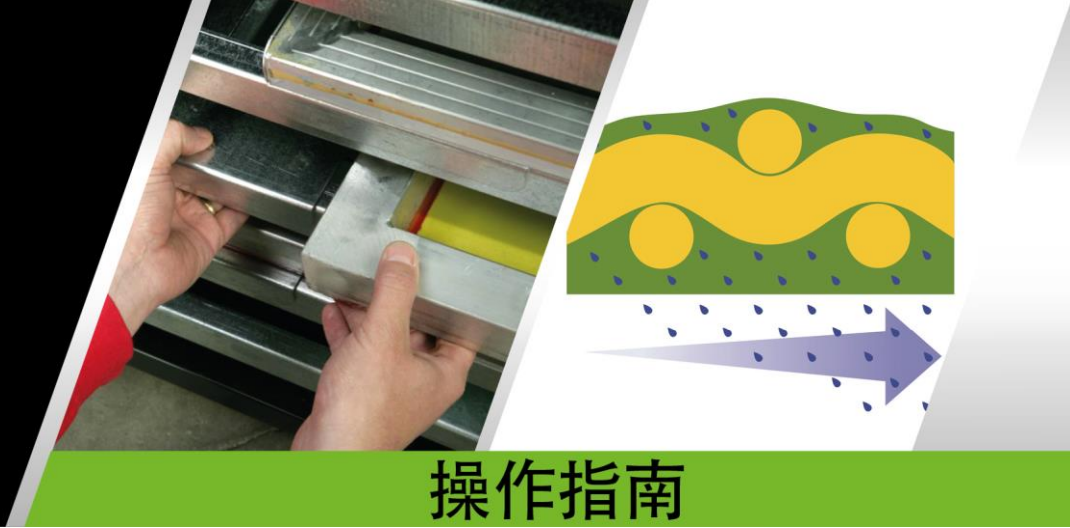


乳胶涂布



操作指南

乳胶层的有效干燥对于实现良好的膜板耐久性至关重要。本操作指南主要介绍如何正确执行 PLUS 乳胶的干燥程序以获得最佳效果。

干燥的重要性：

所有 PLUS 乳胶（尤其是重氮感光型乳胶）均需充分、彻底干燥后方可形成最坚固的膜板。网板干燥不充分会造成膜板松软、容易受损并在印刷过程中迅速断裂。

网板的干燥过程虽然看似简单，但却能够对最终印刷效果产生极大影响。决定干燥质量并具有同等重要性的三个要素：(1) 温度，(2) 湿度，(3) 气流。

温度- 操作人员通常认为高温有利于膜板的快速干燥，然而重氮感光剂对温度十分敏感，温度越高，其分解/反应速度越快。高温干燥后会出现明显的冲刷缓慢、费力和分辨率降低现象。某些情况下，膜板甚至根本无法溶解或无法冲洗。因此，建议使用的最高干燥温度为 35°C。

重要提示：鉴于温度的重要性，最好每月检查一次干燥器的内部温度是否与控制面板的显示温度一致。从干燥器中取出的网框如果发热烫手，说明实际温度过高！

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湿度- 干燥器内空气的吸水量，在某种程度上比温度更重要。夏季，某些在湿热环境下工作的印刷机会因为网板干燥不当而在印刷过程中发生网板损坏。因此而导致的网板重制和印刷机停工增加了高昂的生产成本。

网板损坏的原因在于重氮感光剂在接触到聚合物之前与水发生反应，结果只有部分乳胶凝固，造成膜板松软羸弱。

干燥过程中的相对湿度应低于 50%；湿度值越低，空气凝水量越高，网板的干燥速度越快。可使用（上图所示）数字温度计来查看环境相对湿度（RH）。



重要提示：在湿热、阴雨天等潮湿环境下进行干燥，或在密封干燥箱内同时对多个网板进行干燥时，安装除湿器能够明显改善干燥效果。花费不到 300 美元即可大幅提升设备工作效率并防止成本高昂的印刷机停工。

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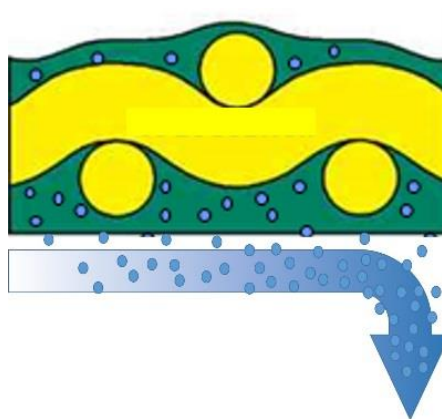
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气流 -持续流经膜板表面的干热空气能够直接吹走乳胶附近的潮湿空气，有效提高干燥效率。需要注意的是，若吹扫空气中掺入大量灰尘颗粒，则干燥操作将导致网板彻底损坏。最佳折衷方案是采用均匀轻缓的过滤空气。



为达到最佳效果，应使用干热过滤空气来蒸发膜板上的水分。

建议：

干燥箱- 专用干燥箱为网板的连续高效干燥提供了理想的操作环境，是网板干燥的首选工具。

一台合格的干燥箱应具备以下功能：(1) 提供安全灯光；(2) 恒温调节，精确至 $\pm 1^{\circ}\text{C}$ ；(3) 气流平稳均匀；(4) 过滤空气；(5) 排出潮湿空气、吸入干燥空气；(6) 允许网板水平干燥并保持刮刀面朝上。图示：Natgraph 公司操作方式



干燥期间，PLUS 乳胶网板应始终处于水平并保持刮刀面朝上以确保乳胶凝集在网板的印刷侧。若垂直放置网板，乳胶可能会在干燥之前向下流淌并形成“幕帘”状凝胶，或者出现网框底部膜板厚度增加 (EOM)。

干燥结束的检查方法- 用手触摸网板表面，手感干燥且不粘连说明干燥成功。更为准确的方法是用精度小于 5% 的湿度计进行检查。请注意，某些双重固化型乳胶即使在完全干燥后仍然存在表面发黏现象，例如 PLUS 8000、PLUS 8050 和 PLUS TX。

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其它注意事项- 温度对尺寸精度的影响是另一个容易被忽视的问题。例如，一个 1m x 1m 铝质网框经过 40°C 干燥后，每个维度的尺寸都比 20°C 室温状态下多出 440 微米！因此，网板在曝光之前必须将温度降回至室温。所有网板应在印刷操作环境下以相同温度曝光。

未曝光网板的储存- 在使用之前，必须在“安全”条件下储存所有网板。温度应控制在 20°C 或以下并保持低湿度。网板对紫外线十分敏感，因此必须存放在避光处或黄色安全灯光区域。如果曝露在日光下，大多数网板会在 20 秒内出现雾化现象 (曝光)；PLUS MIDI 或 PLUS AQUA 快速乳胶则会在 1 秒内雾化。

可以使用以下文字来检查安全灯光。 **如果在网板制作区能够看清此黄色文字，说明安全灯光未处于安全状态。**

在温度为 20°C、相对湿度为 50%的条件下，未曝光网板的最长保存期为三周，如果温度或湿度大于上述值，保存期会大幅缩短。

总结：

网板干燥不充分是造成膜板失效的三大常见原因之一，仅次于丝网制备和曝光不足，而且最容易被忽视。正确干燥网板的方法简洁易行并可以减少印刷损伤，从长远角度看能为用户节省大量资金。

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