



## TECHNICAL BULLETIN

### Work Surface

- Always work on a non-stick Teflon or Silicone baking sheet. Do not use a metal cooking sheet unless it has a teflon coating.
- If you're working with a heat gun, make sure the table, countertop, or workbench under your non-stick surface will not be damaged by the heat.
- In most cases, Thibra will not stick to Teflon, aluminum foil or glass. For best results, coat objects or surfaces with a non-stick oil cooking spray.
- Thibra will stick to other plastics, bare metal, paper, waxed paper, uncoated ceramics, and cardboard

### Cutting Thibra

- Thibra is rigid yet pliable and can be cut with most standard cutting tools provided they have a deep enough blade. Some examples are: scissors, craft-cutting knives, box knives, or paper-cutters (Guillotine or rotary blade style).
- Hand-held fabric rotary cutters are not recommended.
- If you are using an industrial cutter, Thibra may dull the blade.
- While cool, it is possible to bend Thibra without breaking it, but be aware that doing so will stress or weaken the material. See "Smoothing Tips" for solutions, if this is a problem.

### Heat Gun

- Heat guns operate at various temperatures and blowing force. Experimentation may be necessary to determine how long it will take to soften a piece of Thibra with your heat gun.
- Hair-dryers are not hot enough, use a real heat tool.
- Heat guns pull quite a bit of energy; make sure you're on a circuit that will not be harmed by this and know how to reset your breaker. Avoid running multiple heat guns at once on one circuit.
- Thibra will stick to hot metal. Keep a few inches of space between the tip of your heat tool and the Thibra piece you're working with. Do not touch Thibra directly to a metal heat source such as an iron.
- Very high-powered heat guns can overheat the Thibra, making the material difficult to handle.
- The strength of the airflow varies between different heat gun models. Use a tool with the airflow that's right for your project. For example, if you are working on a small piece of Thibra, a heat gun with less blowing force will prevent your work from shifting while you're heating it. On the other hand, if you're working on several large pieces at a time, a strong airflow will better distribute the heat. Some heat tools also have diffusing nozzles to focus or distribute heat.

**Shaping & Texturing Tools**

- You can easily shape your heated Thibra with standard hand-sculpting tools. It is best not to use motorized finishing/polishing tools as the plastic may clog them up.
- For best sculpting results, Thibra should be warm but not hot. If Thibra is too hot, it will stick to tools—especially, metal and plastic tools. It helps to cool your tools by dipping them in cold water.
- As with your work surface, non-stick oils can be applied to tools to prevent them from sticking.
- Wooden sculpting tools work well with Thibra. This is especially true if the tools have been used with modeling clay and are already permeated with oils.
- When pressing porous or textured objects against Thibra, a release agent may be necessary to minimize sticking.

**Heating Basics**

- Never leave Thibra unattended while heating.
- Thibra is ready to shape when it's warm to the touch (about 120° F) without burning your fingers.
- Never heat directly with an open flame. Thibra will catch fire if exposed to flame.
- Overheating (about 140° F) may cause bubbles to develop in your Thibra. If this occurs, simply let the material cool slightly and then smooth out the bubbles.
- If your Thibra is too soft to retain details and fine shapes, it has been overheated. When overheated, Thibra will be more likely to stick to your fingers and tools.
- When reheating a thick lump of Thibra, work the material flat so as to distribute the heat evenly. See also "Heating with Hot Water."
- When bonding two pieces of Thibra together, for best results, heat both pieces before attaching.

**Heating with Hot Water**

- Thibra can be heated in a standard oven or toaster oven. Do not heat Thibra in a microwave oven.
- Place the Thibra on a sheet of aluminum foil while in the oven. If the Thibra does not separate from the foil after you've taken it out of the oven, allow it time to cool. You can speed up the processes by cooling the back of the aluminum foil.
- Before putting it in the oven, bend a corner of the Thibra, creating a white flex point. When the bent portion flattens out or the flex point loses its whiteness, your Thibra sheet is warm enough to be shaped.
- Do not leave Thibra unattended while heating in an oven.

**Working with Bare Hands**

- To effectively work with Thibra and have it retain its shape, it should be warm to the touch, without burning your fingers.
- If your fingers are sensitive to heat, try dipping them in cool water as you work. This creates a buffer between your skin and the warm plastic and does not harm the material.

