Goedehoop Colliery

The application

Goedehoop Colliery has been in existence since the early eighties. In about 1995 the mine embarked on several extensions, one of them being to the coal washout facility and conveyor material supply system. It was then suggested to mine management personnel that because of previous paint coating failures that a duplex coating system be used to protect the steel.

The suggested system comprised a single coat high build epoxy coating applied onto a sweep blasted hot dip galvanized surface in accordance with the Association's Code of Practice for surface preparation and application of organic coatings.

The environmental conditions

Coal washing facilities are relatively aggressive environments, due to the combination of coal dust and water. See "Planning the Duplex System for Goedehoop Colliery"

Our findings

Although in existence for a number of years the old wash out plant was found to have several coating failures. Coatings in these conditions are extremely difficult to maintain unless the entire operation is shut down.

The duplex coating system on the steelwork in the new area is in exceptional condition, so much so that the organic coating had to be purposely damaged in order to assess the adhesion of the organic coating and overall condition of the hot dip galvanized coating underneath.

Conclusion

After 10 years of service the duplex coating system is in exceptional condition and had to be purposely damaged, in order to assess and measure the hot dip galvanized coating thickness.

In comparison the paint coating on the carbon steel hand rails of the coal washout facility had failed.
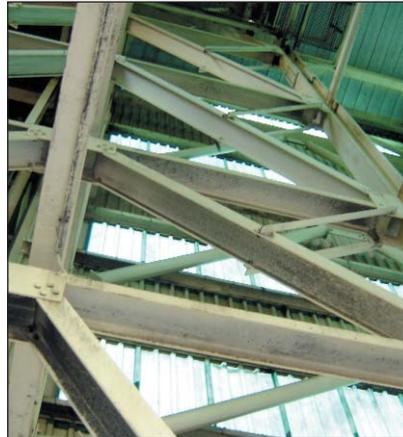
General photo of the structure.

Cross cutting proved that adhesion of the coating was sound.


Hot dip galvanized coating thickness (paint removed).
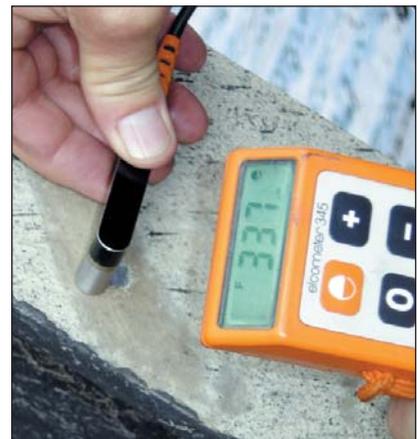
Total duplex coating thickness.

In comparison the paint coating on the carbon steel handrails has failed.
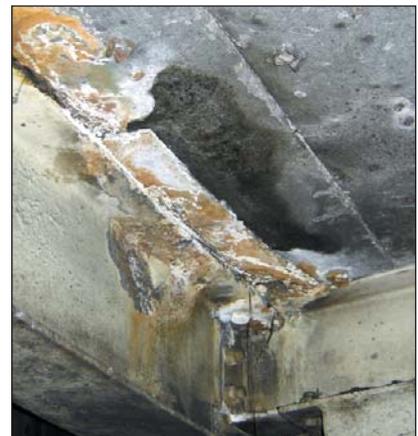
General corrosion conditions of the coal washout facility.