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The info is pulled out of U.S. General Service Administration

CORROSION: <http://www.gsa.gov/portal/content/111758>

Galvanized iron and steel's resistance to corrosion depends largely on the type and thickness of the protective zinc coating and the type of corrosive environment.

The zinc coating on galvanized iron and steel may be corroded by: Acids, strong alkalis, and is particularly vulnerable to corrosion by sulfur acids produced by hydrogen sulfide and sulfur dioxide pollution in urban atmospheres.

1. Natural Corrosion:

- a. The zinc coating on galvanized iron and steel develops a natural carbonate on its surface by exposure to the atmosphere and by the action of rainwater. This coating, however, is usually not thick enough to protect the metal from further corrosion.
- b. The carbonate can become brittle and crusty and eventually split, exposing fresh zinc for corrosion. Since the zinc coating on the iron or steel is very thin, it can corrode up to the base metal exposing the base to the atmosphere as well.
- c. In industrial atmospheres, the zinc carbonate coating can be broken down by the same acids that attack zinc. These acids convert the carbonate to zinc sulfate, which is water soluble and washes away with rainwater, often staining the adjacent building elements.