

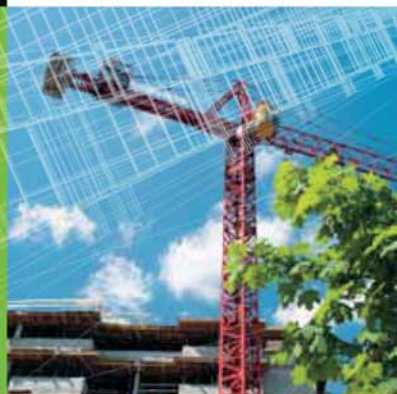


# Morcemsec® Active

SELF-CLEANING AND  
DECONTAMINATING MORTARS



  
grupopuma





The mortars in the **MORCEMSEC® ACTIVE** range by Grupo Puma have two technologies that contribute towards the cleaning of buildings where they are applied as the surrounding environment:

- **Self-cleaning technology**
- **Depolluting technology**



### Self-cleaning technology

The mortars in the **MORCEMSEC® ACTIVE** range allow the façades and other architectural elements to stay clean.

#### How does it work?

The photocatalytic effect of the **MORCEMSEC® ACTIVE** mortars acts in two different ways, depending on the biologically-originated dirt they need to remove:

- It is either dissolved (partial destruction) and later removed by rain water or sprayed water.
- Or it decomposes (total destruction).

The high solar reflectance index (SRI) of **MORCEMSEC® ACTIVE** mortars, is maintained over time thanks to its self-cleaning capacity, thus contributing to the HEAT ISLAND effect.

#### How is it measured?

The photocatalytic effect of **MORCEMSEC® ACTIVE** mortars is evaluated in a laboratory using a test described in the CSTB catalogue, consisting of colourimetric monitoring of the deterioration of Rhodamine B (a pink organic substance) applied over a sample of **MORCEMSEC® ACTIVE**, which is later exposed to UV radiation. With **MORCEMSEC® ACTIVE** mortars, the colour completely disappears in 4 days.



Application of a rhodamine solution to the surface of a sample.



Measuring the colourimetric parameters.



Discolouration tendency test.

#### What does its effectiveness depend on?

The self-cleaning property is a constant battle between the factors favouring the accumulation of biological dirt and the photocatalytic effect of **MORCEMSEC® ACTIVE** mortars.

The higher the degree of exposure to solar light and the lesser the degree of roughness of the surface, the greater the self-cleaning effectiveness of ACTIVE mortars.



According to the OCDE, atmospheric pollution reduces life expectancy and increases respiratory problems such as bronchitis and asthma, which are both causes of premature death. Normally, these effects are combated with passive restrictive measures, thus reducing atmospheric emissions.

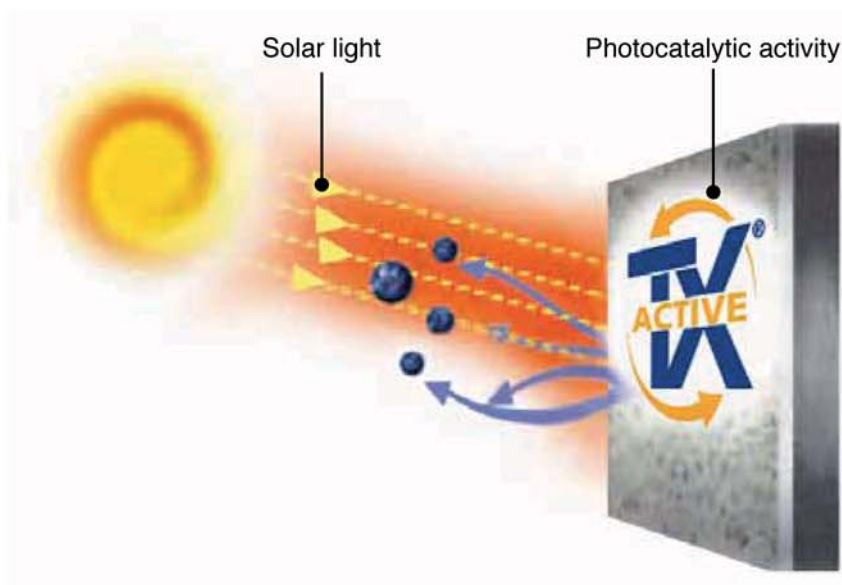
The **MORCEMSEC® ACTIVE** range of mortars work in an active way, eliminating hazardous gaseous substances from the atmosphere (Nitrogen oxides (NOx), suspension particles PM 10 and PM 2,5, volatile organic compounds (VOC) such as benzene, toluene, etc.) thanks to its photocatalytic effect.



