

# Dental Duplicating Film



Techniques Series.

# X-OMAT 2 Dental Duplicating film

The following techniques are recommended for reproducing radiographs used to accompany patient records, as teaching aids, or in other applications where duplicate dental radiographs are needed.

X-OMAT 2 Dental Duplicating film is intended for use in duplicators. Your dental X-ray products dealer can provide you with a complete list of duplicator manufacturers.

## Safelighting

Proper safelighting is required in order to produce a sharp duplicate image. Use a GBX-2 Safelight (ruby red) filter or its equivalent in your darkroom to prevent unnecessary fogging of the duplicating film. The safelight must contain a 15-watt frosted bulb and be placed four feet from the film surface.

The same recommendations apply to viewing or positioning lights found inside certain duplicators and covers on daylight loaders. They MUST all be equipped with ruby red colored lights; do not use red Christmas lights. These will fog your film. In the case of daylight loaders, use a ruby red filter cover. Contact your dental dealer or manufacturer of the duplicator for replacement parts.

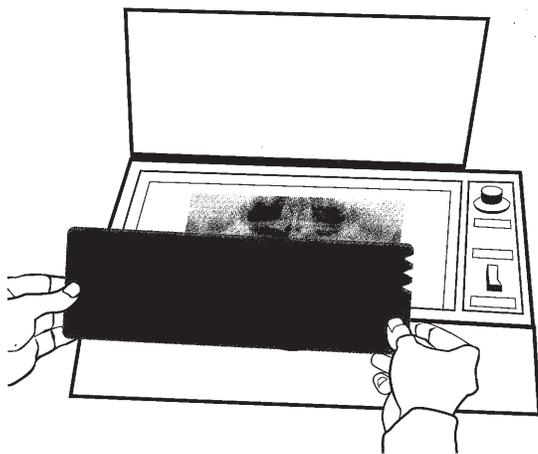


Figure 1 Emulsion or light (salmon pink) toward the light source.

**CAUTION: Amber, yellow or orange safelight filters will cause the duplicating film to fog and should be replaced. (See Figure 3).**

## Film Orientation

Duplicating film is a single emulsion film, meaning there is emulsion on only one side of the film. The non-emulsion or dark side of the film is a backing or pelloid that prevents light from passing back through the film, eliminating potential blur and creating a sharper image. The non-emulsion backing is a forest green color to differentiate it from the emulsion side, which is salmon pink.

Radiographs to be duplicated must be placed in direct contact with the emulsion or light side (salmon pink) of the duplicating film. Individual sheets of duplicating film are triple-notched in the upper right hand corner when the film is viewed lengthwise and the non-emulsion side (forest green) is facing the operator. (See Figure 2)

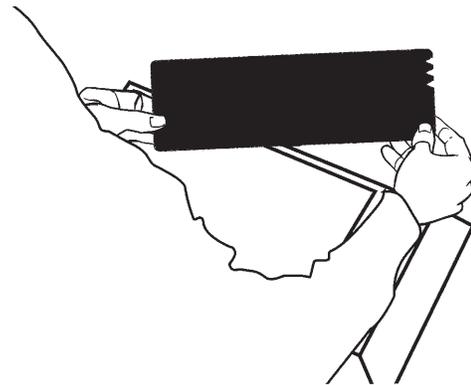


Figure 2 Note the triple notch should be in the upper right corner.

**NOTE: On size 2 duplicating film, the raised dot (dimple) can be felt on the emulsion side (salmon pink) of the film.**

- Place the original radiograph on the glass or plastic top of the duplicator (see Figure 1).
- Make sure it is oriented correctly, as for viewing.
- Place an unexposed sheet of duplicating film on top of the radiograph being duplicated with the emulsion side (salmon pink) down facing the light source (see Figure 1).
- Expose the film according to the duplicator manufacturer's recommendations and process.

During exposure, direct contact must be maintained between the radiograph and the duplicating film through the use of a duplicator.

### Exposure

Unlike standard dental film, X-OMAT 2 Dental Duplicating film is a direct positive film. Therefore, when increased densities (darker films) are desired, exposure times must be reduced. Conversely, when decreased densities (lighter films) are desired, exposure times must be increased.

Duplicators usually control exposure by means of a timer which turns the light source on for a set period of time. See manufacturers' guidelines for recommended exposure guidelines.

### Processing

As with all film, it is essential that proper processing be maintained with regular replenishment. When using severely exhausted chemistry, the X-OMAT 2 Dental Duplicating film will exhibit color streaks of pink and/or yellow:

When using fresh or properly replenished chemistry, these colors will be automatically removed from the film producing a sharp, clear image. This applies to both automatic and manual processing.

