

# Guideline for Identifying Deteriorated Slings

## Accelerated Deterioration from Bleach, High Temperature Wash or Drying

Slings, especially loop straps that have been damaged from being laundered in unsuitable conditions (bleach, high heat wash or dry) may appear to be in good condition but the actual tensile strength of the material may be compromised and pose a safety risk and should not be used for lifting a patient or resident. This Guide is intended to help staff and caregivers better identify slings that have been exposed to above laundry conditions and subsequent loss of tensile strength. We encourage any sling identified with the following characteristics to be removed from service immediately as a preventive measure.

Proactive Medical slings have been designed and tested for laundry wash conditions of 170F degrees and air dry or dry at low temperature. The slings should never be bleached. Commercial washer and dryers are not recommended. Care instructions on the sling label should always be followed. Laundry equipment should be properly maintained and repaired when necessary.

**Completely Faded / Missing / Illegible Tag** while the main body of the sling fabric is still intact and in relatively good condition. Colors are not faded or show very little fading.



This is a good indicator that the sling may have been washed with bleach at high temperature.



The label is made from material that is less resilient to chemical attack and will usually deteriorate long before the loop straps, bindings, or main body fabric.



Figure 1 shows a sling that has deteriorated from normal use and care. Note the label is intact and faded but still legible and consistent with overall condition of the sling.



**Figure 1**



**Extreme Curling / Permanent Wrinkles** of loop straps can set in when the slings are dried at high heat or dried over an extended period of time. Heat combined with bleach or other chemicals will intensify the chemical action.

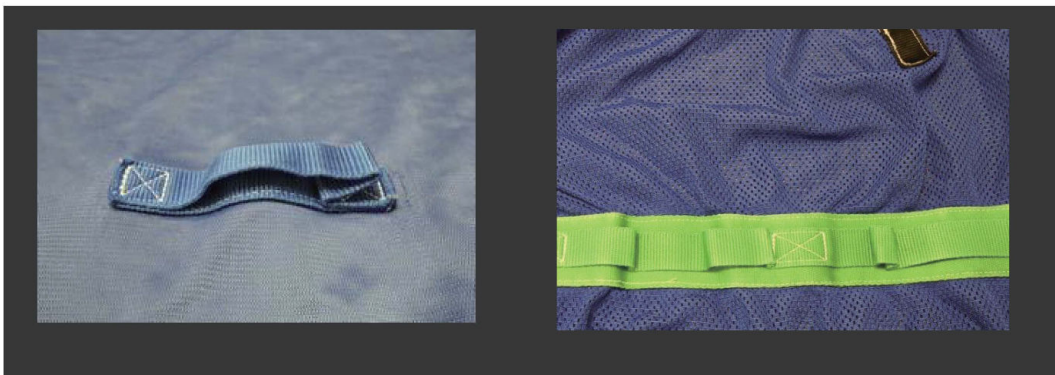


**Extreme Loop Strap Curling**

**Permanent Creasing of Loop Strap**



In addition to the loop straps, the back strap and sling handles if present will also show the permanent creases. Permanent creases will tend towards its original wrinkled position even when stretched out.

