



THE THREAD

Unraveling the Mysteries of Fibers, Fabrics and Floorcoverings

FLAME RETARDANTS ON UPHOLSTERY... Hidden Problems Continue to Surface

New Laws in the Making

Regulations concerning flame proofing are not new. Many states and the federal government have had laws on the books for years requiring the use of flame retardants.

Requirements vary considerably from state to state and at the federal level. Because of this, the laws can be very confusing to consumers and to the designers who must specify flame retardants.

A new law being proposed by the Consumer Product Safety Commission is especially troubling because it requires a much wider use of flame retardants on residential upholstery fabrics.

Unfortunately for the consumer, this proposed law DOES NOT REQUIRE DISCLOSURE that a flame retardant has been used. Consequently, the end-user has no idea that these chemicals may be lurking on or beneath the fabrics on their furnishings.

Hidden Danger

The most common use of flame retardants on residential upholstered furnishings is found inside down-filled

cushions. The cotton fabric, or "ticking," encasing the down is treated with a flame retardant.

Unfortunately, many of these chemicals are hydrophilic (water loving), which means moisture is drawn to the flame retardant. With enough moisture, the chemical can actually migrate to the face fabric.

Homes close to coastlines and regions with high humidity are particularly at risk as are furnishings in garden and pool rooms and other "damp" areas. This migration process can also be accelerated by water-based cleaning of the upholstery.

The Damage

When the acidic flame retardant chemical comes in contact with the face fabric, it can change the dyes or damage the fibers. Eventually this chemical reaction becomes apparent as color changes begin to occur on the surface of the fabric.



Original Color 6-Months 1-Year

All dyed fabric can change color over time, but in most cases of dye damage from flame retardants, it is the blue dyes that seem to be most affected. These blue dyes can change to gray, purple or pink. In all cases, the changes are very subtle at first, and then become more noticeable with time.

On white or light-colored cotton fabrics, the damage caused by acidic flame retardants shows



up as a yellowing or browning condition, usually very mottled in appearance. The color change usually starts to appear within six to twelve months after installation and becomes darker as the fabric gets older.

How To Identify It

There are some telltale signs in all the cases of ticking-related flame retardant damage we

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have seen. The most important of these signs are:

1. Discoloration only on loose cushions. Face fabric is usually cellulosic (cotton, rayon, linen, etc.).
2. The presence of a cotton ticking with a pH of 5 or lower. Usually, these tickings encase down filling.
3. Absence of discoloration at cushion seams, where multiple layers of fabric inside the cushion (the seam allowances) protect the face fabric from contact with the cotton ticking.
4. Variance in pH on face fabric, with discolored areas being more acid than non-discolored areas.

Permanent Changes

The color changes involved in these situations are generally not reversible. Occasionally,

alkaline based chemicals such as Fiber-Seal Systems' WunderKleen can be applied to the affected area, slowing or stopping further damage. In some rare cases it has been able to reverse the damage.

Accountability

It has been our experience that manufacturers of flame retardants do not warranty their product for color changes or long-term damage. Likewise, most furniture manufacturers will take no responsibility when this problem occurs.

Quite often, customers are left with no recourse but to replace the fabric.

ASCR Flyer

The Association of Specialists in Cleaning and Restoration (ASCR) has written a small flyer, "Acid Burns on Fabric," in which flame retardant damage is discussed. Contact your

local Fiber-Seal Service Center if you would like a copy of this information.

Need Help With Fabric Protection or Upholstery Cleaning?

Your local Fiber-Seal Service Center is ready to help and just a click away.



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