



Abcite®

Corrosion Protection



A totally effective anti-corrosion protective coating for battery trays and containers.

Contractor

Tudor S.A. of Zaragoza, Spain.

Problem:

Battery acids are highly corrosive and, especially in sensitive applications such as submarines, mines, forklift trucks, they must be contained.

Containers must be coated for corrosion protection. With the introduction of long-life batteries, they must contain acids for much longer periods, requiring an even higher level of corrosion resistance. This is even more critical in case of fully enclosed casings that are more susceptible to corrosion as acid spills cannot run off.

Presence of pinholes or poor corners and edge coverage risk to speed up the corrosion process.

Pin-holes and badly-covered corners have to be repaired by hand, an expensive and time-consuming process.

Solution:

After testing a number of alternative coatings Tudor selected Abcite® from DuPont, a reversible cross-linked copolymer thermoplastic that, when applied as a powder, bonds to the metal surface to form a tough, uniform, acid-resistant coating that covers all edges and corner with no pinholes or weak spots.

Abcite® is highly impact and abrasion resistant, and retains its physical and chemical properties over a very wide temperature range. Battery casings protected with Abcite® retain their integrity almost indefinitely (tests with fully enclosed casings filled with a sulfuric acid solution have shown no corrosion after a year), and should any surface damage occur, the spot may be repaired quickly and easily in situ.

Project:

Abcite® powder was coated onto the steel battery casings, which have wall thickness of 4-6 mm and range in size from 5,5 to 2,0 m3.

Features & Benefits:

- Abcite® resists acids even at elevated temperatures.
- Abcite® adheres well to metal casings of all sizes. Abcite® displays good dielectric resistance properties.
- Abcite® is highly abrasion and impact resistant, even at low temperatures.
- Abcite® uniformly coats edges, corners, etc.. with no weak spots or pinholes.
- Abcite® is excellent UV resistant, which allows to use batteries casings outside with no risk to lose properties. Cases can be stored outside.

Examples of use:

- Battery cases for submarines, mines etc.
- Trays for vehicles batteries.
- Battery case for forklift trucks.

Application case history

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DuPont Powder Coatings