

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021

DateRun: 03/11/2021

Experimenters: Ross Goding, Nicole Kebler

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Ceramics, Wood, Vinyl Composite Tiles

PartType: Coupon

Contaminants: Inks, Dirt, Oil

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric, Gloss-Color Meter

Purpose: To analyze the efficiency of PathoSans All Purpose Cleaner for the removal of DCC-17 from 3 substrates.

Experimental Procedure: First, a total of 18 coupons were obtained, 9 each for the two supplied cleaners (3 wood, 3 vinyl, 3 ceramic). The initial weights of the tiles were acquired to use as a standard and also determine how much soil was removed after cleaning. The coupons were then soiled using 1.0 g of DCC-17. The soiled coupons were then allowed to sit overnight for 24 hours in order for the soil to settle. The next day, the dry dirty weight was acquired and recorded. We used the specified cleaners to test their effectiveness on all the coupons. The coupons were cleaned as follows. 3 coupons were placed in a straight line within the SLW machine. A Wypall wipe was attached to the cleaning sled and soaked with 2 sprays of the cleaner being used for that run (Pathosans All Purpose cleaner and Pinesol). Each coupon was sprayed 2 times with the same solution. The SLW unit used 20 cycles for cleaning. At the end, the cleaned coupons had their final weights taken and recorded along with efficiencies calculated.

Cleaners Evaluated:

1. Pinesol
2. PathoSans

Results: Both Pathosans cleaner and Pinsol show the same result of 89% removal for overall product removal. Pinsol being cleaner A and having a 0.23% better removal rating than Pathosans cleaner. Wood substrate removal rating was low because the wood coupons used were slanted like trim inside a home. Thus, the SLW unit had trouble reaching all portions of this coupons surface.

| Cleaner   | Substrate | Initial wt. of con. | Final wt. of con. | % Removal | Average % removal | Product removal |
|-----------|-----------|---------------------|-------------------|-----------|-------------------|-----------------|
| Pinesol   | Wood      | 1.10                | 0.41              | 62.92     | 69.10             | 89.46           |
|           |           | 0.78                | 0.32              | 58.98     |                   |                 |
|           |           | 1.61                | 0.24              | 85.41     |                   |                 |
|           | Vinyl     | 0.77                | 0.02              | 98.01     | 98.22             |                 |
|           |           | 1.51                | 0.04              | 97.63     |                   |                 |
|           |           | 1.22                | 0.01              | 99.03     |                   |                 |
|           | Ceramic   | 1.19                | -0.05             | 104.02    | 101.05            |                 |
|           |           | 1.69                | 0.00              | 99.99     |                   |                 |
|           |           | 1.56                | 0.01              | 99.14     |                   |                 |
| PathoSans | Wood      | 1.08                | 0.33              | 69.97     | 68.34             | 89.23           |
|           |           | 0.99                | 0.41              | 58.66     |                   |                 |
|           |           | 1.09                | 0.26              | 76.40     |                   |                 |
|           | Vinyl     | 1.24                | 0.01              | 99.32     | 99.18             |                 |
|           |           | 0.78                | 0.01              | 98.57     |                   |                 |
|           |           | 2.03                | 0.01              | 99.64     |                   |                 |
|           | Ceramic   | 1.10                | 0.00              | 99.85     | 100.18            |                 |
|           |           | 1.20                | 0.00              | 99.80     |                   |                 |
|           |           | 0.65                | -0.01             | 100.90    |                   |                 |

| Cleaner | Substrate | Initial | Dirty | Clean |
|---------|-----------|---------|-------|-------|
| Pinesol | Wood      | 55.66   | 25.78 | 44.27 |
|         |           | 57.51   | 30.28 | 48.57 |

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|           |         |       |       |       |
|-----------|---------|-------|-------|-------|
| PathoSans | Vinyl   | 55.79 | 29.59 | 49.86 |
|           |         | 80.82 | 43.08 | 68.77 |
|           |         | 81.20 | 27.37 | 64.77 |
|           |         | 79.10 | 47.36 | 65.77 |
|           | Ceramic | 89.71 | 38.55 | 88.92 |
|           |         | 90.20 | 32.53 | 89.32 |
|           |         | 89.35 | 41.48 | 89.09 |
|           | Wood    | 58.12 | 28.83 | 54.64 |
|           |         | 56.28 | 31.49 | 47.64 |
|           |         | 55.73 | 30.55 | 53.39 |
|           | Vinyl   | 79.93 | 41.88 | 61.89 |
|           |         | 79.59 | 37.10 | 68.19 |
|           |         | 81.63 | 38.15 | 71.80 |
|           | Ceramic | 88.47 | 43.56 | 88.15 |
|           |         | 88.99 | 55.82 | 87.65 |
|           |         | 85.17 | 30.96 | 88.74 |

Summary:

|                      |                      |                                       |                    |                                     |  |
|----------------------|----------------------|---------------------------------------|--------------------|-------------------------------------|--|
| <b>Substrates:</b>   |                      | Ceramics, Wood, Vinyl Composite Tiles |                    |                                     |  |
| <b>Contaminants:</b> |                      | Inks, Dirt, Oil                       |                    |                                     |  |
| <b>Company Name:</b> | <b>Product Name:</b> | <b>Conc.:</b>                         | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b>   |
| PathoSans            | PathoClean           |                                       |                    | <input checked="" type="checkbox"/> | PathoSans was effective for the removal of DCC-17 on wood, ceramic and vinyl |

Conclusion:

Both cleaners average cleaning efficiencies were recorded. They both have the same percentage of cleaning efficiency with a percentage of 89%. From the observed wood coupons, the slant of the wood may have influenced the poor cleaning ability by the SLW machine. The products tested meet the satisfactory cleaning rating which is 85%. Since both cleaners were above this level, they did a great job at removing the soil.