

Tech Talk #15:

# Optimizing Dies for Different Materials

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It's impossible to create precise tooling without specific knowledge of the material the die will be cutting during application. Knowledge of the material the converter is working with allows us to determine the proper blade angle, coatings, and depth of cut for each tool. For flexible tools, it's also important to make sure your magnetic cylinder is equipped to handle the overall thickness of the tool once it's been manufactured.

## Material Specs, Adhesives, and Die Strikes

Advancements in the converting industry mean that converters are using new material combinations every day. To create effective tooling, your manufacturer needs to know exactly what materials are being combined, including the type of adhesive holding them together. They also need to know the type of die strike you are looking for (i.e. metal to metal, hand, automatic, machine or hit hard). This is especially important to estimate die life because for pressure sensitive labels, the harder the die strike is to the liner, the longer the tool will last.

## Bringing Your Tool to Life

Knowing the exact material specifications and desired die strike method allows your tooling manufacturer to determine the proper blade angle, coating, and clearance needed for your exact material. In addition, there are several steel options to choose from, so it is also important to know

how long the run is or if this is an inventory die. This information will determine the ideal steel type for your particular application.

For effective testing, your die maker should use the exact material that you'll be using for production, so providing a sample is considered a best practice. Working with your specific material delivers accurate results when testing the cleanliness and depth of the cuts, and enables your die maker to make any final adjustments necessary to give you the best die for your project.

### **Why the Exact Material Matters**

A quick look at the manufacturer's description of the material reveals the importance of providing your die maker with an exact sample. All material manufacturers describe the thickness of the liner with a tolerance of +/-10%. A 90lb liner has a standard thickness of .007". However, due to the variance in tolerance, any particular roll will measure between .0063" to .0077". If your tooling is machined for the standard .007" thickness, then it will not cut the material if the liner is .0063", and will cut too deep if the liner is .0077". So, having the exact material that you are cutting will allow us to fine tune the die to your exact material.