



Technical Statement – Zinc Whiskers

Dear Sir/Madam,

in today's economy data are a central steering element for almost all processes. Therefore, it is crucial that data are stored safely. One severe threat that exists in a data center is zinc whiskers.

Zinc Whiskers are tiny, hair-like conductive filaments that can grow from zinc-plated surfaces. These whiskers are typically a few micrometers in diameter and can be several millimeters long. They form due to internal stresses in the zinc coating and can detach. Detached whiskers can cause short circuits on the electronics (e.g. circuit boards) which might lead to a damage of the electronics or worse data loss.

A critical surface treatment is zinc electroplating. The electroplating process causes inner stress and tends most likely to zinc whiskers growth. This phenomenon was detected and published by the NASA in the early years of 21st century.

Thermal surface treatments like batch or sendzimir hot-dip galvanizing are not known for zinc whiskers growth under the environment in a data center.

With its **HCP** (High Corrosion Protection) program Sikla offers the optimum solution for corrosion protection in data center environments.

The HCP program varies between the following whisker free coatings :

HDG – batch hot-dip galvanized acc. to DIN EN ISO 1461 resp. DIN EN ISO 10684

US standard: ASTM A 123 / A 123M resp. A 153 for small centrifuged parts

ZINC-FLAKE – base + top-coat (sealing) acc. to DIN EN 13858 resp. DIN EN ISO 10683

US standard: ASTM F 3393

ZINC-MAGNESIA – Sendzimir hot-dip galvanized acc. to DIN EN 10346

US standard: ASTM A 1063 / A 1063M

ZINC-NICKEL* – acc. to DIN EN ISO 19598

US standard: ASTM B 841

* Even though Zink-Nickel is an electroplating process it does not tend to whiskers due to the nickel content which prevents whiskers growth.

The used type of coating always depends on the product geometry.
Besides the HCP program we offer further sendzimir coated products, like our

- installation channels **MS 41 & 27** (all types are Sendzimir hot-dip galvanized acc. to DIN EN 10346 or batch hot-dip galvanized acc. to DIN EN ISO 1461)
- ducting clamps & angles (Sendzimir hot-dip galvanized acc. to DIN EN 10346)

The product families **siFramo** and **siMetrix** are fully in conformity with our HCP standard.

Of course, stainless steel products are also an option and can be safely used.

If you need any further information on specific products, please contact us.



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