

The recommendations below have all been tested and proven. If your substrate is not marked, it has not been tested and may work fine. We will be happy to test any combination and provide a free lab report. Please contact us for further information.

								REV 01.03.20
Thermo Set Adhesive	3D Thick*	Crystal Clear	2	4	24	152	204TSA	330TS
Thickness	.030" - .100"	Any	.006"	.005"	.006"	.005"	.005"	.008"
Minimum Glue Line Temp Under Full Temp & Pressure	220°F	Liquid	270°F+	250-290°F+	250°F+	290°F	225°F	275 - 300°F
Minimum Time In Minutes	10 Seconds	15 Minutes	3 Minutes	5 - 6 Minutes	5 - 6 Minutes	1 Minute	6 Minutes	2 Minutes
Minimum Pressure - PSI	10 PSI	0	85 PSI	70 PSI ±	70 PSI ±	215 PSI	150 PSI	90 PSI ±
Color	White/Pink/Grey	Crystal Clear	Translucent	Light Tan	Brown	Beige/Tan/Translucent	Tan	White/Clear
Carrier	Mixed	None	None	Fleece	Fleece	Thin Fleece	Tissue/Translucent	Cellulose Blend
Base Resin	Blended/Recycled	Urethane	Melamine	Melamine	Phenolic (Modified)	Acrylic/Poly	Phenolic	Acrylic/Melamine
Fire Retardant	Variable	Possible	Yes	Yes	Yes	No	Yes - Medium	No
Flexibility	Variable	Good	Yes	Med	Medium	Good	Medium	Good
Surfaces To Be Bonded	3D Thick*	Crystal Clear	2	4	24	152	204TSA	330TS
Aluminum	●	●	●	●	●	○	○	○
Carbon	●	●	●	●	●	●	●	○
Cork	●	●	●	●	●	●	●	●
Cotton	●	●	●	●	●	●	●	●
Leather	●	●	●	●	●	○	●	●
Melamine	●	●	●	●	●	○	○	●
Paper	●	●	●	●	●	●	●	●
Polyester	●	●	●	●	●	○	○	●
Phenolic	●	●	●	●	●	○	●	●
Wood Veneer	●	●	●	●	●	●	●	●
Chipboard	●	●	●	●	●	●	●	●
Wool	●	●	●	●	●	●	●	●
2-Ply Faces	●	●	●	●	●	●	●	●
Glass	●	●	●	●	●	●	●	●
*3D Forming Modified Thermo-Set **Epoxy Certified	Amazing thicker innerply or backer, cold forms to perfect long lasting 3D shapes, low cost, low pressure tooling	Self leveling, clear UV extra bond	Extra light weight, translucent, easy to handle, no bleed, bending, 3D shape	3D Shapes, Can be colored, Low cost	Low cost, Low PSI, Exterior, Best for outdoor	Used for joint, splices, backer for perforating, backer for translucent microwood	Low cost, work horse	Light color for ash and maple, bonds balancing backer, 2ply Inlay Faces, Easy to handle
Thermo Set Adhesive	581TS	710TS	831DS	S3E	Epoxy Film**	Powder	Liquid	Metal Bond
Thickness	.005"	.005"	Varied	Any	.001" - .005"	Any	.001" - .010"	.005"
Minimum Glue Line Temp Under Full Temp & Pressure	275°F	275°F	Varied	50°F+	325°F	60 - 280°F	70°F+	275°F
Minimum Time In Minutes	3 Minutes	4 Minutes	30 Seconds	4 Minutes	2 Minutes	10 Seconds	15 - 60 Minutes	1 - 3 Minutes
Minimum Pressure - PSI	175 PSI	150 PSI	14 PSI ±	16 PSI	50 PSI	14 PSI	14 PSI	50 PSI
Color	Dark	Light Tan	Translucent	Beige/Chopped Glass	Clear	Varies	Crystal Clear	Clear
Carrier	Tissue	Tissue	Spun Web	Expands	None	None	None	None
Base Resin	Mod. Phenolic	Melamine	Varies	Urethan Paste	Epoxy (Med)	Varies	Epoxy (Med)	Epoxy (Med)
Fire Retardant	No	Yes	Available	Yes - Extreme	Available	Available	Available	Available
Flexibility	Medium	Fair	Excellent	Medium	Good	Varies	Good	Good
Surfaces To Be Bonded	581TS	710TS	831DS	S3E	Epoxy Film**	Powder	Liquid	Metal Bond
Aluminum	●	●	●	●	●	●	●	●
Carbon	●	●	●	●	●	●	●	●
Cork	●	●	●	●	●	●	●	●
Cotton	●	●	●	●	●	●	●	●
Leather	●	○	●	●	●	●	●	●
Melamine	●	●	●	●	●	●	●	●
Paper	●	●	●	●	●	●	●	●
Polyester	●	●	●	●	●	●	●	●
Phenolic	●	●	●	●	●	●	●	●
Wood Veneer	●	●	●	●	●	●	●	●
Chipboard	●	●	●	●	●	●	●	●
Wool	●	●	●	●	●	●	●	●
2-Ply Faces	●	●	●	○	●	●	●	●
Glass	●	●	●	●	●	●	●	●
*3D Forming Modified Thermo-Set **Epoxy Certified	Special Order, Most stable wood/metal inlays	Backer, translucent, clear overlay, HPL Type	Adhesive, one or two sides of web, special, Highly water resistant, Cement form overlay	Expanding gap filling, minimize vibrations for flexibility, bonds in watercraft, blocks out dust and moisture	Extreme flexibility, epoxy type bonds, ballistic extreme strength, overlay	Acoustic application, reactivates, breathes, adds stiffness to Fiber and Fiber mats	Self-leveling, hi or low gloss	For bonding to most metal surfaces, Plus
	●	●	○	○	○	○	○	○
	Very Good		No or Untested		Available in Sheets and Rolls			

In most cases above, the bonding strengths are a function of the following 5 components:

1. TEMPERATURE The temperature at the glue line should be checked with a "K" Thermo Couple Thermometer from Cole Palmer-(Catalog #91100-10) at www.colepalmer.com or call (800) 323-4340. In addition, you will need "K" type adapter plugs-(Catalog #93840-52) and a spool of very fine teflon coated wire-(Catalog #08541-02). Lenderink Technologies, Inc. will be happy to supply you with all of the above materials together for approximately \$250.00.

2. PRESSURE =
$$\frac{\text{Hydraulic Line Pressure (lbs)} \times \text{Surface Area of Cylinders (in}^2\text{)}}{\text{in}^2 \text{ of Material Being Pressed}}$$
 *Stacks or multiple pieces can be pressed at one time.

3. TIME When the glue line is at full temperature and pressure. Pressing time is often related to temperature and pressure. Higher temperature/pressure settings often allow for a shorter cycle time.

4. SURFACES Surfaces being bonded must be compatible with particular dry film adhesive being used. Surfaces must also have compatible energy and texture.

5. VAPOR/OFF GASSING Pre-press at full temperature and low pressure before adding Lenderink Dry Film Adhesive, i.e. vapors vacated from surfaces. Vapors cause bubbles and /or poor bonds. Moisture contents of wood should be below 8%, press breathing may be needed.

The above 5 components can be varied some and still provide good bonds. i.e. Temperature increase can often allow for pressure decrease and vice-versa. Extremely slick surfaces may have improved bonds if Corrona Treated and sanded. Start as close to our recommendations as possible. Vary from the recommendations only one variable at a time. If any questions, please feel free to contact us.

Please send samples to our lab for adhesive recommendations so that we may test the material.