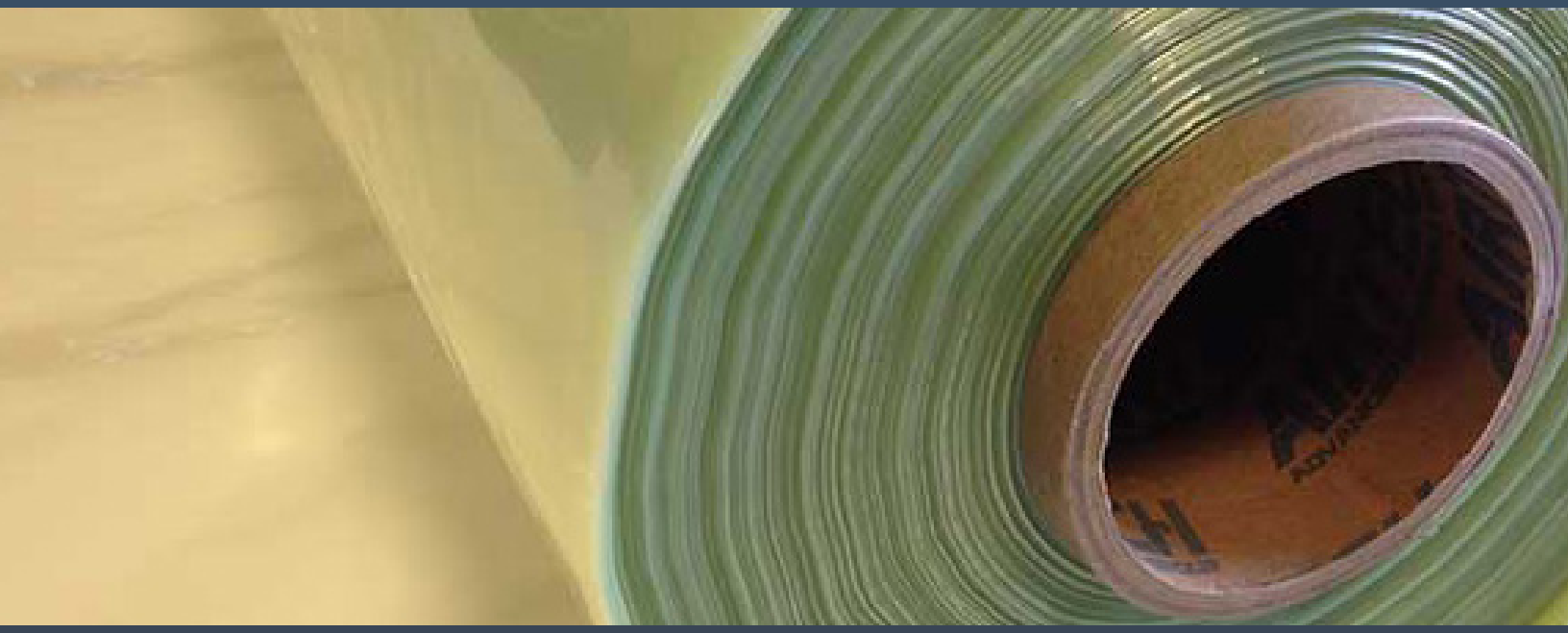
COMPOSITE ENVISIONS KNOWLEDGE HUB
PRACTICAL AND INSIGHTFUL COMPOSITES INFORMATION



HUMIDITY AND VACUUM FILM TIPS

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INTRODUCTION

Ever take a sample of vacuum film straight off the roll and notice how unpliable or rigid it is? How in some conditions, the film seems to not want to be workable into tight areas or become a hassle when attempting to secure it to bagging (tacky) tape? Here were going to discuss why this happens and how to help increase vacuum film performance and pliability for future projects.

VACUUM FILM VS HUMIDITY

Most vacuum films in composites are made from a water wicking material known as nylon. Inherently, in higher humidity conditions, these nylon films soak up moisture in the air. When a vacuum film is taken from the roll and subjected to more humid conditions, they become softer and easier to use. This is because the water in the air makes the nylon more “plastic” or flexible in nature. The more humidity the nylon film is subjected to, the more pliable it will become. In more humid climates, the bagging films may take in too much water, making them more of a hassle to work with than a firmer material. Conversely, if fabrication and bagging occur in less humid or in a humidity-controlled environment below 50% relative humidity, the bagging film may be left as firm and seemingly unworkable. As many DIY layups occur, this issue may lead to inconsistent bagging performance from layup to layup. This is still highly dependent on the climate presented to the bagging film.

IMPROVING VACUUM FILM PERFORMANCE

Many clean rooms or designated layup areas in composites are humidity controlled, it’s just a part of keeping the utmost quality in various materials used in composites. Humidity control is generally more desired than having pliable vacuum bagging. However, there are a few solutions that may aid in making a vacuum film more pliable.

On a tightly compacted roll of vacuum film, the outer layers of film are going to soak up moisture and the inner layers of the roll will more likely stay firm. For this, unroll the needed amount of vacuum film well ahead of time for bagging, set it to the side in a CLEAN area, allow the film to soak up the available moisture in the air. In cases where humidity is at least 50%, the air has enough moisture to aid in making the vacuum film pliable and flexible enough to handle and work.

Place a wet rag into the cardboard core of the vacuum film. Wrap the bagging film to seal it from the lower humidity conditions. This will in turn allow the vacuum bagging material to soak up the moisture presented and make a more pliable bag.

Place a wet rag near unrolled bagging film that is intended to be used, cover the bagging film with another plastic and allow it to soak the moisture in.

HUMIDITY AND VACUUM FILM TIPS

Use a humidifier, they can be cheap yet effective enough to cut a usable amount of vacuum film and place it into a humidified area. While we cannot not suggest adding humidity to layup environments, the bagging film being exposed to these higher humid conditions for a period can be enough to get a bagging film pliable enough to work in those lower humidity conditions while placing a vacuum bag over a part.

Note: Don't store bagging film vertically.

With some creativity, finding a good balance of vacuum film workability in each layup is in the cards. Bag pliability is up to the fabricator as some prefer a harder, less workable film for some bagging techniques. (Think envelope bagging) It is highly dependent on the job at hand. It is best practice to take notes on relative humidity conditions and how pliable the film is. Find a point that is comfortable to work, provides a good part and work to replicate it.

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