

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006
DateRun: 03/10/2006
Experimenters: Jason Marshall
ClientType: Cleaner Manufacturer
ProjectNumber: Project #1
Substrates: Ceramics, Fiberglass, Chrome
PartType: Coupon
Contaminants: Films, Soaps
Cleaning Methods: Manual Wipe
Analytical Methods: Gravimetric
Purpose: To evaluate supplied product for bathroom cleaning applications.

Experimental Procedure: The two supplied cleaning product was diluted to vendor recommended concentrations for bathroom cleaning using DI water (3.125 and 1.56%). Water was used as well. Nine preweighed fiberglass, ceramic and chrome coupons were coated with SSL Soil 1 (Bathroom soap scum: Vaseline Dry Skin Lotion 21.4%, Dial Clean Rinsing Body Wash 14.3%, Market Basket Shampoo & Conditioner (Pert)28.6%, Soft Soap Natural Liquid hand soap 21.4%, Coast Deodorant bar soap 7.2% and Water 7.1%) using a hand held 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 Professional Painter's Rag 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 cleaning unit was run for 20 cycles (~33 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded, efficiencies were calculated and recorded.

Results: The table below lists the amount of soil added, remaining and efficiency for each substrate and each coupon.

| Cleaner | Initial wt | Final wt | % Removed |
|-----------------------|------------|----------|-----------|
| Perma 180 Ceramic | 0.1207 | 0.0198 | 83.60 |
| | 0.1942 | 0.0365 | 81.20 |
| | 0.1590 | 0.0335 | 78.93 |
| Perma 1040 Ceramic | 0.2435 | 0.0878 | 63.94 |
| | 0.1970 | 0.0642 | 67.41 |
| | 0.1976 | 0.0589 | 70.19 |
| Water Ceramic | 0.2561 | 0.1491 | 41.78 |
| | 0.4360 | 0.2000 | 54.13 |
| | 0.2085 | 0.0721 | 65.42 |
| Perma 180 Fiberglass | 0.3395 | 0.0586 | 82.74 |
| | 0.4277 | 0.0684 | 84.01 |
| | 0.3446 | 0.0687 | 80.06 |
| Perma 1040 Fiberglass | 0.3391 | 0.0704 | 79.24 |
| | 0.4126 | 0.0867 | 78.99 |
| | 0.3355 | 0.0565 | 83.16 |
| Water Fiberglass | 0.4324 | 0.1620 | 62.53 |
| | 0.3794 | 0.0890 | 76.54 |
| | 0.3828 | 0.1545 | 59.64 |
| Perma 180 Chrome | 0.1441 | 0.0170 | 88.20 |
| | 0.1561 | 0.0142 | 90.90 |
| | 0.2653 | 0.0236 | 91.10 |
| Perma 1040 Chrome | 0.1651 | 0.0361 | 78.13 |
| | 0.1709 | 0.0210 | 87.71 |

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| | 0.3022 | 0.0379 | 87.46 |
| Water Chrome | 0.2664 | 0.0548 | 79.43 |
| | 0.2321 | 0.0607 | 73.85 |
| | 0.1780 | 0.0382 | 78.54 |

Summary:

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|----------------------|---|------------------------------|--------------------|-------------------------------------|----------------------|
| Substrates: | | Ceramics, Fiberglass, Chrome | | | |
| Contaminants: | | Films, Soaps | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Perma Inc | Geo Clean 180 | 3.125 | 84.53 | <input checked="" type="checkbox"/> | |
| Perma Inc | Easy Mix Foaming Restroom Cleaner #1040 | 1.56 | 77.36 | <input type="checkbox"/> | |
| Water | Water | 100 | 65.76 | <input type="checkbox"/> | |

Conclusion:

Only one product, Perma 180, removed an average of 85% of the bathroom soil at the specified concentrations.