

Thick Capillary Film

1. DESCRIPTION

- **TECNO** film features a specially formulated transparent photopolymer emulsion, which ensures fast exposure times and great printing results.
- Emulsion is coated on a polyethylene coated photo base paper with a silky matte finish. This allows easy handling before and after exposure.
- Easy-release paper provides stencil with anti-stick surface and minimizes adhesion to glass during exposure. It also resists pick-up of flashed ink films.
- **TECNO** film can simply be applied to a wet screen, or laminated with backing emulsion, such as **FOTECOAT 1850** or **1833**, for increased adhesion and on-press durability.
- **TECNO** film saves time and enables fast and easy production of thick stencils with guaranteed thickness and exposure times.

2. THICKNESS MESH RECOMMENDATIONS

Capillary film	Thickness	Recommended Mesh (l/cm)
TECNO 100	100 µm	43/61
TECNO 150	150 µm	36/54
TECNO 200	200 µm	32/48
TECNO 250	250 µm	30/43
TECNO 300	300 µm	24/32
TECNO 400	400 µm	15/30
TECNO 700	700 µm	8/21

3. GENERAL CHARACTERISTICS

- Easy to handle
- High resolution
- Minimal exposure time
- Ideal for ceramic, electronics and textile applications
- Very good durability
- Time saver in screen preparation
- Extended shelf life
- Excellent print quality
- Perfect for high density printing

4. HANDLING THE FILM

- The film should be handled under low wattage tungsten or yellow fluorescent lighting. The film should be returned to the container after cutting off the required length.
- Do not kink the film as this could affect adhesion to the mesh. The film should be handled wearing light cotton or lint-free gloves to avoid contact with the emulsion surface.
- Do not allow the film surface to come in contact with water.

5. MESH PREPARATION

All new mesh should be abraded vigorously on the printing side with **FOTECHEM 2023** before use. **FOTECHEM 2025** should be used to provide an even water break and to improve adhesion.

6. APPLICATION ADHERING TO MESH

Several methods can be employed to adhere **TECNO** capillary film:

Traditional capillary film method

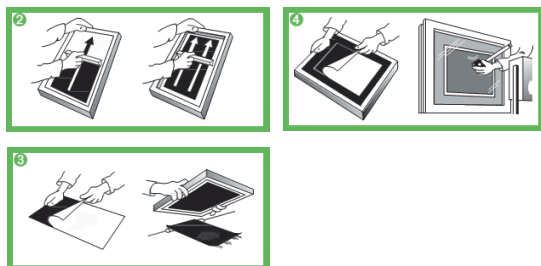
1. Remove all dust from the emulsion side of the film.
2. Spray the mesh with water and wipe the excess water from the perimeter of the frame to avoid water drops running into the adhered film.
3. Contact the leading edge of the film onto the top of the wet vertical screen and allow the wet screen's capillary action to adhere the film to the mesh.
4. Remove excess moisture from the inside of the screen with a lightweight window squeegee.
5. Wipe excess water from the perimeter of the frame with an absorbent cloth then proceed to drying.

For films with thickness of more than 200 µm we recommend the film transfer with emulsion.

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Precoating with emulsion

- Coat 1x print side, 2x squeegee side, wet in wet and do not dry.
- Use **FOTECOAT 1833** for water-based inks or **FOTECOAT 1850** for solvent-based inks. The coating should cover most of the mesh area.
- Remove protective plastic sheet from film.
- Place film, emulsion side upwards, on a table.
- Bring the wet screen in contact with the film edge. Pull the frame slowly and without pressure towards you.
- Dry at 25-35°C, squeegee side upwards.
- **IMPORTANT:** Let the film cool down before peeling the carrier. Dry again for a few minutes. Place right-reading positive in position. Expose.
- Wash-out at 25°C (immerse for a few minutes in luke warm water). Dry thoroughly.



Direct/Indirect method

- Place the film emulsion side up on a raised surface.
- Place substrate side of screen onto film.
- Apply a bead of **FOTECOAT 1850** or **FOTECOAT 1833** to the top edge of the film.
- Squeegee the emulsion several times until film is completely adhered to mesh.

Backing with emulsion method

- Mount the **TECNO** to the mesh using the traditional capillary film method.
- Allow screen to dry and remove backing.
- Apply two coats of **FOTECOAT 1850** or **FOTECOAT 1833** to the squeegee side of the screen and proceed to the screen-drying step.

For all above methods, the screen can be further reinforced by applying two coats of emulsion to squeegee side of screen after initial drying.

7. DRYING THE SCREEN

- The screen can be dried with cold or warm air, maximum 35°C.
- Thorough drying is essential for optimum results.
- When the backing sheet has been peeled off, continue drying for a few minutes to ensure the film is completely dry.
- Drying should be in either dark or yellow light conditions.

8. EXPOSURE

- It is always recommended to perform a stepped exposure test to determine optimum exposure.
- The preferred test method is with a backing emulsion coated onto squeegee side of screen.
- Optimum exposure is indicated as the shortest time that fully cures through the film and leaves a hardened layer of emulsion on the squeegee side.

Time in seconds, using 5 kW metal halide lamp, 1,0 m distance:

Capillary film	12.140 W	24.120 W	32.70 W	43.80 W	43.80 Y	64.64 Y
TECNO 100				25	60	40
TECNO 150				30	75	50
TECNO 200		50	40	40	90	60
TECNO 250		75	55	70	140	
TECNO 300	180	110	70	90	180	
TECNO 400	300	180	150	180	300	
TECNO 700	540	400	300	400		

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9. WASHOUT DEVELOPMENT

- Wet both sides of screen with a strong, finely divided spray of water and continue washing out from substrate side until all image areas are fully open.
- Rinse both sides of screen and dry thoroughly before use.
- A properly exposed and developed screen should not exhibit scumming or feel slimy on the squeegee side. The use of warm water will decrease washout time.

10. STENCIL REMOVAL

All commercial decoaters can be used. A high pressure gun is recommended. Stencil removal is only possible, if the screen has not been hardened chemically.

FOTECO offers several stencil removers:

- **FOTECHEM 2005** Paste
- **FOTECHEM 2042 S** decoater concentrate 1:30

Ghost images can be removed with **FOTECHEM 2089**.