

Launder-O-Meter
AATCC Test Method 61-1996
Colorfastness to Laundering, Home and Commercial: Accelerated

What This Test is Used For:

This test evaluates colorfastness and staining potential of fabrics under accelerated wash condition that simulate five home washings. Five separate methods test different home washing conditions. Specimens can also be evaluated for abrasion resistance during laundering based on appearance.

Test options include:

- 1A – Evaluates colorfastness of textiles that will undergo hand washing.
- 2A – For fabrics that are expected to withstand repeated low-temperature machine washings.
- 3A – Looks at fabrics that are considered washable under vigorous activities.
- 4A – Evaluates the colorfastness of textiles in the presence of chlorine at low levels.
- 5A – Examines colorfastness in the presence of higher levels of chlorine.

For the purposes of the Quality Assurance class, you will be using Option 2A.

How This Test Works:

Samples are washed under specified conditions to replicate 5 home washings. The samples are then evaluated for color change, staining, and abrasion. Conditions for the appropriate procedure are determined and preprogrammed into the Launder-O-Meter or later listed in Launder-O-Meter conditions.

Scientific Testing Requirements:

Test specimens should be placed in humidity chamber prior to testing.

Equipment Needed:

Launder-O-Meter
A canister and 50 steel balls
0.225 g of laundry detergent (.15% of weight of liquor)
0.5 inch strip of the multi-fiber test fabric
150mL de-ionized water
6" x 2" sample
AATCC Gray Scale for Color Change
AATCC Gray Scale for Staining

Procedure:

Sample Preparation:

1. Cut a 6" by 2" sample, one sample per person.
2. Sew or staple multi-fiber test fabric along one edge of the technical face of the sample. Multi-fiber test fabric should run along the length of the sample. Set sample aside.
3. Add 150mL of water and 0.225g of detergent to each canister.
4. Add 50 steel balls into the canister.
5. Place black gasket into canister lid. Press Teflon liner into lid (liner will be slightly too large and should cup towards the outside of the cap). Close lid.
6. Clamp the canisters into the Launder-O-Meter. Evenly distribute them on each of four sides. If necessary, add more canisters to even out the number.
7. Star the rotor and run it for at least 2 minutes (until temperature reaches 49° C) to preheat the canisters and solution.

Loading the Launder-O-Meter:

1. With a row of specimens in the upright position, unclamp the cover of one canister, drop in a well-crumpled test specimen, and replace the cover.
2. Continue adding specimens to each canister in the row. When finished, re-clamp the row.
3. Manually turn rotor to new row. Repeat until all samples are loaded.

Start the Launder-O-Meter and allow to run for 45 minutes.

Rinsing, Extracting, and Drying

1. Remove the canisters and empty the contents into beakers, keeping each specimen separate.
2. Rinse each test specimen three times, in beakers, in de-ionized water for one-minute periods with occasional stirring or hand squeezing.
3. Blot to remove excess water.
4. Dry the specimens in the oven (71° C/160° F).
5. Allow specimens to conditions at standard humidity and temperature for at least one hour before evaluating.

Preparation for Evaluation

1. Trim off raveled yarns and lightly brush off any loose fiber and yarn on the fabric surfaces.
2. For pile fabric specimens, brush the pile in the required direction to restore them as nearly as possible to the same pile angle as the original control sample.
3. Specimens should be smoothed and flattened if necessary.

Color Change Evaluation

1. Compare sample to control fabric.
2. Use the AATCC Gray Scale for Color Change to evaluate the results. All group members should help to rate each sample.
3. Keep sample. Color change will be quantitatively measured using spectrophotometer at a later date.

Staining Evaluation

1. Compare sample to control fabric.
2. Use the AATCC Gray Scale for Staining. All group members should help to rate each sample.

Report:

Include the following information in your report:

1. State the test number used.
2. State the basic conditions of the test. (i.e. – sample size, temp., etc.)
3. Report the grade number determined for color change and the staining grade numbers.
4. State the scales that were used.
5. Report the specific fibers used in the multi-fiber test fabric.
6. If a knit, report is bleached cotton test fabric was used to prevent curling.
7. Report which laundering machine was used.