



Scientific Evaluation of the Excel Hardware-Speco Collaboration for Sustainable Hygiene Solutions

Overview

The collaboration between Excel Hardware, a leading hardware solution provider, and Speco, a leader in smart hygiene technologies, marks a groundbreaking venture into the realm of sustainable and hygienic hardware solutions.

Objective

This innovative project focuses on exploring the efficacy of integrating Speco's eco-friendly technology into Excel Hardware's stainless steel hinges. The objective is to merge functionality with hygiene, leading the way to a cleaner and more environmentally friendly future.

The underlying reasons for this initiative are:

- Stainless steel hinges, being frequently touched surfaces, can harbor various microbes, including bacteria, leading to health risks. Prioritizing hygiene in these areas is crucial for reducing germ exposure and fostering healthier environments.
- Utilizing Speco's green technology in this context not only promotes enhanced hygiene but also represents a significant stride towards sustainability. This endeavor aims to minimize environmental impact through innovations that reduce the need for frequent cleaning and the use of harsh chemicals, thereby contributing to a cleaner living environment.
- The cleanliness of hardware like hinges significantly affects the overall aesthetic and comfort of a space. Keeping them in pristine condition enhances the environment, offering a more pleasing and comfortable setting.

Methodology

The project includes:

- Assessing the surface hygiene of different types of stainless steel hinges before and after applying Speco's technology.
- Determining the effectiveness of the technology in reducing microbe counts.
- Evaluating changes in hinge quality post-treatment, including texture, color, and durability.
- Providing recommendations based on the test results.

Test Parameters

The test involves a comparison of hinges before and after treatment, focusing on surface cleanliness. A 5-minute curing time was allowed post-treatment before assessment.



A surface hygiene test kit monitor (LuciPac A3) was used for verification, which has AOAC-RI PTM Certification (License No 051091).



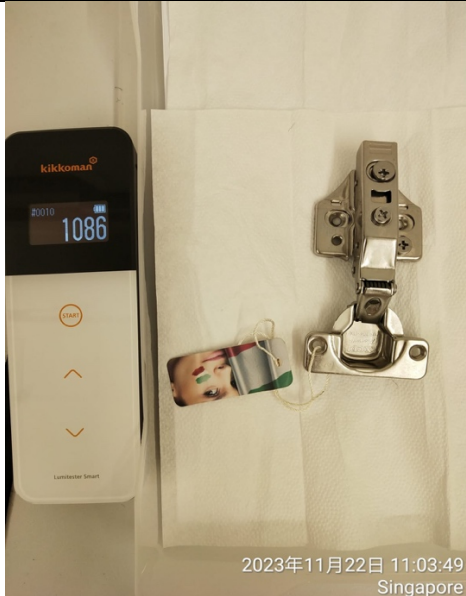

Test Results Summary

The Comparative Analysis showed significant improvements of **93 – 95% deduction in micro-organisms** in hygiene post-treatment. Detailed evaluations will provide insights into the effectiveness of the technology on different types of stainless steel hinges.

Sample Hardware 1:

	Before Treatment	After Treatment
<p>Swab Test Result</p>		
<p>Remarks</p>	<p><u>Bacteria count:</u> 858</p> <p>The original state of the joints has a relatively high bacteria count</p>	<p><u>Bacteria count:</u> reduces by 93% from 858 to 67 within 5 minutes of curing time.</p>

Sample Hardware 2:

	Before Treatment	After Treatment
Swab Test Result	 <p>2023年11月22日 11:03:49 Singapore</p>	 <p>2023年11月22日 11:43:21 Singapore</p>
Remarks	<p><u>Bacteria count</u>: 1086</p> <p>The original state of the joints has a relatively high bacteria count</p>	<p><u>Bacteria count</u>: reduces by 95% from 1086 to 45 within 5 minutes of curing time.</p>