

## Laundry System Evaluation using EMPA #105 Swatches

### AS 4146-2024 Wash Performance - Colour Measurement

- Control strips of EMPA Style #105 test pieces are available for purchase through AWTA Product Testing.
- Each strip consists of 5 swatches treated with bleach then stained with carbon black, mineral oil, blood, cocoa and red wine.
- The laundry washes the strips with regular soiled loads in the system to be evaluated, or to that typically used in day-to-day practice, and then they are returned to AWTA for assessment.
- The following properties are evaluated using a spectrophotometer:
  - Whiteness (with / without UV)
  - Intrinsic greying
  - Intrinsic yellowing
  - Percentage soil removal of each of the four stains on the test swatch.



The efficiency of the wash treatment can be assessed against performance indicators detailed in AS 4146-2024.

#### Clause 8.2 Performance indicators after single wash

- The increase in the degree of whiteness of an unsoiled fabric due to a single wash-dry cycle shall be greater than 10*
- Intrinsic greying of an unsoiled fabric due to a single wash-dry cycle shall be less than 2 for each wash formula used in the laundry.*
- Intrinsic yellowing of an unsoiled fabric due to a single wash-dry cycle shall be less than 2 for each wash formula used in the laundry*
- Percentage of soil removal after a single wash-dry cycle shall –*
  - Be greater than 28% for the test panel soiled with artificial carbon black and mineral oil (indicating the efficiency of the detergent and mechanical action)*
  - Be greater than 90% where blood stains are expected in the wash cycle, or greater than 50% where bloodstains are not expected*
  - Be greater than 22% for the test panel with soiled chocolate milk stains (indicating the ability of the wash process to remove protein pigment soil)*
  - For the test panel soiled with artificial red wine (indicating the effectiveness of the bleach used in wash process):*
    - For lightly soiled linen,*
      - be less than 50% where bleach was used*
      - be greater than 20% where bleach was not used*
    - For heavily soiled linen,*
      - be less than 90% where beach was used*
      - be greater than 50% where bleach was not used*

Delivery Address	Further information
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**IMPORTANT NOTE:** That by submitting samples for testing **YOU AGREE** that the resulting testing shall be performed under our terms and conditions for testing and consulting services: [www.awtaproducttesting.com.au/index.php/about/terms-and-conditions](http://www.awtaproducttesting.com.au/index.php/about/terms-and-conditions)