

Preventing Adhesion in Demolding on Stainless Steel and Glass with Dursan® Technology



A SILCOTEK® CASE STUDY

Due to privacy constraints, the customer who allowed us to share their game-changing story wishes to stay anonymous.

SUMMARY:

This game-changing story focuses on a customer whose main objective in their project was to develop double-sided microstructured polymer films with multifunctional surface properties. The customer wished to achieve this through an injection molding UV replication process.

CHALLENGES:

The customer tried different surface coatings on their steel and glass components, but ultimately Dursan was the coating that solved their problems. The challenge illustrated by the customer was to prevent adhesion of the foils in the steel matrix as well as in the glass matrix.

HOW SILCOTEK HELPED:

As with most injection molding stories, the main solution that SilcoTek's Dursan coating technology provides is lowering surface energy and increasing hydrophobicity which creates a mold that has better product release, improving uptime and process efficiency.

GAME-CHANGING BENEFITS:

The biggest game-changing benefit that the customer reported back was the increased hydrophobic properties that their molding surfaces experienced. According to their findings, this “is an advantage in demolding; possibly to coat both the steel and glass components of the system.” SilcoTek had no problem coating stainless steel or glass along with the many other ceramics and alloys we work with.

We are very pleased to have helped another customer with injection molding, an industry that we see a variety of other benefits including: improved corrosion resistance of components, improved wear resistance, improved lubricity, and more.

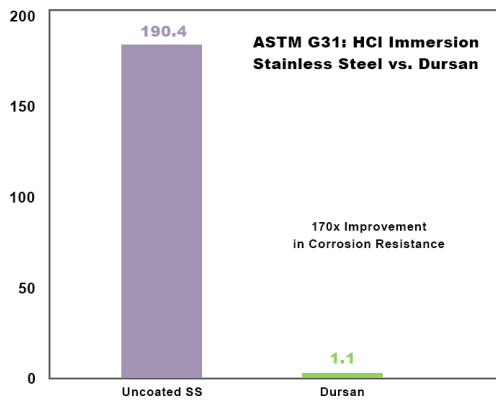


Fig.1. Heating of mold resins, such as those in PVC operations, leads to off-gassing of corrosives like HCl. Dursan offers 170x improvement in corrosion resistance.

Average Coefficient of Friction

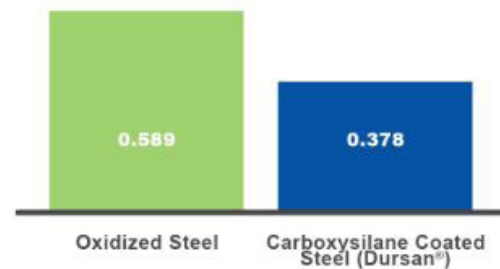


Fig. 2. Comparative testing shows Dursan improves lubricity by 36% over stainless steel while reducing surface energy by up to 8x.



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