



# Commercial Dry Cleaning of Museum Textiles

## Introduction

Museum textiles, unlike personal clothing, need special attention when being dry cleaned. The following guidelines will help in arranging for the safest dry cleaning for museum textiles.

## What to Dry Clean

Only very sturdy museum textiles can be dry cleaned safely. Commercial dry cleaning involves a mechanical tumbling action similar to machine washing, as well as a heated cycle for solvent removal. Few museum textiles are strong enough to withstand the process. To determine if a textile can be dry cleaned, inspect it thoroughly to ensure that the textile does not have threadbare areas, tears, torn seams, or fragile linings and attachments. For example, if a piece has dry, cracked leather attachments that cannot be removed, dry cleaning will only worsen the cracking. On the other hand, if the leather is in reasonably good condition, it should be able to withstand the process.

The type of soiling or staining will also determine if dry cleaning is a viable option. Dry cleaning is best suited to greasy or oily stains, airborne soiling, soot, and some accretions such as wax, tar, and some paints. Solvent cleaning does not affect water-sensitive dyes, elements (e.g. gelatin sequins), or finishes (e.g. glazed finishes). Dry cleaning can also be a good option for textiles made from a variety of materials that may each respond differently if wet cleaned. It is imperative that all components of the textile (fabric, dyes, attachments, decoration) be insoluble in the dry cleaning solvent.

## Textile Safety Comes First

Naturally, commercial dry cleaners work to produce the cleanest possible article. With historic textiles, however, only overall cleaning can be achieved. Do not expect old oxidized stains to be removed by dry cleaning. What is most important is that these textiles are not damaged. It is essential to find a cooperative commercial dry cleaner who will agree to clean museum pieces according to particular specifications and who will take the responsibility, care, and time necessary to clean and

handle artifacts safely. This special attention may be more expensive than routine dry cleaning.

Dry cleaning usually involves pre-spotting, tumbling garments in a bath of dry cleaning solvent, extracting the solvent by spinning, tumble-drying, and finishing (steaming, pressing). Some establishments use one machine for the entire dry cleaning process; others use a separate machine for tumble-drying. Ideally, to clean a museum textile, the dry cleaner must be able to operate the machines manually in order to control conditions during cleaning. This may not be available from all dry cleaning establishments.

## Solvents, Temperature, and Detergent Concentration

Solvents used in commercial dry cleaning are acceptable for cleaning most museum pieces. Perchloroethylene (tetrachloroethylene) is used most often because it dissolves many common stains such as oil and grease.

Dry cleaners usually add a “charge” — water and a surfactant (detergent) — to the dry cleaning solvent. These help remove water-soluble stains caused by sugars, salts, and proteins such as blood. The water can cause fibre breakage and wrinkles.

However, a charge may be necessary to enhance the effectiveness of the solvent. The cleaning activity of the charge in the dry cleaning bath is affected by solvent temperature, detergent concentration, and type of detergent. Commercial cleaners use detergent concentrations of up to 2.5% on personal clothing, but 1–2% is adequate for museum textiles. The temperature of the dry cleaning bath should not exceed 25°C. Rinse the textile with a clear solvent following the use of a charge.

## Load Size and Cleaning Time

Ideally, only one piece should be cleaned per cycle. Ask the dry cleaner to limit the time a museum textile is in a machine. The mechanical action of the dry cleaning machine, or the movement of the textiles through the solvent in the basket, produces friction on the fabric and may result in fabric chafing.



Dry cleaners usually classify textiles into one of three groups:

- *Sturdy garments* such as raincoats, winter coats, pants, and jackets. These require a cleaning cycle of about 10 minutes.
- *Fragile garments* such as dresses, sweaters, blouses, and silks. These require a cleaning cycle of about 5 minutes.
- *Very fragile and unstable garments* such as those made of angora, rabbit, and dog hair. These should have a cleaning cycle of not more than 2 minutes.

Museum textiles must be cleaned even more gently than this last category.

## Preparing a Museum Textile for Dry Cleaning

When a cooperative dry cleaner has agreed to clean artifacts to museum specifications, show the cleaner the textile. Ask to see the dry cleaning machine and ask the dry cleaner to explain its functions and controls. Check the colour of the dry cleaning fluid in the sight glass. If detergent has been added, the fluid should be slightly yellow or amber; otherwise, it should be colourless. Together with the dry cleaner, test all colours of the textile and its attachments (e.g. buttons) with the dry cleaning fluid.

If both you and the dry cleaner agree that the textile and attachments will withstand dry cleaning, take the artifact back to the museum for the following preparations:

- Stitch a white or washfast fabric (e.g. cotton knit or sheeting fabric) over all hooks, clips, buttons, buckles, and metallic or other trimmings to prevent them from tearing and snagging the fabric during cleaning. Velcro can also be used for this purpose. Make a slit in the hooked side of a piece of Velcro and slip it over the attachment (e.g. a button). Place a piece of looped Velcro over the button and secure it to the hooked Velcro.
- Protect weak areas in the fabric (e.g. moth holes) by basting a piece of white or washfast fabric (e.g. cotton knit or sheeting fabric) through strong fabric around the weak area.
- Degrease tarnished metal (see CCI Notes 9/3 *The Cleaning, Polishing, and Protective Waxing of Brass and Copper*) before dry cleaning because the solvents may transfer discoloration from the tarnished metal to the textile. After dry cleaning, metal components can be polished and waxed.
- Some decorative elements may need to be detached for cleaning. Mark the site of their original placement with white thread for reattachment.

When the artifact is fully prepared for dry cleaning, make an appointment with the dry cleaner. Arrange for a day when there is enough time to concentrate totally on the museum piece. Mornings are often best because the dry cleaning fluid is most likely to be new or freshly distilled and will not yet have heated up from use. Stay

with the dry cleaner throughout the cleaning process and ask questions if you are unsure of what the dry cleaner is doing.

## Dry Cleaning Procedure

For a museum textile, a typical dry cleaning cycle should include the following steps:

1. Discuss pre-spotting with the dry cleaner. This process is often not warranted for museum textiles. Eliminate the step if determined to be unnecessary.
2. Place the textile in a protective net bag.
3. Place the net bag containing the textile in the stationary machine. Add prewashed, soft, white polyester or synthetic rags until the machine is one-third full. This will soften the fall of the textile as it tumbles in the machine.
4. Fill the machine to the highest level with new or freshly distilled dry cleaning fluid, with or without a charge.
5. Minimize agitation, e.g. rotate the machine for 1 minute, then stop it for 2 minutes.
6. Drain the dry cleaning fluid from the machine without using the extraction cycle.
7. Rinse by repeating steps 4, 5, and 6, using clean fluid. Do not add detergent to the rinse cycle.
8. Again, drain the machine for about 2 or 3 minutes using only the drain and pump.
9. Turn on the extraction cycle for 1 minute.
10. Dry, without tumbling, at a temperature of not more than 50°C. It may be necessary to add more clean white rags to the load during drying.
11. Finish the textile by pressing or steaming only if necessary. This step is typically not recommended for museum textiles.

## Bibliography

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