

High corrosion protection by “Zn Al Flake Micro Layer Systems”

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As pioneers for lacquers and corrosion protection Dr. Carl Dörken and Ewald Dörken established their own company more than 120 years ago. Since then Dörken MKS has developed consequently to one of the leading corrosion experts worldwide. This great tradition is also our aspiration for the future.

As corrosion experts we do not want to offer our customers just any solution. It always has to be the very best. As a consequence, we continuously develop and enhance our products and solutions. The basis for this is our intensive research, with which we promote innovation in the field of corrosion protection. Thereby ensuring that our customers always receive the best solution for their requirements.

Zinc flake serves a highly-specialised niche market. Its efficient function means that it fulfils the specific requirements of this niche so perfectly that it is used in numerous areas in which corrosion protection plays a key role. Whether it is the automotive sector, construction machines or wind energy: the leading industries have relied on zinc flake technology for over 30 years. This process plays to its strengths in the processing of small bulk parts such as screws, clips and spring band clips – with extremely low coat thickness and high durability. It is also increasingly used on large parts with extensive surface areas, such as rear subframes or struts.

This superbly thin characteristic in particular plays a key role in the success of zinc flake: the overall coat thickness is an average of just 8–12 µm – thinner than a human hair. This makes the zinc flake almost invisible in comparison to standard corrosion protection systems such as powder coating or hot dip galvanisation. Nonetheless, it easily achieves a protective effect of several thousand hours against base metal corrosion in neutral salt spray testing as per DIN EN ISO 9227. Numerous approvals confirm this effect.

The function of the zinc flake coating can be explained as a “lacquer” consisting of numerous small flakes. The coating is typically a combination of zinc and aluminium lamella (as per DIN EN ISO 10683 or DIN EN 13858), bound together via an inorganic matrix. Zinc flakes offer cathodic protection, because the sacrificial effect of the zinc means that the component is actively protected against environmental influences.