

PEEL PLIES & RELEASE FILMS

The basic purpose of release materials is to ensure easy removal of the helper materials used during the vacuum bagging process. Release materials are placed in direct contact with the composite laminate and separate the laminate from the breather fabric and bag tube or film, which have no release characteristics. The inherent properties of release materials allow for easy separation from a cured laminate.

Peel Plies

Peel plies are tightly woven materials which have been coated with a release agent. The weave allows resin to bleed through the material producing a textured finished surface while the release coating enables the peel ply to be easily removed from the cured laminate. Peel plies impart an even, uniform surface to the laminate, resulting in fewer wrinkles or pitting than in laminates produced with other release materials. Peel plies are recommended for use when a bondable surface is required on the finished laminate.

[White Peel Ply](#)

ACP's White Peel Ply is a polyester fabric treated so it will not bond to epoxy resin systems. The peel ply should be cut to extend over the edges of the part. This provides material to grab onto when releasing it from the cured laminate. It is applied on the wet laminate and covered with a breather cloth. The breather cloth serves to absorb excess resin which is removed from the laminate when vacuum is applied. The laminate should be protected from direct contact with the breather cloth as it will bond to the finished laminate.

The peel ply should be applied as smoothly as possible to avoid wrinkles and trapped air pockets. Resin may build up in any wrinkles or air pockets during the vacuum bagging process, requiring sanding of the finished laminate. If wrinkles occur, the peel ply can be repositioned prior to curing. White Peel Ply produces a more textured laminate surface than that of the Blue Peel Ply.

The peel ply can be removed from the cured laminate leaving a roughened, bondable surface or it can be left on to protect the laminate from dirt, dust and contaminants until the laminate is ready for use. For larger laminates, slits should be cut in the excess peel ply on one end to peel off in sections or strips.

[Blue Peel Ply](#)

ACP's Blue Peel Ply is a nylon fabric that offers greater release properties than the White Peel Ply. It is designed for use in vacuum bag lay-ups and metal-to-metal bonding where a higher cure temperature is required (up to 480 degree F). It is not recommended for use with phenolic resin systems.

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The peel ply should be applied as smoothly as possible to avoid wrinkles and trapped air pockets. Resin may build up in any wrinkles and air pockets during the vacuum bagging process, requiring sanding of the finished laminate. Blue Peel Ply produces a slightly smoother laminate surface than the White Peel Ply.

The peel ply can be removed from the cured laminate leaving a roughened, bondable surface or it can be left on to protect the laminate from dirt, dust and contaminants until the laminate is ready for use. For larger laminates, slits can be cut in the excess peel ply on one end to peel off in sections or strips.

Porous Teflon Coated Glass

[Porous Teflon Coated Glass](#)

ACP's Porous Teflon Coated Glass is a fiberglass cloth that has been coated with Teflon to form a porous non-bondable fabric that can be used to control the resin content of a laminate during the bagging process. The material is applied on the wet laminate and covered with a breather cloth which will absorb excess resin from the laminate when vacuum is applied. The laminate should be protected from direct contact with the breather cloth as it will bond to the finished laminate.

The Porous Teflon Coated Glass is more porous than the White or Blue Peel Ply, allowing more resin to be absorbed by the breather and producing a lighter weight finished laminate. The Porous Teflon Coated Glass releases easily from the cured laminate and leaves a shiny textured surface on the laminate. Sanding of the surface is required if the laminate is being used for bonding applications.

Release Films

Release films are non-woven, thin plastic films available with either porous or non-porous surfaces. Porous release films are also known as Perforated Films. Release films are recommended for use when a bondable surface on the finished laminate is not required. Release films can also be used in lay-ups, between peel ply and breather cloth, to reduce absorption allowing for the re-use of the breather cloth.

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[Perforated Release Film](#)

ACP's Perforated Release Film has small pin holes, evenly spaced throughout the film which permits excess air or resin to be removed from the laminate during the vacuum bagging process.

The release film should be cut to extend over the edges of the part. This provides material to grab onto when releasing it from the cured laminate. It should be applied on the wet laminate and covered with a breather cloth. The breather serves to absorb the excess resin pulled through the pin holes as vacuum is applied to the laminate. The laminate should be protected from direct contact with the breather cloth as it will bond to the finished laminate. The film releases easily from the cured laminate and leaves a smoother laminate surface than that produced using a peel ply.

[Non-Porous Release Film](#)

ACP's Non-Porous Release Film is a thin film that easily conforms to complex shapes. Using the non-porous release films can minimize the finishing work required for a laminate. Less resin is removed from the laminate during vacuum bagging. It remains on the surface of the laminates, producing a smooth, solid surface.

The Non-Porous Release Film should be cut to extend over the part to provide material to grab onto when releasing it from the cured laminate. It is applied directly on top of the wet laminate and covered with a breather cloth. The breather material facilitates air flow and blots any excess resin that may squeeze out from the edges of the laminate. Always protect the wet laminate from direct contact with the breather because it will bond to the finished laminate. Laminates made using Non-Porous Release have a smoother, more resin rich surface than laminates produced using porous films or peel plies.

[Mylar® \(PET Polyester Film\)](#)

Mylar® is a non-porous carrier sheet that imparts a smooth, glossy surface to the laminate. As a thicker film, Mylar does not conform to complex shapes and it is thus ideal for flat or slightly curved laminates.

When waxed with mold release wax prior to use, Mylar® can be used as a release film or a medium to transfer paint directly to a finished part during vacuum bagging as less resin is removed from the laminate during vacuum bagging. It remains on the surface of the laminates, producing a smooth, solid surface.

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The Mylar® should be cut to extend over the edges of the part. This provides material to grab onto when releasing it from the cured laminate. It should be applied directly on top of the wet laminate and covered with a breather cloth. The breather material facilitates air flow and blots any excess resin that may squeeze out from the edges of the laminate. The laminate should be protected from direct contact with the breather cloth as it will bond to the finished laminate.