long-lasting protection against the effects of weather. Improves resistance against freezing and salt interaction.*



*Protective Coating. **CRS OS 95** 2-component system. Highly effective concrete protection, carbonation barrier, crack-bridging.*

# Vandex CRS

## Concrete Repair and Protection System

### *Vandex CRS Products Have Passed Stringent Testing*

*Vandex CRS products must pass stringent internal quality assurance checks and are periodically tested by accredited laboratories, to the highest performance standards (see Vandex product documentation).*

### *Vandex Management System*

*Vandex International Ltd, Switzerland is certified to the ISO 9001:2000 quality management system and the ISO 14001:2004 environmental management system (EMS) which verifies that Vandex International Ltd meets the requirements of international quality and environmental management standards. The Vandex management system offers the customer major advantages:*

- *consistently high product quality*
- *innovative products responding to actual customer needs*
- *a service package which safeguards engineering consultation and proper application of Vandex products*

### *ISO 14001 EMS includes:*

- *adoption of an environmental policy*
- *organization to identify environmental aspects and impacts*
- *commitment to continual improvement*
- *commitment to overall prevention of pollution*



## Vandex Services



*Technical consulting  
Vandex-trained engineers provide professional consulting services for planners and applicators.*



*Site supervision.  
If required, Vandex supervisors demonstrate or supervise applications.*



*Hotline for technical consultation*



*Website-Services  
Full data base on...*

# Vandex Specialized Products for Concrete Repair and Protection



## CONCRETE REPAIR AND PROTECTION

PRODUCT NAME			reinforcement protection	restoring profile	increasing concrete coverage	restoring profile overhead	surface levelling	treatment for hairline cracks and blow holes	weatherproofing	carbonation barrier	crack-bridging protective coating
<b>VANDEX</b>	<i>consumption</i>	<i>packaging</i>									
<b>CORROSION PROTECTION M</b>	2 kg/sq.m in two coats	5 kg	●								
<b>CRS REPAIR MORTAR 05</b>	approx. 19.5kg/sq.m (dry weight) per 10mm layer thickness	25 kg		●	●						
<b>CRS REPAIR MORTAR HB</b>	approx. 14kg/sq.m (dry weight) per 10mm layer thickness	20 kg		●		●					
<b>CRS LEVELLING COMPOUND LC</b>	approx. 1.7kg/sq.m (dry weight) per 1 mm layer thickness	25 kg					●	●			
<b>SEALER AC</b>	0.25–0.5 litres per sq.m depending on concrete porosity	10 ltrs							●		
<b>CRS OS 95</b>	approx. 1.8kg/sq.m wet mix (approx. 1.4kg/sq.m dry weight) per 1 mm layer thickness	bag 25 kg can 7.5 kg							●	●	●

**Vandex**<sup>®</sup>

CONCRETE REPAIR, PROTECTION AND WATERPROOFING

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