- You can use thermal gloves when working with Thibra, but depending on the material of the gloves, you may need to dip them in water or use a non-stick spray to prevent the fibers from sticking.
- Hot Thibra will stick to latex or nitrile gloves.

### **Reusing Scraps of Thibra**

- Thibra pieces can be reheated again and again without losing quality—so save your scrap!
- If you decide not to use a large piece of Thibra after you've heated it, flatten it out as much as possible before it cools. This makes it easier to reheat next time.
- When reusing pieces that have already been painted, remove as much paint as possible before heating. Bits of paint may weaken Thibra when mixed into the plastic and cause it to lose its quality for fine detail sculpting. Also, heated paint may release chemical fumes.

### **Shaping Thibra • Sculpting, Small (smaller than 4")**

- Small pieces of Thibra can easily be sculpted without reinforcement. They can even be hollow without collapsing, provided you do not overheat the Thibra.
- If you are worried about collapse issues after building up a few layers of Thibra, consider filling the form with something lightweight, like a wad of paper or aluminum foil.
- You can quickly cool small pieces of Thibra by placing them in water.
- Thibra is a lightweight material; very small pieces may blow away under the force of a heat gun.
- When reheating small objects, particularly hollow pieces, know that the heat may travel farther than you expect (i.e. heating the front may cause the back to also get soft).
- Be careful not to hold small objects with your bare hands while heating them with a heat gun.
- You can attach small objects like clips or metal rings to Thibra by simply covering the edge of the object with Thibra. For better durability, build the object deep into the Thibra shape.

### **Shaping Thibra • Sculpting, Large (greater than 4")**

- Thibra was developed specifically for fine detail work.
- Warm Thibra is very soft; if you want to build it up into a large shape, it may need some reinforcement. Armature wire, aluminum foil, EVA Foam, and many other common objects can be used as reinforcement inside a Thibra sculpture. Removable masking tape can be used to hold support materials in place.
- Any pieces standing out from the main body of a shape (dragon wings, horns, long-spindly shapes, etc.) should be reinforced internally. Make sure the reinforcement is buried deep enough into the main body of your Thibra object to strengthen the joint connecting the two pieces.
- If you intend to attach non-Thibra objects (e.g. metal rings,) plan ahead for this when you build the internal support structure.

- Connections will be stronger if objects are fixed to the internal structure rather than attached by a small piece of Thibra as an afterthought.
- If you plan on removing the reinforcement afterwards, build it out of a non-stick material.
- When reheating an area of your Thibra sculpture, make sure it is well supported to prevent it from slumping or stretching in ways you did not intend.
- If you need to reheat a large shape, we do not recommend using the oven.

### Slumping

- Thibra does not shrink or expand as it heats or cools, but it will stretch to match a shape if you are heating it over a bowl or onto a slump-mold.
- If your mold is made from a material Thibra sticks to (see above for examples) simply apply a non-stick coating to the mold.
- When slumping or shaping Thibra into a large mold, be careful to support the Thibra so it does not stretch unevenly or get too thin. Thin Thibra may be difficult to remove from your mold without breaking.
- If you plan on using a slumped Thibra shape to hold up something relatively heavy, reinforce the slumped shape from the back with additional strips of Thibra.
- When slumping over a glass or ceramic bowl, be careful that the glass heats up evenly to prevent expansion cracking. Try not to heat the Thibra beyond what is necessary to shape it.
- Let your Thibra cool before removing it from the mold to prevent unintended deformation.

### Use with Silicone Molds

- Thibra should not stick to silicone molds designed for candy, baking, jewelry making, or mixed media. Other mold materials should be tested for compatibility.
- Work with small pieces to avoid air bubbles, firmly pressing the warm material down into detail areas. Work while all the Thibra is still warm, as warm pieces will stick together better.
- To avoid deforming your work, wait for the Thibra to cool slightly before removing.
- Some molds are thin, while others have a sturdy, dense base. Thin molds may deform as you fill them with Thibra, but are easier to cool.

### Attaching Thibra to Itself

- Thibra will easily stick to itself. Simply heat the areas you want to connect and press them together; the pieces should easily cling and bond. However, this will not work if the Thibra has already been painted.
- You can test the connection by gently pulling the connected sides apart while they are still warm. The Thibra should stretch and pull, but not separate.
- Smooth out the rough joints while the Thibra is still warm.

