

## PRODUCT INFORMATION BULLETIN

**FOR LAMINATION OF  
RIGID MULTILAYER,  
FLEXIBLE CIRCUITS AND  
UNCLAD LAMINATES**



### HT1500 SMOOTH

#### OVERVIEW

**PACOTHANE® HT1500 SMOOTH** - is a High Temperature resistant release film specifically engineered for laminating rigid, flexible and specialty substrate Printed Circuit Boards. It is designated for those Pacothane Technologies customers who desire a release film application requiring a lower Rz value or less matte image transfer on the surface of the laminated substrate.

#### LAMINATION APPLICATIONS

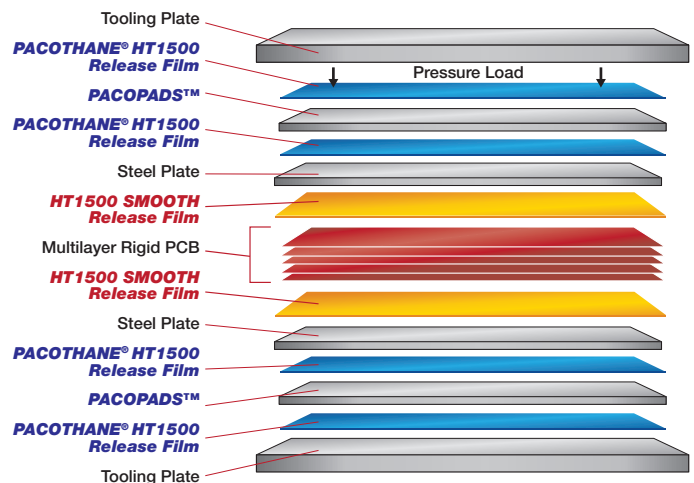
- **Rigid Multilayer Panels:** to contain resin squeeze-out; to buffer and protect copper from damaged tooling plates; to minimize stress effect from aluminum plates; to reduce frequency of plate cleaning; to increase plate life; to prevent press pads from sticking to plates or bonding to tooling pins. (See lay-up recommendation)
- **Flex, Rigid-Flex Panels:** to contain resin squeeze-out; for complete conformity to part topography; to provide easy separation of conformal hydraulics and driver pads from PCB surfaces. (See lay-up recommendation)

For both of the above applications lower Rz value due to less image transfer is prevalent on all substrate surfaces such as Copper Foil, Kapton and various Unclad Resins when laminated with PACOTHANE® HT1500 Smooth.

#### FEATURES

- Contaminate free release from circuit and separator plates
- Rated for Operating Temperatures up to 400°F (204°C) for up to 2 Hours
- Optimal thickness at 1.5 mils (38µm) for easy Handling (50% thicker than competitive release films)
- No embedded impurities
- Extremely low X&Y Axis shrinkage with reduced static potential
- Essentially inert: no out-gassing, no plate residue, no inter-laminar adhesion influence, and no vacuum system contamination
- Environmentally friendly: no Ozone depleting chemicals, no fluorine's
- Lower surface Rz value to minimize matte image transfer on the laminated surface of substrate used

#### RECOMMENDED LAMINATION LAY-UP



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### DESCRIPTION OF STANDARDS

Physical Property	Test Method	Reported Units	Typical Values		
Max. Application Temp.	Q 1025	°F (°C)	400(204)		
Thickness	Q 3019	mil (µm)	1.50 (38.1)		
Density	ASTM	g/cm3	0.94		
Heat Shrinkage	MD	Q-1045	%		
	TD		%		
			<5%		
			<5%		
Melting Temp.	ASTM E794	°F (°C)	495°F (257°C)		
Appearance	White, Semi-translucent				
Tensile Strength (At yield point)	MD	YP	ASTM D882	Kg/cm2	230
		Elong	ASTM D882	%	410
	TD	YP	ASTM D882	Kg/cm2	190
		Elong	ASTM D882	%	520

### AVAILABILITY

PACOTHANE® HT1500 SMOOTH RELEASE FILM Is available in rolls or custom-made sheet sizes, tooled to customer specifications. The complete line of Pacothane Technologies products is available from leading local Distributors Worldwide who offer “Just in Time” delivery from locally-available stocks.

### Also from Pacothane® Technologies:

#### RELEASE PRODUCTS



#### PRESS PADS



#### CONFORMABLES



#### CONTAMINATION CONTROL



#### ULTRA HIGH TEMPERATURE



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**REPRESENTED BY:**