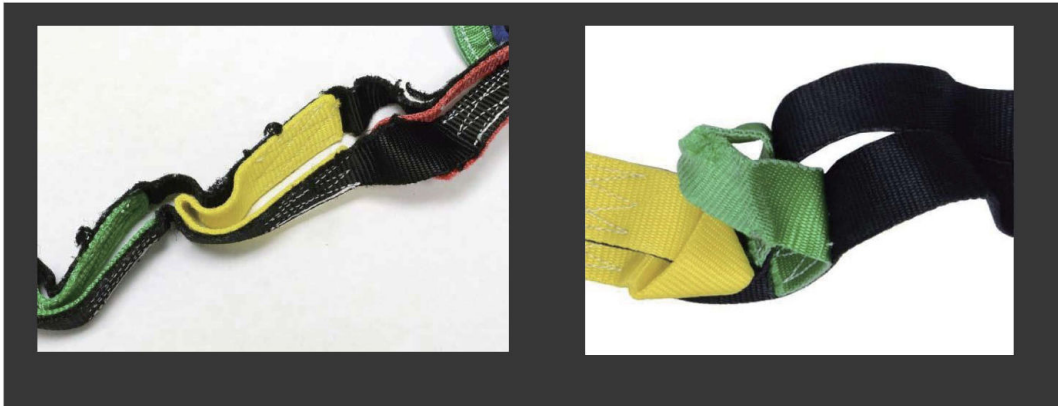


**Handle with Permanent Crease**

**Back strap with Permanent Crease**



**Strap Brittleness / Stiffness / Surface and Edge Abrasion** are additional indicators that the sling may have been laundered in unsuitable conditions and has lost tensile strength. Loop straps that have stiffened or become brittle will tend to remain in the state, position, or shape it is bent into instead of returning into a normal relaxed state.



***Loop Strap with Excessive Edge Abrasion***

***Stiffened and Brittle Loop Strap***

Permanent crease, wrinkles, along with brittleness increase chance that the fabric will suffer more damage from abrasion, internal fiber abrasion as well as external abrasion with other objects. Wash cycles with excessive agitation will increase abrasion and degradation of the fabric.



**Decomposition of Edge Binding** and other components of the sling are clear indicators of degradation from chemical treatment. Color loss and a chalky appearance is common. Stitching (comprised of a different material) may still be intact.



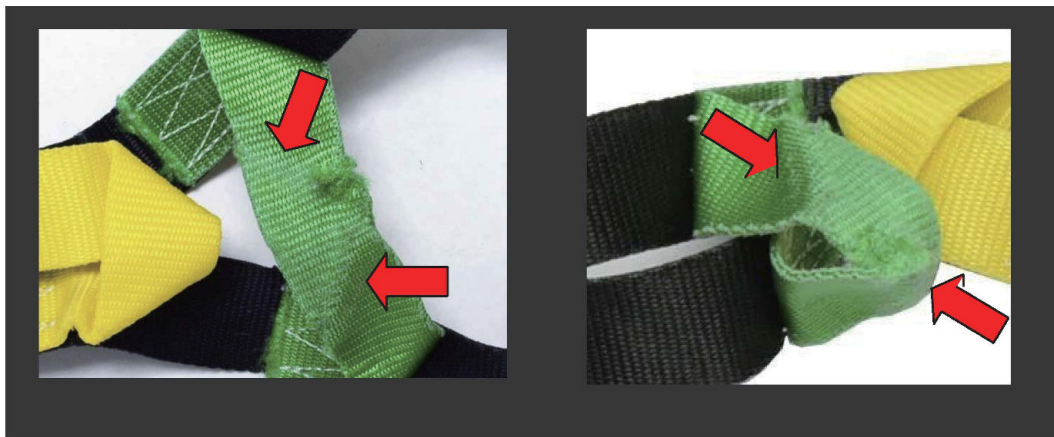
***Edge Binding Decomposition***

***Back/Handle Strap Decomposition***



**Surface Abrasion / Color Loss** especially at creases or areas of frequent use. Stiffened or brittle fabric will usually wear excessively around the creases and areas that come into frequent contact with other object. The surface and edge abrasion is a result of this and will usually be accompanied by loss of color with a chalky appearance.





**Surface Abrasion at Creases**

**Color Loss and Chalky Appearance**



Figure 2 shows an example of a loop strap with wear from normal use. Note the absence of permanent crease and surface abrasion.



**Figure 2 Loop Strap with Normal Wear**

#### **Causes of Deterioration Due to Laundry Conditions:**

1. *Chemical degradation* (bleach, peroxide, chlorine and other disinfectants). This can occur if bleach was used in high amounts or high concentration bleach was used during the wash cycle. Washing at higher temperatures will make the fabric more susceptible to attack by the chemical. Insufficient flush, rinse, or neutralizing of the chemicals from fabric followed by subsequent drying at high temperature will again intensify chemical action and increase the degree of deterioration to the sling fabric.
2. *Temperature or high heat damage*. This can occur if the slings are left in the dryer for too long or dried at excessive heat. The Slings are made from plastic fibers and do not absorb as much water and require less drying time than other laundry of natural fiber and fabric.
3. *Mechanical/Wash Action* can contribute to the accelerated deterioration of the slings, especially if they have been subjected to the above conditions. Slings should be washed using a gentle cycle to minimize excessive agitation and internal fiber abrasion.