

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2010
 DateRun: 08/18/2010
 Experimenters: Jason Marshall, Timothy Weil
 ClientType: Cleaner Manufacturer
 ProjectNumber: Project #1
 Substrates: Ceramics, Fiberglass, Chrome, Porcelain
 PartType: Coupon
 Contaminants: Films, Soaps
 Cleaning Methods: Manual Wipe
 Analytical Methods: Gravimetric
 Purpose: To evaluate the supplied products for bathroom cleaning using manual cleaning

Experimental Procedure: The supplied cleaning products were used at the recommended concentration. Preweighed chrome, ceramic, fiberglass and porcelain, coupons were coated with SSL Soil 1 (Bathroom soap scum: All-in-one shampoo and conditioner 28.6%, Dry skin lotion 21.4%, Liquid hand soap 21.4%, Liquid body wash 14.3%, Deodorant bar soap 7.2% and water 7.1%.) using a handheld swab and allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added. Three coupons were placed into a Gardner Straight Line Washability unit. A Wypall X60 reinforced wipe was attached to the cleaning sled and soaked with 5-7 sprays of cleaning solutions. Each coupon was sprayed 7-10 times with the same cleaning solution. The solution was allowed to penetrate for 30 seconds followed by cleaning in the SLW unit for 20 cycles (~33 seconds).

At the end of the cleaning, coupons were sprayed with tap water and wiped dry for 5 cycles using a fresh paper towel attached to the Washability unit. Final weights were recorded, and efficiencies were calculated.

Results: The supplied cleaner was still left residue behind after the water rinse. The conventional product had less residue than the supplied cleaner. Both products removed less than 85% with the modified cleaning process. Both improved over the previous trial without the spray rinse. The table lists the amount of soil added, the amount remaining and efficiency for each coupon cleaned.

| Cleaner | Initial wt | Final wt | % Removed |
|----------------------------|------------|----------|-----------|
| Soft Scrub - ceramic | | | |
| | 0.0567 | 0.0123 | 78.31 |
| | 0.1138 | 0.0161 | 85.85 |
| | 0.2213 | 0.0149 | 93.27 |
| Soft Scrub - chrome | | | |
| | 0.1147 | 0.0430 | 62.51 |
| | 0.1549 | 0.0355 | 77.08 |
| | 0.1157 | 0.0383 | 66.90 |
| Soft Scrub - fiberglass | | | |
| | 0.1098 | 0.0117 | 89.34 |
| | 0.1131 | 0.0227 | 79.93 |
| | 0.1237 | 0.0214 | 82.70 |
| Soft Scrub - porcelain | | | |
| | 0.0490 | 0.0065 | 86.73 |
| | 0.0502 | 0.0051 | 89.84 |
| | 0.0624 | 0.0076 | 87.82 |
| NewLeaf Bathroom - ceramic | | | |
| | 0.0964 | 0.0299 | 68.98 |
| | 0.0207 | 0.0085 | 58.94 |
| | 0.2914 | 0.0427 | 85.35 |
| NewLeaf Bathroom - chrome | | | |
| | 0.0996 | 0.0086 | 91.37 |
| | 0.1156 | 0.0087 | 92.47 |

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|-------------------------------|--------|--------|-------|
| | 0.1152 | 0.0093 | 91.93 |
| NewLeaf Bathroom - fiberglass | | | |
| | 0.1498 | 0.0245 | 83.64 |
| | 0.1381 | 0.0604 | 56.26 |
| | 0.1322 | 0.0437 | 66.94 |
| NewLeaf Bathroom - porcelain | | | |
| | 0.1425 | 0.0462 | 67.58 |
| | 0.0730 | 0.0146 | 80.00 |
| | 0.0737 | 0.0350 | 52.51 |

Summary:

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|----------------------|---|---------------|--------------------|--------------------------|----------------------|
| Substrates: | Ceramics, Fiberglass, Chrome, Porcelain | | | | |
| Contaminants: | Films, Soaps | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Henkel Corporation | Soft Scrub with Bleach | 100 | 81.69 | <input type="checkbox"/> | |
| New Leaf Clean LLC | New Leaf Bathroom Cleaner | 100 | 74.66 | <input type="checkbox"/> | |

Conclusion:

The supplied product had an overall average efficiency less than 85% but compared consistently with the thicker conventional cleaning product.