

Class 100 Compatibility Protocol

Objective: To test and evaluate three (3) samples of ergonomic keyboard wrist supports for their suitability for use in a class 100 Clean Room (C/R) environments.

Client: Softworqs, A Division of UC Industries

Contact: Spencer Rogers, 626-913-9999

1. Methodology: To establish that the samples under actual (simulated) use conditions do not add enough particles in the ½ micron range to compromise a class100 C/R. There are three possible sources of particles from the samples as follows:
 - a. Released from the surface material by touching or rubbing the surface.
 - b. Expelled along with air from the inside fill material caused by pressure on the pad.
 - c. Same as above if there is a cut or puncture in the surface material.
2. Protocol: All of the following testing is conducted in Class 100 C/R environment:
 - a. Sample surfaces are cleaned using distilled water and C/R compatible materials.
 - b. Samples are setup on a wire shelf 4' from and immediately below a HEPA filter.
 - c. A particle counter intake sensor is located down stream (below) the shelf: (The most likely path for particles from the test sample):
 - d. The room is allowed to stabilize to a class 100 condition to establish a base line under "quiet" conditions.
 - e. Next a gowned and gloved operator is introduced into the room and again a base line is established with him in the room.
 - f. Next the operator simulates using the sample as follows:
 - i. Running his hands and wrists over the surface of the sample while the particle counter samples the downwind air stream.
 - ii. Compressing and releasing the sample while the particle counter monitors as above.
 - g. The above tests are continued over a long enough period of time to see a stable performance from the samples.
3. A final report will certify these findings.

Class 100 Compatibility Certification

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 - g. The above tests are continued over a long enough period of time to see a stable performance from the samples.
 - h. These set-ups are photographed below (Fig. 1 & 2.).

Fig. 1 Test Setup (Background Particle Counts- No Activity)

