

Overlays/Backers	20	170TS	160TS	160TSM	204TSA	100L	330TS*	330TSS	360	374	444	PolyBak
Thickness	.008"	.004"	.010"	.010"	.005"	.001" - .010"	.005"	.006"	.001" - .008"	.001" - .010"	.001" - .004"	.010" - .020"
Minimum Glue Line Bonding Temp	225°F+	290°F/140°C	260°F/127°C	275°F/135°C	290	220°F - 250°F	275°F/135°C	250°F/121°C	170°F	275°F/135°C	275°F/135°C	250°F/121°C
Press Time At Full Temp (Glue Line)	Seconds	30 Seconds	30 Seconds++	2 Minutes	1 Minute	10 Seconds	1 Minute+	2 Minutes	10 Seconds	10 Seconds	30 Seconds	1 Minute
Minimum Pressure - PSI	10 PSI	100+ PSI	85 PSI	100 PSI	150 PSI	10 PSI	90-150 PSI	65+ PSI	10 PSI	50 PSI	150 PSI	100 PSI
Heat Resistance	200°F	Thermo-Set	Thermo-Set	400°F	Thermo-Set	190°F	Thermo-Set	Thermo-Set	Yes	250°F	240°F	Thermo-Set
Need Release Sheet	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No
Type of Adhesive	Evat	Acrylic/Fleece	Woven Cellulose	Melamine/Acrylic	Phenolic	PE	Acrylic/Melamine	Acrylic/Melamine	Urethane	Polyester	Copolyamid	Thick Strong Paper
Color	Any	Translucent	Cream/Brown/Tan	Cream	Tan	Semi-Clear	Translucent/White	Clear	Clear	Clear	Clear	White
Adhesive Can Reactivate For Second Bonding	Yes	No	No	No	No	Yes	No	No	Yes	Yes	Yes	Yes
Water Resistance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Good	Yes
Flame Resistance	Possible	No	Optional	Possible	Medium	No	No	No	No	No	Fair	No
Flexibility	Excellent	Good	3D Moldable	Yes	Low	Excellent	3D Moldable	3D Moldable	Yes	Good	Good	Good
Printability	Good	Fair	Fair	Yes	Fair	Good	Yes	Yes	Good	Good	Good	Yes
Shelf Life Before Laminated	1 Year +	6 Mo.+ @ 75°F	6 Mo.+ @ 75°F	6 Months	6 Mo.+ @ 75°F	1 Year +	6 Mo.+ @ 75°F	6 Mo.+ @ 75°F	1 Year +	1 Year +	6 Mo.+ @ 75°F	Option
Can Be Flexed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Used For:	Carpet backing, non-slip	Backer for Perforated Wood Veneer	Backer for Wood Veneer, Wood Veneer Strengthener	Cover Metals, Backs Metals, Injection Mold	2 Ply Thermo-Set Overlay, Water Resistant	Pre-Applied Adhesive, Balance, Non-Slip Surface	2 Ply Balance, Water Resistant	2 Ply Balance, Water Resistant	Low-Temp Pre-Applied Adhesive	Pop Bottle Boat To Australia	For Flooring, PVC, Vinyl	Rigid Backer, Multiple Layers for Thicker Pieces
Surface	Film, Clear, White	Translucent Backer, Balance	Cloth FSC Certified - Fiber/Fabric	Fabric-Like, Printable	Balance	Balance, Adhesive	Thermo-Set Adhesive, Balance	Thermo-Set Adhesive, Balance	Non-slip Overlay, Balance, Adhesive	Clear Overlay, Adhesive	Clear, Balance, Adhesive	With or Without Adhesive Backer
Panel Balancing	Medium	Medium	Medium	Yes	Yes	Yes	Yes	Yes	Medium	Yes	Yes	Yes
Sewing	Yes	No	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No
Clear Overlays	No	No	No	No	Yes	No	No	No	Yes	Yes	No	No
Translucent (Light Transfer)	Yes	Yes	No	No	Medium	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Perforates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Some	Yes
Laser Cuts	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Die Cuts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Overlays/Backers	710TS	Clear Overlay Film*	Foils	Fold & Mold 3D*	Glass Fiber, Matt	Rubber	Plywood	Powder	Liquid	Wood Veneer	Engineer Core Veneer	3D, Compressible Natural Fiber Mat