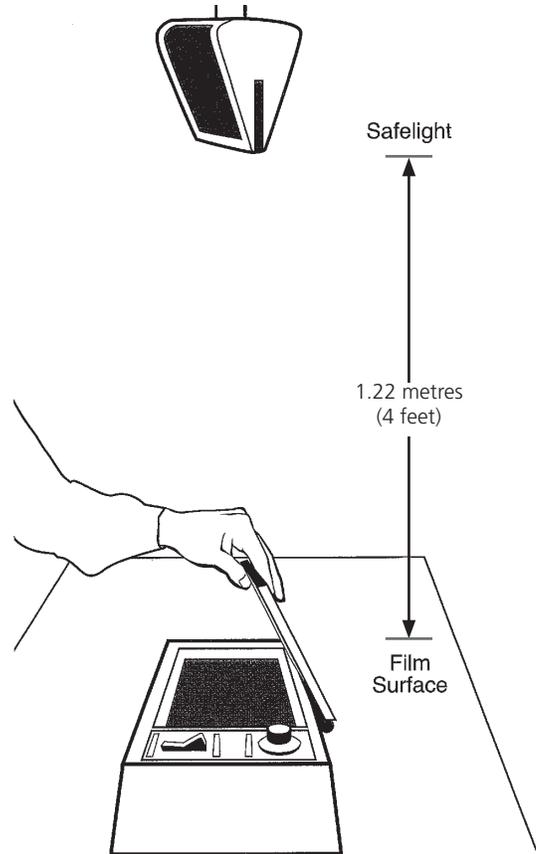
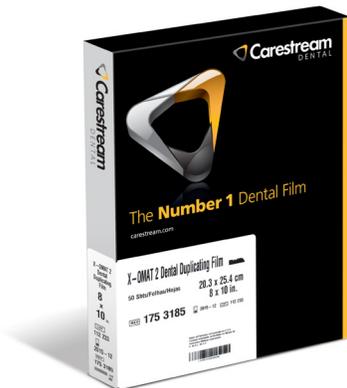


Figure 3 Use only GBX-2 (ruby red) Safelight Filters. The safelight needs to be a 1.22 metres (4 feet) from the film surface.

### Availability

X-OMAT 2 Dental Duplicating film is available in the following sizes:

Nominal Size	Per Package	REF Number
5 x 12 in.	50 sheets	121 5821
15 x 30 cm	50 sheets	149 3691
8 x 10 in	50 sheets	175 3185
30.5 X 40.5 cm	150 packets	158 6460

# Basic Troubleshooting

## Frequently Asked Questions

**Question:** Why are my duplicate films coming out black after processing?

**Answer:** The most common reason is that the duplicating film is positioned upside-down, with the forest green non-emulsion side towards the light source. Light cannot pass through the non-emulsion or dark side and no image can be produced.

The correct way to position this film is to place the salmon pink emulsion side down, towards the light source, on top of the original film to be duplicated, so that light may pass through the original film and to the salmon pink emulsion side of the duplicating film (see Figure 1).

Other reasons for black films may include:

- Exposure button not pressed or not pressed with enough force to activate the duplicator
- Battery needs to be replaced or the duplicator is not plugged in
- Timer may not be operating
- X-ray film used instead of duplicating film
- Some duplicators have more than 1 exposing bulb – check that both are working

**Question:** Why are my duplicate films coming out too dark after processing?

**Answer:** The most common reasons are:

- Exposure time needs to be increased
- Duplicating film may not have been exposed
- Battery may be weak
- Original radiograph may be too dark; check exposure and processing

**Question:** Why are my duplicate films coming out too light after processing?

**Answer:** The most common reasons are:

- Exposure time needs to be decreased
- Original radiograph may be too light; check exposure and processing
- Improper safelighting, film is being fogged

**Question:** Why are my duplicate films coming out clear after processing?

**Answer:** The most common reasons are:

- Duplicating film may have been overexposed (too much light)
- Duplicating film may have been placed directly against the light source. The original film must be placed against the light source with the duplicating film on top of it (see Figure 1).
- Duplicating film may have been exposed to daylight or improper safelight conditions. GBX-2 [ruby red] filters are required. Safelight filters, viewing lights and covers for daylight loaders must all be RUBY RED.

**Question:** Why are my duplicate films coming out fuzzy or blurred after processing?

**Answer:** The most common reasons are:

- Original films are in film mounts that do not provide direct contact with the duplicating film; original films should be removed from mounts.
- The cover of the duplicator may not be closed tightly or may need foam pads replaced to provide more intimate contact between original radiograph and duplicating film.

**Question:** Why are my duplicate films coming out with colored streaks after processing?

**Answer:** The chemicals are exhausted and must be replaced. Check processing for time and temperature.

Notes

Would you like to know more?

For more information call **800.933.8031** or visit **[carestream.com](http://carestream.com)**.