



# SIKA AT WORK

A MANUFACTURER OF  
ELECTRICAL ACCESSORIES,  
ALICANTE, SPAIN

SUSTAINABLE FLOORING SOLUTION

BUILDING TRUST



# SIKA FLOORING SOLUTIONS

Sustainable Solutions measured by Life Cycle Assessment (LCA)

## PROJECT DESCRIPTION

This project is about the floor system renovation of an electrical accessories manufacturer for motor vehicles in Alicante (ES), with a total area of 1,300 m<sup>2</sup>.

The owner is a global manufacturer and provider of automotive interior systems, automotive batteries, building systems and facility services. It is recognized as an energy efficiency innovator in buildings and vehicles and as a leader in environmental sustainability and corporate social responsibility. Therefore, the customer is highly committed to reducing their environmental footprint, improving the eco-efficiency of its supply chain and providing environmentally-responsible products and services.

## PROJECT REQUIREMENT

The customer was very interested in a highly durable flooring solution with optimum performance in high chemical and heavy mechanical demanding industrial areas. Therefore, aspects such as durability, performance and benefits the system could bring in the use phase, namely cleaning and maintenance, were decisive factors. In order to demonstrate the benefits of the specified Sika flooring system for the plant facilities in Alicante (ES), Sika opted to complement the technical information with an environmental evaluation of the system.

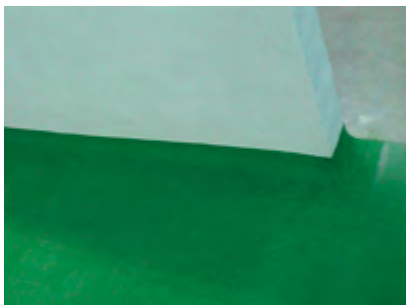
## SIKA'S SUSTAINABLE APPROACH

To evaluate and compare the specified Sikafloor®-20 PurCem flooring system with ceramic tiles, which are typically applied in industrial areas in Spain, a Life Cycle Assessment (LCA) was used. The LCA is cradle to gate for the total area of the flooring system, which means the LCA investigates the potential environmental impact of a product from raw material acquisition and processing to manufacturing of the product, including packaging. The impacts of the components of the two flooring systems are calculated.

## TECHNICAL SOLUTION

- **Substrate:** Slab concrete
- **Flooring:** Sikafloor®-20 PurCem (9 mm)

To differentiate from anti-acid ceramic tiles which are the standard solution in Spain, besides the fact that the Sika solution is less brittle than ceramic tiles, has no need for adhesives and no joints, which are the weakest point of ceramic tiles floor, Sika's Global Product Sustainability Group performed a Life Cycle Assessment (LCA) of the two following floorings solutions:



Flooring System	Adhesive [kg/m <sup>2</sup> ]		Wearing Course [kg/m <sup>2</sup> ]		Joint Filler [kg/m <sup>2</sup> ]	
Sikafloor®-20 PurCem (9 mm)	None	0	Base coat	18	None	0
Antiacid ceramic tiles	Cement	3	Ceramic tiles	30	Epoxy grout	1.60

### RESULTS OF ENVIRONMENTAL EVALUATION

For the project area, the Sikafloor®-20 PurCem flooring system has significantly lower impacts when compared to the ceramic tiles. In terms of relevant environmental indicators such as Energy Footprint, Carbon Footprint and Summer Smog potential, Sikafloor®-20 PurCem has significantly lower environmental impacts:

- - 51% in CO<sub>2</sub> emissions (GWP)
- - 24% in cumulative energy (CED)
- - 42% in summer smog (POCP)

### INVESTING IN SUSTAINABLE SOLUTIONS

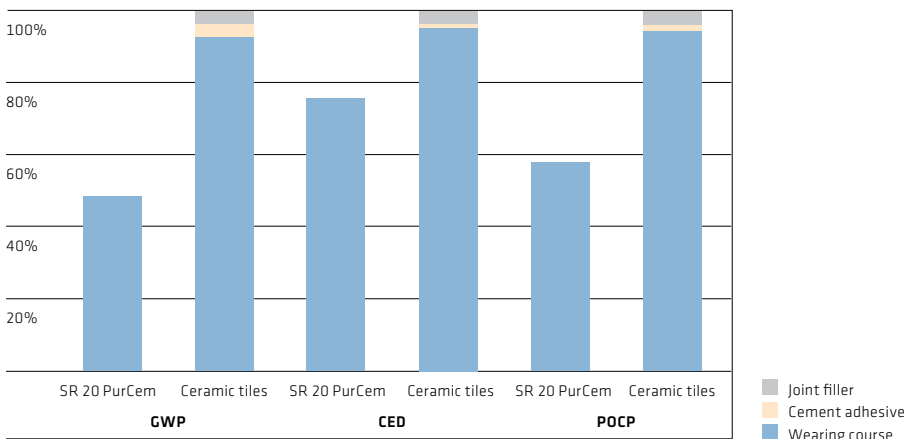
Sika contributes to sustainable construction by offering durable and application friendly solutions to our customers. Applying a high quality Sikafloor®-20 PurCem brings several benefits:

