



Ti – Coating, Inc

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January 19, 2011

SUBJECT: STANDARD GUARANTEE ON TOLERANCES, HF STRIPPING, REGRINDS (COATING OVER PREVIOUSLY COATED MATERIAL) and CERAMIC MATERIAL

Valued Client,

Continued trends in the cutting tool industry as well as the forming tool industry have required Ti-Coating, Inc. to review long standing policies. Based upon our review, the following changes will be made in our policies, *effective February 1, 2011:*

STANDARD GUARANTEE ON TOLERANCES (CVD):

In order to assure the best possible result for tool steels coated with our CVD (Hot) process, we want to remind you of our existing "STANDARD GUARANTEE ON TOLERANCES FOR CVD", for any details with a cross section greater than one inch. A copy of the standard guarantee is available upon request. We also *encourage* use of our pre-coat sizing service. By sending us your tool print in advance via email (customerservice@ticoating.com) or fax (586.726.1735), we will review the tool sizes as well as the coating desired and respond with a pre-coat sizing recommendation that will result in as little material movement as possible following coating and heat treat processes at Ti-Coating, Inc. The inclusion of prints with orders also assists in the clarification of masking requirements for our PVD process. We will also continue to advise that the tools be hardened via a *vacuum heat treat process* prior to arrival at Ti-Coating, Inc.

HF STRIPPING FOR CARBIDE:

The fact that HF (Hydrogen Fluoride) attacks cobalt and the lack of coating uniformity in thickness over tools or carbide inserts causes a problem when the HF gets down to the substrate it starts to attack the cobalt binder. There are many factors that affect the HF stripping of inserts: The thickness of the coating, the type of coating, i.e. Aluminum Oxide vs. Titanium Nitride and the effect of temperature of the original deposition causing the material to strip differently.

We will not be able to guarantee the results for a process of stripping carbide using HF. We can only guarantee that we will run the correct cycle as offered. Also, we will not be able to accept liability for total removal or for excessive removal in the event that the process affects the substrate of the carbide tool or insert.

REGRIND/ COATING OVER PREVIOUSLY COATED MATERIAL:

Based upon our experience, there are higher risks associated with coating over existing coatings on cutting tools, forming tools and components. Accordingly, regrinds, re-sharpened tools and requests for coating over a previous coating will *not be guaranteed*. We will however, continue to guarantee the area or portion of the tools that were re-sharpened or ground down to a substrate or uncoated surface.

Ti-Coating, Inc. will not accept liability for coating adherence, integrity or appearance of any of its coating processes due to the unknown factors associated with the previous coating and the effects that such coating may have during the coating process. Therefore, all products coated at Ti-Coating, Inc. that had an existing previous coating on them, will be billable and returned to the customer following one coating run, unless the customer agrees to pay for stripping and re-coating of the product.

In addition, please understand the potential for ceramic materials to become damaged during the PVD (Physical Vapor Deposition) coating process. The nature of ceramic material being non-conductive greatly increases the potential for the substrate material to be exposed to electrical discharge resulting in uncontrollable arcing in the PVD process. Ti-Coating, Inc. will process ceramic inserts with PVD process technology when instructed to do so by our clients. Ti-Coating, Inc., however, will not accept any liability for damage caused to the material due to arcing generated by the PVD process.

COATING CERAMIC MATERIAL:

When consideration is being given to coating ceramic material, we strongly urge our clients to consider coating the material using CVD (Chemical Vapor Deposition) process technology. The nature of Ti-Coating, Inc. CVD processing does not expose the ceramic substrate to electrical sources for coating deposition. There is no potential for damage caused by electrical arcing with CVD processing.

Thank you for your consideration.

Respectfully,

Mike Brady
Sales Manager
Ti-Coating, Inc.