### How does it work?

Gaseous contaminants remain trapped on the surface of the **MORCEMSEC® ACTIVE** mortars. In these mortars, the oxidation-reduction reactions indicated by photocatalysis transform the Nitrogen oxides into inorganic salts such as nitrates, carbonates and sulphates.

### How photocatalytic activity works



Solar rays activate the photocatalytic reaction in **MORCEMSEC® ACTIVE** mortars which destroy organic and inorganic compounds before they become stuck to the surface.



# MC



## MORCEMSEC® ACTIVE FINE COAT CR CSIV W2



Photocatalytic rendering mortar for finishing façades, interior work, patios, etc. Waterproof and water vapour-permeable, with self-cleaning and depolluting properties. For plastering and rendering work.

- Develops a self-cleaning effect, decomposing the biological dirt deposited on the surface of the mortar, whilst maintaining its initial aesthetic characteristics.
- Reduces the concentration of hazardous gases originating from urban and industrial contamination through decomposition, thus generating a healthier environment with a lower degree of pollution.
- There is no consumption of photocatalysing agents, meaning the effect lasts for the useful life of the façade.
- Long-lasting white finishes that keep their initial characteristics.
- Suitable for both indoor and outdoor applications.

## MORCEMSEC® ACTIVE SPRAY MORTAR CR CSIV W2



Photocatalytic rendering mortar. Waterproof and water vapour-permeable, with self-cleaning and decontaminating capacities. Contains sufficient fluidity and time for application with mortar spraying machine.

- Develops a self-cleaning effect, decomposing the biological dirt deposited on the surface of the mortar, whilst maintaining its initial aesthetic characteristics.
- Reduces the concentration of hazardous gases originating from urban and industrial pollution through decomposition, thus generating a healthier environment with a lower degree of pollution.
- There is no consumption of photocatalysing agents, meaning the effect lasts for the useful life of the façade.
- Suitable for both indoor and outdoor applications.

# Active



# orcemsec®



The daily use of buildings and infrastructures indirectly represents one of the most intensive human activities related to energy consumption. In this regard, the fact that buildings are responsible for approximately 50% of energy used makes them the main cause of polluting emissions in the atmosphere.

The application of sustainable building criteria makes it essential to respect the environment and the development of current and future companies. For this, the use of building materials that have a lower environmental impact and do not contain toxic or hazardous elements is fundamental.



Here at **Grupo Puma**, we contribute towards reducing the environmental impact of construction in three key areas:

**Introducing natural raw materials** into our production processes. Not only does the actual obtaining of these materials not effect the environment negatively, but also the only conglomerate used in the mortar range is natural hydraulic lime; a material that provides added transpiration properties to the mortars to assist with improving the air quality inside buildings.



**Helping to reduce the energy demands of buildings** constructed using our thermal insulation systems. Improved thermal cladding on buildings reduces the energy consumption needs for regulating the inside temperatures, avoiding a large amount of polluting emissions into the atmosphere originating from fossil fuels.

**Developing a line of ecologically active mortars** that remove part of the pollution caused by human activities, factories, vehicles and domestic heating from the environment. Thanks to the unique formula, Active mortars react with pollution from circulating air and eliminate it, transforming it into biodegradable products. They are mortars with self-cleaning properties that contribute towards cleaning the building itself and its environment.

All of **Grupo Puma's** activities are influenced by a social and ecological awareness. This has led us to continually research and develop increasingly more environmentally-friendly construction materials, worthy of being granted the ECO seal.







International service  
Tel. +34 957 76 40 40  
e-mail: gpx@grupopuma.com

We collaborate with



Arquitectos  
Sin Fronteras



**GRUPO PUMA  
ESPAÑA**

#### **ALBACETE**

Pol. Ind. "B" Garysol, C/ Chopo - parcela 26  
02110 LA GINETA (ALBACETE)  
T. +34 967 27 54 58 - F. +34 967 27 54 58

#### **ALICANTE**

Pol. Ind. Tres Hermanas, C/ Canteros - parcelas 3 y 5  
03680 ASPE (ALICANTE)  
T. +34 965 49 56 31 - F. +34 965 49 56 30

#### **ALMERÍA**

Ctra. Viator km. 1,5  
04120 LA CAÑADA (ALMERÍA)  
T. +34 950 29 09 12 - F. +34 950 29 09 13