### Attaching Thibra to Other Objects

- Thibra will adhere to most other Thermoplastics materials.
- Decorative objects may stay in place if you press them into the warm surface of your Thibra, but it is best if you also glue such objects for good measure.
- For rhinestones, embellishments, accents or other glued accessories, make sure the Thibra is clean and oil-free before gluing. Lightly sand the Thibra to enhance the surface texture for maximum adherence.
- Paint your Thibra object before gluing embellishments, decorations, etc. This is especially important if the decoration is transparent, as the neutral Thibra color will be visible through it.
- If attaching Thibra to fabric, make sure it has something to grip (a knot, a hole, a loop or grommet). Also, if it will be tugged on or stretched, consider attaching the fabric firmly to inner reinforcements.

## DETAILING AND COOLING THIBRA

### Smoothing

- Smooth out any cracks and seams on the surface of your Thibra sculpture before applying paint to it.
- Use a heat gun when smoothing. Only heat small areas of your Thibra sculpture to lessen the chances of unintended deformation.
- Dampen your finger with a drop of water to smooth an area without leaving fingerprints.
- Pay extra attention to areas where two pieces of Thibra are joined. If the pieces do not smooth easily when first connected, one or both of the sides may not have been heated enough and could break easily later.
- Thibra that has been bent without heating gets stressed. You can tell an area has been stressed if it looks slightly whitish/lighter in color than other areas and feels flexible. Lightly heat to restore the integrity of stressed areas.

### Embossing/Applying Texture

- For best results, apply any desired texture to the surface of your Thibra before painting.
- You can create textures by pressing various types of materials into the surface of warm Thibra (i.e. wire mesh, patterned glass, textured metal.) Test the material on a scrap of Thibra first to see if the material sticks. If so, apply non-stick spray before using it to texture your piece of work.
- Work quickly. If the textured object heats up to match the temperature of the warm Thibra then the two objects are more likely to stick to each other.
- Fibrous materials (cloth, tree-bark, etc) can be used to apply texture to slightly-warm Thibra, even without using non-stick spray—if you work quickly.
- Plan ahead. Decide whether it's best to add texture before or after shaping your object. For thin objects, you may want to texture before shaping, while thick objects can be reheated and texture after.

- When adding texture to thick pieces of Thibra, it's possible to only heat the outer layer without damaging the internal structural integrity. See "Heating Basics" for more details.

**Cooling Thibra**

- Cooling time will vary depending on the thickness of the warm Thibra.
- Thibra will cool more quickly when placed in water that is room temperature or cooler. Cooling can also be sped up by using a fan to diffuse the heat, spraying the piece with water, or placing it in a fridge or freezer. You can even drape a cool, wet cloth over the Thibra, as long as you do not apply enough pressure to deform your work.
- Hot Thibra has very low rigidity. Tall or complex shapes will need to be supported while cooling.

**FINISHING TIPS****Cleaning**

- If you used a release agent such as non-stick spray, clean the Thibra gently with soap and warm water before painting (not hot water).
- Avoid using harsh solvents or abrasive scrubbing tools on Thibra.
- Water will not harm Thibra, but may remove certain types of paint.

**Sanding & Drilling**

- Thibra is a fairly smooth surface; if needed, you can sand Thibra before applying primers or paint.
- There's no need to sand Thibra to remove small, excess product. Simply heat the Thibra again and remove or cut out what isn't needed.
- You can drill into Thibra once it has cooled. For small holes, you can heat Thibra and use an awl to punch a hole.
- As mentioned before, Dremel or other finishing tools do not work well with Thibra.

**Painting**

- Thibra works with acrylic paints that are specially formulated to adhere to plastics and other non-porous surfaces.
- Before painting, carefully mask off areas you want protected.
- Can Thibra be heated after it has been painted? Yes, but we do not recommend it. Heated paints may release toxins or melt in unexpected ways.
- Test the thickness of your paint if you are applying it over seams and textured areas. Thick paints can hide seams or flaws while thin paints are best used on surfaces with textures you want to show.
- You may be tempted to use your heat gun to help dry paint. This is not recommended. It is better to use a hairdryer on low heat.

**Sealing**

- Thibra works beautifully with multiple paints, but for best results, seal the paints with Wax, Polyurethane, or enamels.
- Water-based polyurethane finishes (or polycrylics) are recommended. They provide a permanent, durable finish to most paint types and can be painted over if changes are necessary.
- Waxing is not a permanent finish and must be reapplied frequently to maintain the look and protection.

