

CIMENTERIE SCHWENK – BERNBURG – ALLEMAGNE

En 1992 la nouvelle usine de Bernburg des cimenteries **SCHWENK** a été protégée au **ZINGA**.

Technique d'application : pistolet airless.

Ces photos ont été prises pendant la construction.

30 tonnes de ZINGA ont été utilisées pour cette application.



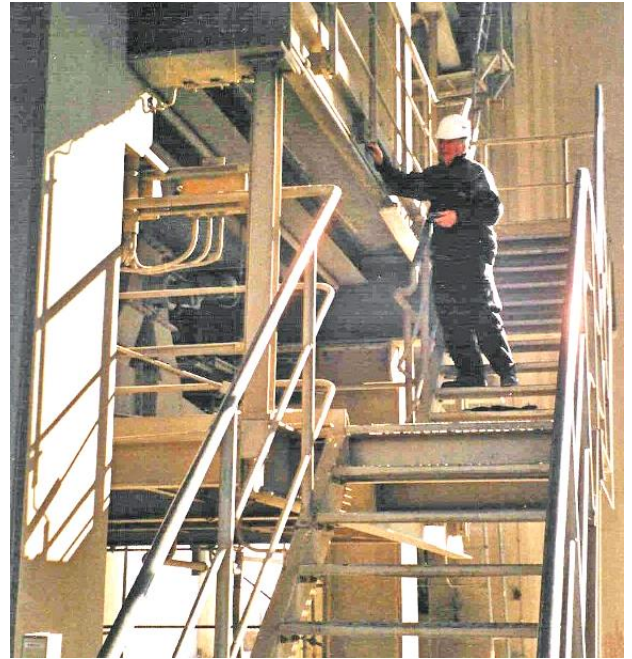
En Février 2003, l'état de la couche de **ZINGA** a été inspecté. Les photos vous montrent que le **ZINGA** est encore en parfait état. Il n'y a pas de traces de rouille après plus de 10 ans.

Le client est très satisfait du **ZINGA**.

Plus tard, le **ZINGA** sera rechargé facilement en appliquant une nouvelle couche sur une surface nettoyée !

Système:
ZINGA 2 x 60 µm EFS

Sur la face de l'usine exposée aux intempéries, où des produits abrasifs et la pluie attaquent et nettoient la surface, l'épaisseur de la couche de **ZINGA** avait diminué de 120 μm à 70 μm . Ceci représente 5 μm de perte par an, ce qui est raisonnable en considération des conditions environnementales très sévères.



De l'autre côté de l'usine, moins exposée, où il y avait cependant une grosse couche de poussière qui adhérait au **ZINGA**, l'épaisseur de la couche n'avait diminué que de 120 μm à 115 μm . Soit à peine 0,5 μm par an par rapport à l'autre côté avec une perte de 5 μm par an !

Sur cette photo la poussière est enlevée et la couche complète de **ZINGA** devient visible.

Ceci est le rapport du 18-03-2003 de **Mr. Schwarz** de la société **AGESO**, concernant son inspection de l'usine en Février 2003 : **plus de 10 ans après application du ZINGA.**

... die elegante, vernünftige Alternative



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Ihr Zeichen	Unser Zeichen	Ihre Nachricht vom	Datum
Your request	Hs-zm.sy.	Febr.2003	March 2003-03-18

Cement factory SCHWENK at Bernburg /East Germany / Inspections on ZINGA after over 10-years after application and submission under rough production conditions.

On your request I travelled most recently to the above referred cement factory and executed a variety of inspections and tests. The steel constructions were assembled in 1991 and completed in 1992. The steel bars and other constructions were blasted by steel-pellets to the degree of Sa 2.5 and subsequently degreased by ZINGASOLV before the application of ZINGA.

The actual applications were done by the known airless-spraying - system under dry and clean production conditions. The specified and achieved layer thickness were around 120 microns. A certain lot was supervised by me personally and therefore certain guarantee documents had been signed by me in 1992. The demanded guarantee time period was 5 years plus 1 day as it is common practice in Germany. A Special form sheet according to DIN 55928 part 7 was used and signed by the all parties involved including myself. The total amount of ZINGA that had been applied for this installation was around 30 metric tons plus around 3000 litres of ZINGASOLV..

Visual inspections:

visual inspections showed an undefined layer of dirt on top of the ZINGA which appeared light greyish in colour as shown in the photographs. This dirt layer apparently acts as a "free of charge protective passive coating" as described later on.

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On the weather-side no such dirt could be detected on top of the ZINGA layers, where abrasive media, rain, snow etc. washes the surfaces clean. Refer to photograph no 5 and one finds darkish grey surfaces of ZINGA. At no situation could the beginning of rust be detected. At no places were cracks or brittle spots discovered. The layers of ZINGA at each and every spot appeared to be extremely hardened.

Thickness meter instrument:

An instrument called MIKROTEST IV AUTOAMTIC had been used which is performs as a magnetic coating thickness gauge. This instrument complies with standards like DIN 50 981 and 50 982, ASTM ,B 499,E 367,D 1186,G12, B 530,BS 5441, ISO 2178,2361 and stems from the firm with the name ELEKTRO PHYSIK, Cologne, Germany. Before measuring the afore mentioned layer of dirt had to be removed by scraping with the backside of a knife so that no harm to actual ZINGA layer occurred.

Thickness:

After over 10 years under very rough cement factory conditions I found the following: Situations with that particular coating of dirt on top of ZINGA showed an almost not measurable decrease of layer thickness. I estimate roughly 5 microns or 0.5 micron per year. At those places I measured several times in order to be absolutely sure, because I could not believe my first readings. This results in remaining layer thickness of around 115 microns. Where there was no such dirt layer on top of ZINGA, a remaining layer thickness of ZINGA was found to be around 70 microns. This results in a decrease of around 50 microns during a time period of one decade. Under the prevailing hard environmental conditions a mere decrease of around 5 microns per year is surprisingly good. The ambient temperatures in that geographic region vary from -26/30 to + 30/35 centigrade including very intensive ultraviolet rays.

Electrical measuring:

A standard e-multi-meter was used to find out whether the substance of the ZINGA layers had changed in respects to both the electrical conductivity and the electrical (ohm)resistance. I can state that after over 10 years under production conditions there was no detectable change in those respects at all. This again proofs the perfect ZINGA layers and the good performance as an electrical conductive metallic coating. It also proofs that no detectable aging of the layers had occurred and that the very fine and small zinc particles plus the binding agent are still in perfect working condition and that the applications back in 1992, had been carried according to my instructions.

Conclusions

Since all inspections and tests that had been carried out produced only positive results I can conclude with one sentence only: " It is all in perfect shape". The customer is very satisfied and happy with ZINGA an now wishes to use ZINGA at other places in the works.

Kind regards



H. Schwarz

Le gris foncé sur l'installation supérieure est du **ZINGA**, et s'avère en parfait état.
Le gris clair est la galvanisation à chaud, où un début de rouille apparaît.