- **Proven Performance:** the system has been successfully installed around the world for decades and continues to provide high performance. Specific to the electrical accessories manufacturing industry the system offers optimal protection against acidic components used in the batteries production.
- **Wide application range:** the system can be installed in various types of manufacturing areas including chemical plants, laboratories, workshops, food and beverage industries. The system offers high durability in areas subject to heavy loading, abrasion and high chemical exposure, which is a key driver for the performance of a manufacturing plant. It is also suitable for thermal shock areas, as it performs and maintains its physical characteristics through a wide temperature range and acidic environments.

- **Easy maintenance:** due to its seamless surface the system provides an advantageous solution without joints that could be the source of degradation or hygiene risk. This characteristic makes it much easier to clean than any flooring system with joints such as the case with tiled flooring system.
- **Solvent free:** the system is a solvent free solution, which improves health and safety conditions during the floor installation process. Furthermore, this feature allows application in close proximity to on-going production process areas, enabling the repair and renovation of existing floors without interrupting the plant or production lines.
- **Cost effective:** no primer is required for application when the substrate has a good quality. Only one product must be applied compared with usage of the alternative system where three different components (adhesive, wearing course and joint filler), are required which significantly increases labour costs and application time.
- **Excellent environmental profile:** the system bears significantly less environmental impacts, namely a low Carbon and Energy Footprint compared to alternative flooring solutions in the Spanish market. Moreover, the Sika solution provides multiple benefits in terms of application, durability, maintenance and costs compared with the alternative system.

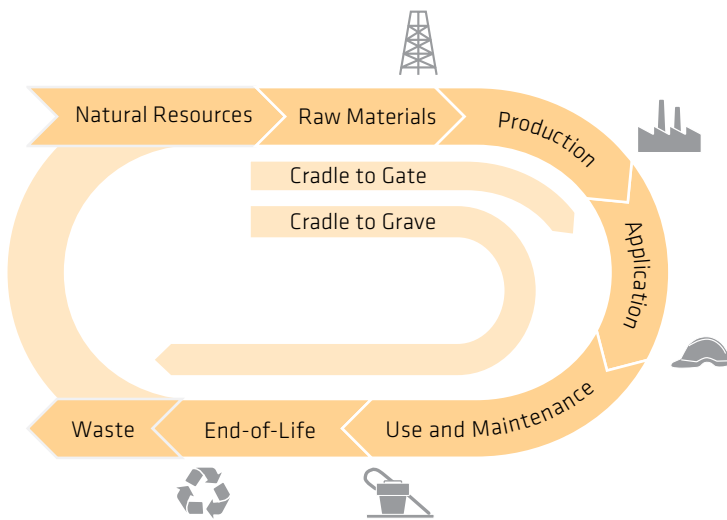
The project allowed Sika to demonstrate its competence and expertise in sustainability, including all relevant quantitative contributions to a high performance tailor-made flooring solution. All requirements were fulfilled from a technical, economic and environmental point of view.

### ENVIRONMENTAL IMPACTS FOR THE FLOORING SYSTEM [1,300 M<sup>2</sup>]





# THE SIKA LIFE CYCLE ASSESSMENT (LCA) APPROACH



Life Cycle Assessment (LCA) is a standardized method to assess and compare the inputs, outputs and potential environmental impacts of products and services over their life cycle. LCA's are increasingly rec-

ognized as the best way to evaluate the sustainability performance of products and systems. The LCA can greatly assist our customers in evaluating Sika's products and systems namely by providing quantitative data on their environmental profile. This enables the differentiation of products that may have similar performance, but greater variations concerning their environmental impact - where obviously the lower, the better. Sika carries out LCA's according to the ISO 14040 series and the standard EN 15804. The impact assessment methodology used is CML 2001. The LCA results are presented for the following three relevant impact categories deemed most relevant for flooring systems:

- Global Warming Potential (GWP) [kg CO<sub>2</sub>-eq.] ("Carbon Footprint") – is the potential contribution to climate change due to greenhouse gas emissions.
- Cumulative Energy Demand (CED) [MJ] ("Energy Footprint") – is the total amount of primary energy from renewable and non-renewable resources.
- Photochemical Ozone Creation Potential (POCP) [kg C<sub>2</sub>H<sub>4</sub>-eq.] ("Summer Smog") – is the formation of reactive chemical compounds, e.g., ozone, from direct sunlight on certain primary air pollutants, which may be harmful to human health, ecosystems and crops.

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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