

Avery Dennison[®] Instructional Bulletin 1.03

Explanation of Mottle

Description

Mottle is a term used to describe dull spots typically found on cast PVC films but can also be present on other types of filmic PVC. Although this is mainly a characteristic of soft, conformable cast PVC films when the glossy top surface is pressed against the release liner in a wound roll. There are many factors that can effect the level and severity of mottle, including:

- Heat
- Time wound in a roll
- Tightness of roll winding
- Film formulation (type and amount of plasticiser)
- Texture of release liner

The higher the temperature, tighter the winding, rougher the liner, longer the time spent wound in a roll, the greater the tendency for mottle. Since cast vinyl films are designed to be conformable, they are more likely to exhibit mottle. Mottle is most likely to be visible in darker colors with high gloss level; however, severe mottle may be visible in other colors as well as in clear films.

To help minimise mottle, our manufacturing process uses consistent and low winding tensions. Rolls are suspended with the use of oversized core end plugs or equivalent methods.

Tips to prevent mottle

- Follow storage temperature and humidity conditions, 23 ±5°C and 50±5 % RH.
- Avoid storing in direct sunlight or near heat sources.
- Suspend rolls or keep them in boxes with end plugs that are designed to suspend the roll.

Note: Laying rolls on their side may induce a mottle 'band', which will appear as a matt stripe in the web direction.

- If re-winding, wind rolls as loosely as possible.

How to eliminate mottle

- Unwind the roll and apply heat directly to the mottle area using a heat gun - mottle should begin to go away immediately.
- Unwind the roll and allow to dwell in a warm area.

Note: Depending on the amount of heat and time, most mottle will go away upon film application.

Note: Severely mottled film should not be printed prior to treatment, as the mottle may translate to a matt ink finish.

For further information, contact your local Avery Dennison representative.