Thickness	.005"	.002" - .020"	.001" - .003"	.017" - .100"	0.055"	.062" - .125"	Any	Any	Any	.010" - .25"	.062" - .125"	Any
Minimum Glue Line Bonding Temp	260°F/130°C	180°F - 250°F	Dribond Adhesive	225°F+	Per Order	Dribond	Varies	100°F	607°F	Varies	Varies	300°F
Press Time At Full Temp (Glue Line)	1 Minute	10 Seconds+	1 Minute	20 Seconds	Varies	2-3 Minutes	Varies	30 Seconds	1-12 Hours	Varies	Varies	1 Minute+
Minimum Pressure - PSI	100 PSI	10 PSI+	20+ PSI	10+ PSI	Varies	10 PSI	Varies	14 PSI	0	Varies	Varies	50 PSI
Heat Resistance	Thermo-Set	180°F+	200 Dribond Adhesive	200°F	Varies	Variable	Variable	Varies	Varies	300°F	300°F	200°F
Need Release Sheet	Yes	No	No	No	No	No	No	No	0	No	No	No
Type of Adhesive	Melamine	Varied	Dribond	#20+	Varies	Varies	Varies	Varies	Varies	Varies	Varies	Varies
Color	Clear/White	Clear/Any	Reflective	White/Grey/Pink	White	Black	Varies	Varies	Clear	Varies	Varies	Tan To Black
Adhesive Can Reactivate For Second Bonding	No	Yes	Yes	Yes	Per Order	Yes	Varies	Yes	No	Varies	Varies	Yes
Water Resistance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Varies	Varies	Good
Flame Resistance	Yes	Possible	Yes	Possible	Yes	Possible	Possible	Available	Medium	Possible	Medium	Available
Flexibility	Fair	3D Moldable	3D Moldable	3D Moldable	Good	Medium	Low	Varies	Yes	Good	Medium	Available
Printability	Yes	Yes	Yes	Yes	Fair	Poor	Medium	Medium	Medium	Good	Good	Medium
Shelf Life Before Laminated	6 Mo.+ @ 75°F	1 Year +	1 Year +	1 Year +	Per Order	1 Year +	1 Year	2 Year	2 Year			2 Years +
Can Be Flexed	Medium	Yes	Medium	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Used For:	Overlay Countertops, High Wear, Rigid, Embossable	Protective Overlay	Reflective, Deco	Core, 3D Parts, Signs, Lampshades, Partitions, Tackable	Acoustic, Extreme Fire Retard	Non-Slip Backer for Carpet & Mats	Builds & Stiffens Wood Surface, Screw Hold	Fabric, Headliners, Automotive Fibers	Extreme, Hi Lo Gloss	3D, Décor, Glueable	Dashboards, Metal, Stiffens, Tight Edge Fills	3D Shapes, Auto, Furniture, Partitions
Surface	Overlay, Clear, Fleece/Resin	Surface Protection, Printable, Erasable, High Wear, 18,000 Tabor Balance	Balancing Backer	Printable, Balance, Adhesive	Core, Breathable, Hydrophobic	Surface protection and non slip cushion	Many, Varies, Sanded			Any Specie Sanded	Smooth	Sheet & Pressed Fibers, Natural & Poly, Depends on Density & Pressed
Panel Balancing	Yes	Yes	Yes	Yes	Medium	Poor	Yes	Medium	Medium	Yes	Yes	Yes
Sewing	No	Yes	Some	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Clear Overlays	Yes	Yes	No	No	No	No	No	Yes	Yes	No	No	No
Translucent (Light Transfer)	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	No
Perforates	Yes	Yes	Some	Yes	Some	Yes	Some	Yes	Yes	Some	Some	Yes
Laser Cuts	Yes	Yes	Some	Yes	Some	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Die Cuts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Separate spreadsheet available

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 Corona 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.