

MAGMA ACRYLICS (Pty) Ltd

Exclusively developed acrylic adhesive products

ACRYLIC WORKSHOP TECHNIQUES

Introduction to Plexiglas/Acrylic Bonding Processes

Acrylic joints are used in various applications such as construction, automotive, and aerospace industries, etc. These joints are made from a material called Plexiglas Acrylic, which is a thermoplastic polymer that is known for its transparency, durability, and versatility. The various types of acrylic joints are:

Butt Joint: This is the simplest type of acrylic joint and is used when two pieces of acrylic are joined end to end. The edges of the acrylic pieces are squared off and then glued together using an acrylic cement or adhesive. This joint is commonly used in the construction of display cases, signs, and aquariums.

The acrylic cements or adhesives called Magma Bond have been specially formulated to dissolve the surface of the acrylic and create a strong bond between the two pieces. There are a number of different Magma Bond adhesives that are typically applied using a dispensing system, which allows for precise application and control of the amount of glue used.

Before applying the glue, the edges of the acrylic pieces must be thoroughly cleaned to remove any dirt or debris that could interfere with the bonding process. This is typically done using a cleaning solution and a lint-free cloth.

In a factory setting, acrylic butt joints can be performed using automated processes such as laser cutting or CNC machining. This ensures precise and consistent cuts and enables high-volume production.

Overall, an acrylic butt joint is a simple but effective way to join two pieces of acrylic together in a flush, straight line. It is commonly used in a variety of applications such as construction, signage, and display cases.

Bevelled Butt Joint: This is a type of joint used to join two pieces of acrylic end-to-end at an angle, typically between 30 & 45 degrees. In this type of joint the edges of the two acrylic pieces are cut at an angle to create a bevelled surface. The angle of the bevel may vary depending on the desired look and strength of the joint. Overall, an acrylic bevelled butt joint is a strong and aesthetically pleasing way to join two pieces of acrylic together at an angle. It is commonly used in applications such as furniture, displays, & architectural elements.

T-Joint: This type of acrylic joint is used when two pieces of acrylic are joined at a right angle. The end of one piece is shaped like a “T”, and the other piece fits into the opening of the “T”. The pieces are glued together using an acrylic cement or adhesive. This joint is commonly used in the construction of display cases, picture frames, and furniture.

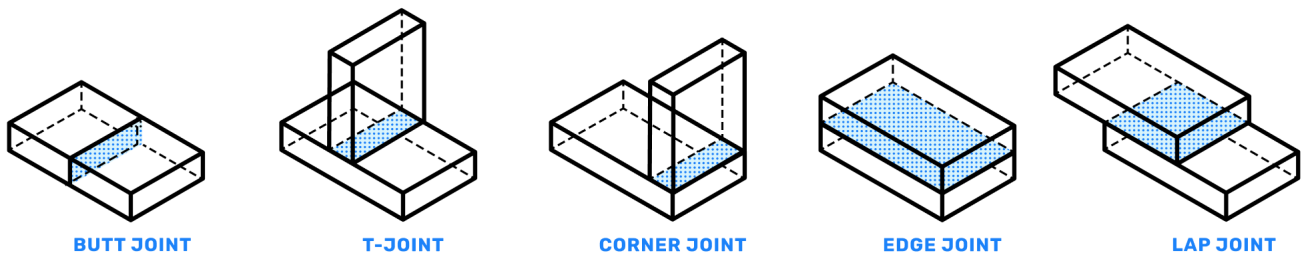
L-Joint: This type of acrylic joint is used when two pieces of acrylic are joined at a 90-degree angle, but one piece is longer than the other. The shorter piece is placed against the longer piece, and the two pieces are glued together using an acrylic cement or adhesive. This joint is commonly used in the construction of display cases, picture frames, and furniture.

Mitre Joint: This type of acrylic joint is used when two pieces of acrylic are joined at a 45-degree angle. The edges of the acrylic pieces are cut at a 45-degree angle, and the pieces are glued together using an acrylic cement or adhesive. This joint is commonly used in the construction of display cases, picture frames, and furniture.

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Scarf Joint: This type of acrylic joint is used when two pieces of acrylic are joined at an angle other than 90 degrees or 45 degrees. The edges of the acrylic pieces are cut at an angle to match the angle at which they will be joined. The pieces are then glued together using an acrylic cement or adhesive. This joint is commonly used in the construction of airplane windows, windshields, and other curved surfaces.

In conclusion, acrylic joints can be used in a variety of applications and are versatile enough to be used in both simple and complex joint configurations. Choosing the right type of acrylic joint depends on the specific application and the angle at which the pieces will be joined.



As an example to create a tee joint on acrylic, you will need the following tools and materials:

- Acrylic sheets
- Acrylic adhesive
- Acrylic cement applicator
- Clamps
- Sandpaper or a sanding block
- Protective gloves
- Safety glasses

Here are the steps to create a “T” Joint on acrylic:

1. Prepare the acrylic sheets: Cut the acrylic sheets to the desired size using a saw or laser cutter. Sand the edges of the acrylic sheets using sandpaper or a sanding block to ensure that they are smooth and flat.
2. Apply the acrylic adhesive: Apply a small amount of acrylic adhesive to the edge of one of the acrylic sheets using an acrylic cement applicator.
3. Join the acrylic sheets: Place the second acrylic sheet onto the adhesive and press down firmly. Hold the two sheets together for a few seconds to allow the adhesive to bond them together.
4. Clamp the acrylic sheets: Place clamps along the joint to hold the two acrylic sheets in place while the adhesive dries.
5. Allow the adhesive to dry: Let the adhesive dry for several hours, or as recommended by the manufacturer.
6. Remove the clamps: Once the adhesive has dried, remove the clamps from the joint.
7. Sand the joint: Use sandpaper or a sanding block to smooth out any rough edges or excess adhesive on the joint.
8. Clean the joint: Use a soft cloth or tissue to clean any excess adhesive from the joint.
9. Repeat for the third acrylic sheet: Repeat the above steps for the third acrylic sheet, making sure that the tee joint is properly aligned and clamped.
10. Allow the joint to dry: Allow the adhesive to dry completely before using the acrylic sheets for any applications.

Remember to always wear safety goggles and gloves when working with acrylic and adhesives. Also, make sure to work in a well-ventilated area and follow all safety precautions when using the cutting tools, reinforcement material, and adhesives to avoid any injuries or damage to the material.

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PROCESS CONDITIONS

Use engineering controls to reduce air contamination to permissible exposure level.

ENGINEERING MEASURES

Provide adequate ventilation.

RESPIRATORY EQUIPMENT

Wear suitable respiratory protection.

HAND PROTECTION

Protective gloves should be used if there is a risk of direct contact or splash.

EYE PROTECTION

Wear splash-proof eye goggles to prevent any possibility of eye contact.

OTHER PROTECTION

Wear suitable protective clothing as protection against splashing or contamination.

HYGIENE MEASURES

Use appropriate skin cream to prevent drying of skin. Wash at the end of each work shift and before eating, smoking and using the toilet. When using chemicals do not eat, drink or smoke.