MacDermid
GRAPHICS SOLUTIONS

Tech Tip #1 - *Efficient Plate Production*

Proper design and layout of your photopolymer plate production area will increase platemaking efficiency and provide a comfortable, pleasant work place.

We recommend an enclosed area in order to facilitate proper ventilation and elimination of dust. Floor, wall and ceiling surfaces should be non-dusting. The area should be well lighted and easy to clean.

Space Requirements

The space needed for platemaking will depend on the exact equipment required by the nature of your shop and the types of plates to be processed. MacDermid representatives can advise you on the type and size of equipment best suited to your needs. A basic facility will include:

- Exposure unit
- Washout unit
- Drying unit
- Measuring instruments
- Plate cutting equipment
- Work table
- Light table to inspect negatives
- Shelves for material and plate storage

Equipment should be arranged for efficiency. Work and inspection tables should not interfere with processing equipment. Exposure, washout and drying units should be positioned for good workflow. Remember to provide room for free movement of solvent tanks and drums.

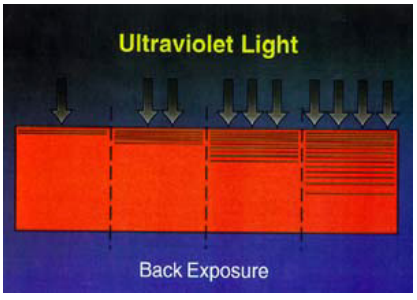
A MacDermid representative can provide assistance in planning an efficient equipment layout. As a guide, we suggest these minimum space requirements for plateroom.

Maximum Plate Size Capability of Equipment	Suggested Plateroom Area
52 x 80 in.	1150 sq. ft.
42 x 60 in.	966 sq. ft.
36 x 44 in.	550 sq. ft.
24 x 32 in.	350 sq. ft.

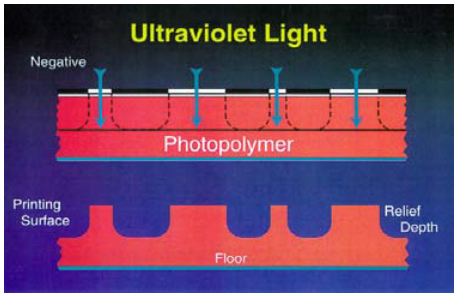
Position processing units for good work flow and maximum operator convenience.

Preparation - Prepare negative and cut photopolymer plate material to proper size.

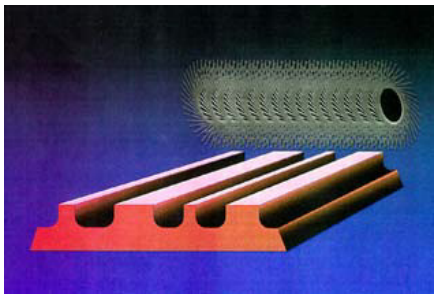
Back Exposure - Establish thickness of plate floor (relief depth) by curing part of photopolymer plate with UV light.



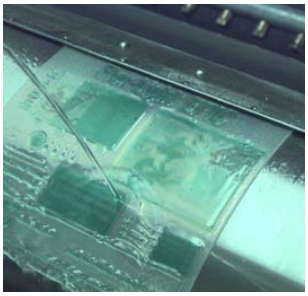
Face Exposure - Create cured 3-D image in photopolymer layer with UV light.



Washout - Remove uncured photopolymer with washout solution (solvent/aqueous) and brushes, leaving cured image.



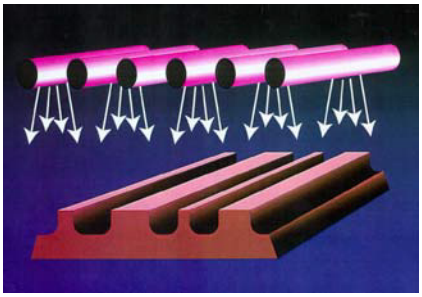
Rinsing - Rinse plate thoroughly to remove uncured photopolymer residue.



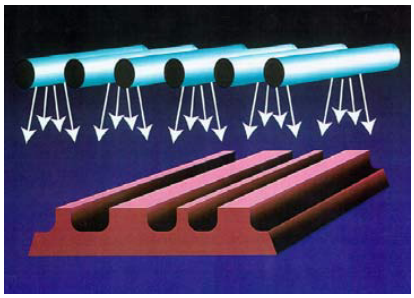
Blotting - Blot rinsed plate with lint free towel (automatic with some equipment) to remove excess solvent.

Pre-Dry and Inspection - Examine surface of plates for defects and polymer residue. If necessary, wipe lightly with fresh solvent.

Finishing - Detack plate to increase wear life and prevent surface stickiness.



Post Exposure - Crosslink (cure) any uncured polymer, increasing press life and resistance to ink solvents (simultaneous with finishing in some machines).



Ventilation

Always consult with a qualified heating/ventilation contractor to ensure that government standards for worker exposure to processing chemicals are met.

In general, platemaking facilities should meet these minimum requirements:

- Room air change: one change every 6 minutes.
- Washout area air change: Solvent System - one change every 3 minutes Aqueous System - one change every 6 minutes.
- Finishing area: If chemical finishing is used, area must incorporate properly installed vented exhaust hood.
- Heating/air conditioning system must supply sufficient makeup air to replace air exhausted by processing equipment and ventilation system.
- Room air should not be recirculated.
- Ventilation system should not introduce fumes to other parts of the building.
- Room exhausts should be located at floor level and close to processing equipment.
- **NOTE:** when washout solution is a perchloroethylene/n-Butanol mixture, *additional* exhaust located higher up may be required to accommodate the lighter n-Butanol vapors.
- Exhaust discharge should be away from ventilation intakes and pedestrian areas.
- Solvent vapors should not come in contact with open flames, sparks or high temperature sources.
- Electrostatic dust filters are helpful in removing dust from the air.

Lighting

A bright, well-lighted plateroom will help platemakers produce the highest quality. However, unprocessed photopolymer can be "cured" by long-term exposure to the ultraviolet contained in ordinary light. Plateroom lights should be covered with an ultraviolet filter. Most customers use standard cool white fluorescent lamps with clear UV shields. Natural light from windows and skylights should also be filtered through UV filters.

Walls, Ceilings and Floors

Walls and ceilings of the plateroom should be sealed and painted with a non-chalking, non-dusting paint. A smooth surface will be easier to keep dust free.

For durability, we suggest that floors be finished with a seamless chemical-resistant coating such as epoxy and polyurethane. It is a good idea to apply the finish a few inches up the wall for extra protection. Consult a qualified flooring professional for recommendations on coatings with resistance to the types of solvents and chemicals you plan to use.