Mold and mildew have long been an issue in marine exterior upholstery. The objective is to outline the causes and suggest solutions to minimize the occurrence of mildew and/or pink stain on marine upholstery.

**THE CAUSE – MICROORGANISMS**

Bacteria and fungi, referred to as microorganisms, enter marine upholstery carried by wind or rain and leave behind mildew spores or seeds in the foam. These same particles attach to the vinyl surface, but can easily be removed by regular cleaning and care. Four elements are required for mold and mildew growth:

1. Spores
2. Food Source
3. Warmth
4. Moisture

If any of these four elements are removed, the problem will be eliminated. Moisture would be considered the easiest to control, but this is difficult to do in a marine environment. When a cushion is constantly exposed to rain and high humidity, which is common in the southeast and Florida, the chances of mildew growth are increased.

A marine cushion is a complex construction which includes vinyl, thread, urethane foam and a substrate. If dirt enters the cushion the biological growth cycle can begin. It is very common for organisms growing in the foam cushioning to produce colored byproducts, which often appear as a pink stain on the vinyl.

- Any observed mildew contamination can be removed by washing with a diluted solution of household bleach in water. Rinse and dry thoroughly after use.
- Specify and use new materials that have been treated with an effective antimicrobial to inhibit new growth. Here, the boat builders have the greatest power for they can specify the performance requirements to assure long-term protection components such as vinyl, urethane, foam and wood.

In the design of the seat, consideration should be given to the flow or run off of water so that it is not impeded by seams. Vents should be incorporated to allow water or vapor to escape in the event that leakage into the foam has occurred.

If the exposed part of the boat has a tarpaulin or cover, use it when the boat is not in use.

Spradling has created a guide called the Smart Seat™ Book which provides recommended steps in the construction of a marine seat to help reduce the occurrence of pink stain and mildew growth. All Spradling International Marine products carry the maximum level of biocide additives and are regularly tested to ensure the longevity of the biocide under extreme conditions.

**THE SOLUTION – CLEANING & CARE**

The Chemical Fabrics & Film Association recommends the following solutions:

- Keep your upholstery clean. Frequent cleaning with a mild detergent will remove any organic matter, dirt or debris which can be readily utilized as a food source for microorganisms.