

PET Manipulation

Cleaning

- Clean the sheet with a solution of lukewarm water and a little neutral soap and rinse with fresh water, using a very soft sponge or chamois.

Cutting

Saw cutting:

- The types of saw commonly used in wood- or metal work produce good results: circular saw, band saw, roughing saw and handsaw. Circular and band saws produce better edges and can be used for almost all cutting operations.
- The blade design plays an important part in sawing plastics. It is preferable to use a saw blade with wide set teeth. The best results are obtained with straight, angle set teeth. To prevent the plastic from melting or cracking the blade must be very sharp and the fence should be placed very near the cut to reduce any vibration.
- The PET sheet (up to 2mm) can be satisfactorily cut using a die with steel blades. The blade should be changed or sharpened frequently.
- The press for die cutting should be adjusted so that the stroke completely slices through the plastic sheet and stops before the blade becomes damaged.

Polishing

Sheet edges must first be smoothed to remove the marks left by the circular saw.

The following may be used:

- Rigid fabric rotary discs with polishing paste followed by soft fabric discs with polishing paste for the final finish.

PETg sheet can be flame-polished using a standard propane torch or a hot-nitrogen welder.

Both techniques require accurate control of the distance between the sheet and the heat source; otherwise, surface whitening or excessive material flow may occur.

Adhesives

- Because of the outstanding chemical resistance of PET it is not possible to use a solvent adhesive.
- Details of a wide range of suitable adhesives are available on special request.

Thermoforming

- Remove the printed film before thermoforming to prevent print from the film marking the sheet.
- More technical details are available on request.

Bending

Cold Line-Bending:

- PET sheet (less than 3mm) can be cold formed and bent using normal sheet metal forming equipment such as a brake press or sheet metal folder. The surface protection film should remain on the sheet during the forming to protect the sheet from scratches. Do not use excessive speed when bending since high strain rates can cause surface cracking.
- Incandescent Wire Bending:
- Standard (double-sided) incandescent wire bending equipment can be used successfully. Excessive wire temperature or insufficient wire to sheet distance can cause a slight

crystallisation (with haze) of the sheet surface. Should this occur, reduce the power settings to the wire(s) or increase the wire to sheet distance. In extreme cases the wire can be changed for a heavier gauge in order to reduce the wire resistance and temperature.

Decoration

- Some printing inks may have difficulty in achieving a good bond to PET because of its high solvent resistance.
- Remove the printed film before printing to avoid that the film illustration picture could be fixed on the sheet.

Transport

Dirt and abrasive objects can damage the surface if rubbed.

- During transport, always use flat, stable pallets, securing the sheets to prevent them sliding. Ensure the sheets do not slide over one another when loading or unloading.
- Lift by hand or using suction pads.

Storage

An incorrect position during storage may cause permanent deformation.

- PET should be stored either flat on pallets, or vertically in racking system.
- The sheet should be fully supported over its complete area.
- Do not store PET in direct sunlight or in conditions of high humidity or temperature as these may adversely affect the adhesion of the surface protection film.