



## **ARCOR®** High-Performance Novolac Epoxy Coatings & Rebuilding Materials

### Technical Review - Product Testing

ARCOR® believes data regarding chemical, temperature & physical performance provided by most products manufacturers and raw material suppliers should be viewed as simple comparative data, not as a true indicator of actual in-situ performance.

There is a distinct lack of real world testing. Most test criteria just don't come close to mimicking what the product will see in actual service.

ARCOR® & others rely heavily on test data provided by the raw material suppliers of resins & amines. They provide extensive performance data for use of various curing agents used with the different classes of epoxies (see 'ARCOR® Tech Rev – Product Design'). Of course these tests are performed in a lab under controlled conditions and at ambient temperature. They provide some guideline as to how chemicals & temperature can affect a coating but little actual data at temperature & chemical extremes. This allows ARCOR® & others to provide the chemical charts for performance of our various products. We know how a class of material will generally perform in a given reagent. However, without real world experience we have no way of knowing how differences in temperature, substrate, thickness etc. will ultimately affect the coating.

ARCOR® found a different approach to product testing in Russia at the Institute of Corrosion. They were not guided by published tests, rather they designed specific testing to try and match the propose installation environment. Each test would be modified to adapt to chemistry found at the proposed application site including temperature and variances that occur.

When they tested for chemical resistance they would use product applied to a specific substrate; adjust temperature of the outer wall and the reagent temp. They would microscopically examine cross sections at various intervals to monitor permeation. Ultimately you can extrapolate the rate & ultimate failure at given coating thicknesses. This can be done for a general understanding of how product should perform but they would explain that each application is unique and you cannot understand how the product will perform unless you test to the specific environment. For that a test plate in the planned application is required. You also must set plates at numerous locations where variances are anticipated; injection nozzles, inlet/outlet ports, at different points of temperature differences internally & externally.

Clearly there are an infinite number of options for testing. Testing in the lab does not relate to actual service. Therefore ARCOR® has chosen to eliminate the chemical chart from our published literature. Our preference today is to rely on an actual experience and/or to provide multiple sample plates. We have a good base of information as to how our various products have performed over the years in many environments so it is important that we obtain and review the specifics of the environment for a proposed application. We believe this will give better long term product performance