

Q: I did everything I could to make sure the steel part came out of the galvanizing kettle with a bright and shiny coating, and then I checked underneath the top flange of the beam that I was galvanizing and all of these black skimmings were on the coating right below the flange. What do I do with these black skimmings?

A: The exposure of molten zinc metal to air results in a thin layer of zinc oxide formation on the surface of the molten metal. This layer can also contain small amounts of zinc chloride or ammonium chloride from the flux. This material forms a black powdery substance when trapped on the surface of the galvanized coating, as *Figure 1* evidences. According to ASTM A 123 section 6.4 on appearance, this substance is not prohibited from the coating surface.

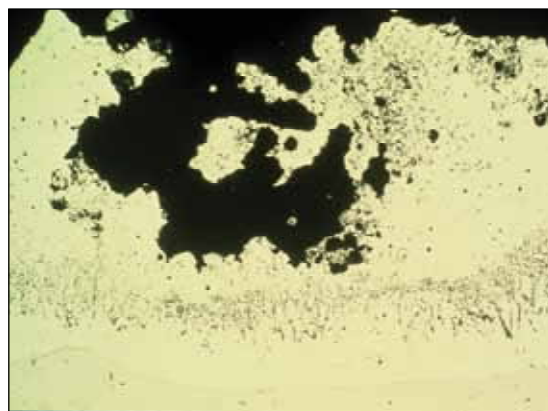
The reason that this material is allowed to reside on the surface of the coating is that there is good galvanized coating underneath the black powdery substance. The micrograph in *Figure 2* shows the black zinc skimmings at the top and the intact coating underneath the black powder. Since there is coating underneath the powder, the corrosion protection is not affected by the black substance.

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Figure 1



Figure 2



Galv, cont. from pg. 6

In spite of the specification, most galvanizing customers will not accept a part with deposits of black powdery zinc skimmings on their newly galvanized parts.

This powdery material can be removed with a nylon bristle brush or with a hand grinder, just remember not to take too much zinc away when removing the skimmings.

In this case, it is best to give the customer what he wants and not a piece with black powder on the coating - even if it is acceptable by the specification.