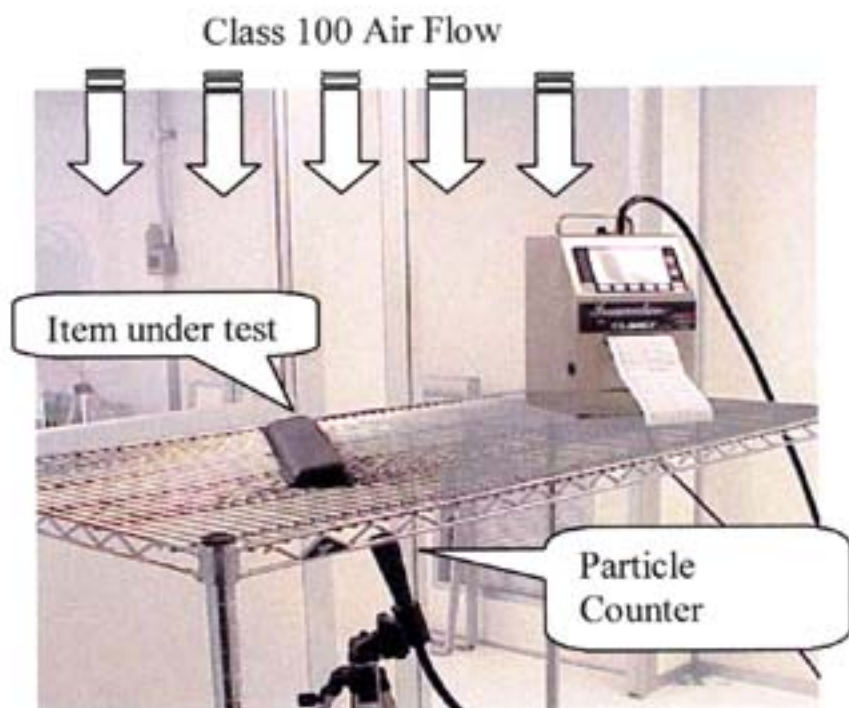
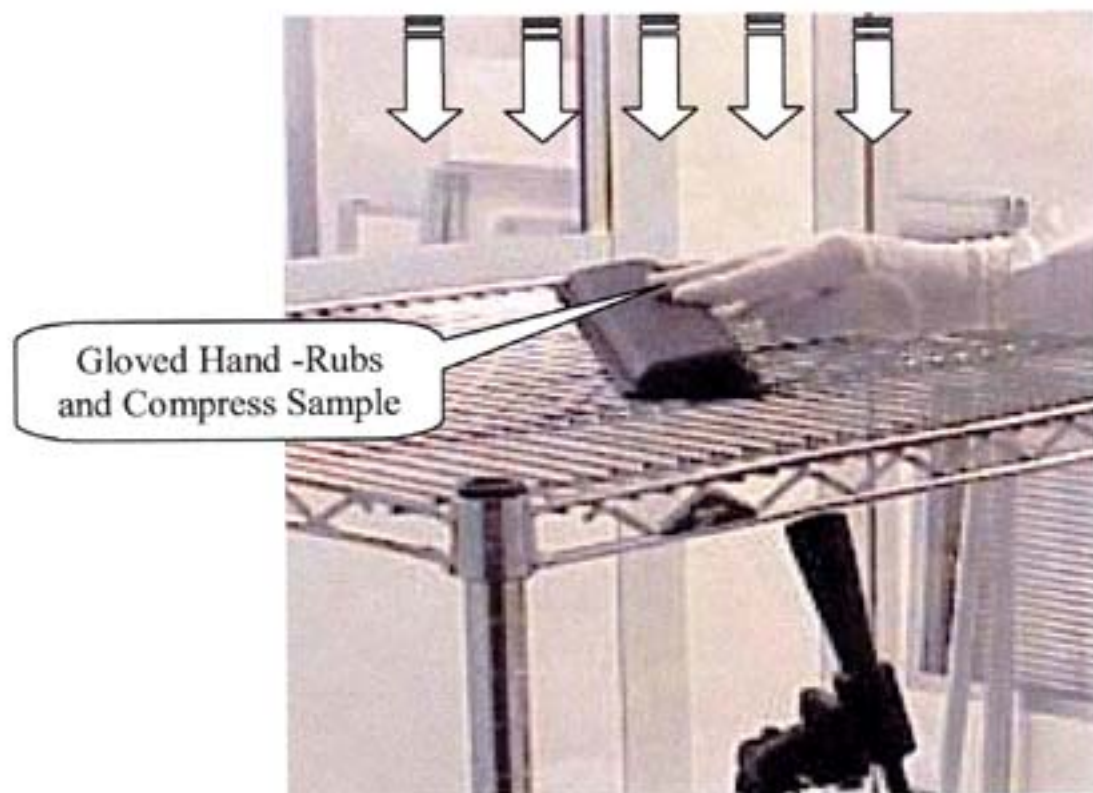


Fig. 2 Setup For Testing (With Activity)



TEST RESULTS (see note below)

1/2 MICRON COUNTS

HIGH

LOW

SAMPLE # 1

(Black wrist support Aprox. 1" x 3" x 18")

Pull Down (no Activity)	27	6
Rubbing activity	63	1
Pressing activity	6	0

Sample #2

(Blue Gel wrist support Aprox. 1" x 3" x 18")

Pull Down (no Activity)	6	1
Rubbing activity	7	3
Pressing activity	36	11

Sample #3

(Blue Gel mouse pad Aprox. 1" x 3" x 18"d)

Pull Down (no Activity)	36	11
Rubbing activity	29	10
Pressing activity	29	17

Note: Particle Counter used is a Climet CI-500 Laser Particle Counter Model CI-500 Serial # 011605. Calibrated on 3/21/03, next calibration 3/21/04

Conclusions:

- We consider these tests to be very rigorous for the following reasons.
 - The location of the sensor was only 6" from the object and in the most sensitive location (directly down stream from it).
 - Even in this location the counts never approached 100 per cu ft.
 - A good percentage of the detected particles likely came from the glove and arm of the operator.
- In every respect these items are suitable for use in a Class 100 Clean Room Environment.

Test Conducted by:
Robert Green

Test Report by:
K. S. Barton

Date 10/20/03