#### **ASTURIAS**

C/ Chopera, 15  
33920 RIAÑO I-LANGREO (ASTURIAS)  
T. +34 98 567 37 11 - F. +34 98 568 39 13

#### **BARCELONA**

Pol. Ind. Domenys II, C/ Enología, 15  
08720 VILAFRANCA DEL PENEDES (BARCELONA)  
T. +34 93 890 41 88 - F. +34 93 817 16 61

#### **BIZKAIA**

Polig. Ind. Neinver (Ugaldeguren), Iturrizualde Kalea 4  
48160 DERIO (BIZKAIA)  
T. 673 00 37 69 - F. +34 946 05 33 47

#### **CÁDIZ**

Pol. Ind. Zabal, C/ Velero, s/n  
11300 LA LÍNEA DE LA CONCEPCIÓN (CÁDIZ)  
T. +34 956 64 51 58 - F. +34 956 64 51 62

#### **CÓRDOBA**

Avda. Agrupación Córdoba, 17  
14014 CÓRDOBA  
T. +34 957 26 62 01 - F. +34 957 26 48 07

#### **GRAN CANARIA**

Pol. Ind. Arinaga, C/ Las Mimosas, 128  
35119 AGÜIMES (GRAN CANARIA)  
T. +34 928 18 81 49 - F. +34 928 18 82 14

#### **GRANADA**

Pol. Ind. El Juncaril, C/ Monachil, parcelas 74-75  
18120 PELIGROS (GRANADA)  
T. +34 958 46 77 68 - F. +34 958 08 72 10

#### **MADRID**

Pol. Ind. El Guijar, Avda. El Guijar, 37  
28500 ARGANDA DEL REY (MADRID)  
T. +34 91 870 47 81 - F. +34 91 871 15 27

#### **MÁLAGA**

Pol. Ind. Trévez, C/ Conrado del Campo, 2  
29590 CAMPANILLAS (MÁLAGA)  
T. +34 952 35 47 00 - F. +34 952 34 43 91

#### **MALLORCA**

Pol. Ind. Son Llaüt, Vía Central, parcela 65  
07320 SANTA MARIA DEL CAMÍ (MALLORCA)  
T. +34 971 62 06 32 - F. +34 971 14 11 59

Morcemsec® Active



#### **MÉRIDA**

Pol. Ind. El Prado - parcela 5, nave 8  
06800 MÉRIDA (BADAJOZ)  
T. +34 924 37 85 62 - F. +34 924 37 85 62

#### **MURCIA**

Pol. Ind. Base 2000, Avda. nº 3 manzana 13  
Apartado 448, 30584 LORQUI, MURCIA  
T. +34 968 67 63 70 - F. +34 968 67 63 51

#### **PONTEVEDRA**

Ctra. Caldas-Vilagarcía, km 2,2  
36650 CALDAS DE REIS (PONTEVEDRA)  
T. +34 986 53 03 67 - F. +34 986 53 01 27

#### **SEVILLA**

Pol. Ind. La Palmera, C/ La Palma, 20  
41700 DOS HERMANAS (SEVILLA)  
T. +34 954 69 13 51 - F. +34 954 69 29 02

#### **TENERIFE**

Pol. Ind. San Isidro, C/ Juan de la Cierva, 8  
38109 EL ROSARIO (TENERIFE)  
T. +34 922 62 47 51 - F. +34 922 62 49 80

#### **VALENCIA**

Pol. Ind. La Pahilla, C/ Peñas Albas, parcela 49  
46370 CHIVA (VALENCIA)  
T. +34 96 252 41 31 - F. +34 96 252 41 01

#### **VALLADOLID**

Pol. Ind. La Mora, C/ Las Acacias, parcelas 13-4  
47193 LA CISTERNIGA (VALLADOLID)  
T. +34 983 40 22 79 - F. +34 983 40 32 00

#### **ZARAGOZA**

Pol. Ind. Los Leones, C/ Principal, parcela K-2  
50298 PINSEQUE (ZARAGOZA)  
T. +34 976 65 68 30 - F. +34 976 65 68 31



**GRUPO PUMA  
FRANCIA**

100 route de Nîmes - Av. du Cambourin  
30132 CAISSARGUES



**GRUPO PUMA  
PORTUGAL**

#### **LISBOA**

Fornos de Cima - Calhandriz 2615  
641 ALVERCA (LISBOA)  
T. +35 121 958 73 60 - F. +35 121 958 73 69

#### **PORTO**

Lote 2a - Lot. Ind. Mun. Fontiscos  
Ap. 79. 4784-909 SANTO TIRSO (PORTO)  
T. +35 125 283 37 50 - F. +35 125 285 00 80