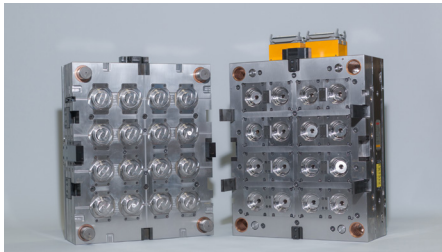


Improving Corrosion Resistance of PVC Molds with Dursan® Coating Technology



A SILCOTEK® CASE STUDY



Example of a stainless steel mold used in plastic extrusion.

SUMMARY:

SilcoTek coatings are used in a variety of applications for altering surface energy and providing corrosion protection. In this case study, the customer experienced problems with their stainless steel molds including release complications and mold corrosion. Read below to learn how the Dursan coating process has helped our customer save time and money in their process.

CHALLENGES:

This customer works in many different markets, meaning they face many different surface challenges. In this case study, we will focus on the problems occurring when using a stainless steel mold with an epoxy resin. The customer was working with an epoxy resin that when heated, created an out-gassing of hydrochloric acids. SilcoTek has heard of this complication arising before in situations like molding polyvinyl chloride (PVC), so we knew how to help. The HCl out-gassing was creating a corrosive effect on the stainless steel which led to mold destruction, poor release properties, as well as having to replace the molding components more often.

HOW SILCOTEK HELPED:

SilcoTek's CVD technology is perfectly compatible with stainless steel parts and the nature of the chemical vapor deposition process ensures a uniform coating, even in tortuous pathways of a complicated mold. The Dursan coating process deposits a thin (400-1600 nm) coating that enables an inert surface while being robust enough to withstand the constant use of an active molding operation. The Dursan coating proved to have excellent adhesion properties and prevented any HCl out-gassing from penetrating into the stainless steel. Thanks to SilcoTek's coatings, the customer enjoys a more economical molding process with longer lasting molds, meaning less downtime and surface damage from corrosive out-gassing.