

Cleanroom Cleaning Process Guide



Recommended Training

Pegasus' general training program includes the following topics:

- The Cleanroom Environment
- Cleanroom Terminology
- ISO 14644.1 Definitions
- General Cleanroom Protocol
- Gowning Protocol and Procedures
- Entry and Exit Procedures
- Equipment and Supply Usage and Care
- Contamination Control
- Personal Hygiene
- SOP review and procedures
- Basic Microbiology Particle and Sterile Cleaning
- Static Control
- Documentation

Pegasus Cleanroom Services

Standard Cleanroom Cleaning Training Program

Session 1

- Types and Classifications of Controlled Environments (ISO 14644.1)
- The Effects of People and Movement In A Controlled Environment
- Appropriate Cleanroom Apparel For Various Environments and ISO Levels (with gowning demonstration)
- General Cleanroom Protocol, Regulations, and Safety (with basic MSDS, HAZMAT & OSHA instruction)
- Basic Cleanroom Terminology and Theory
- Review

Session 2

- Instructional Tour and “Visual Terminology”
- Entry, Exit, Tacky Mats, Air Showers, and Pass-throughs
- Basic Gowning and Gloving, Etc. (Part 1 – ISO Classes 5 - 8)
- Types, Use and Care of Cleanroom Cleaning Equipment, Supplies, and Chemicals
- Differing Requirements of Particle and Aseptic Environment Cleaning
- Communication, Reporting and Activity Logs

Session 3

- Gowning and Gloving, Etc. (Part 2 – Aseptic Technique)
- Chemical Uses, Dwell Time Protocol, Recording, and Safety
- Directional Cleaning (Based on room set-up and airflow)
- Ongoing / Level I Cleaning: Focus on Horizontal Surfaces
- Semi-full / Level II Cleaning: Focus on Vertical Surfaces and Walls (including glass partitions)
- Full / Level III Cleaning: Focus on Ceiling (including vents and lights)

Session 4

Frequent and Ongoing Monitoring of Work Performance, Reviews, and Updates as Needed.

Pegasus University Training

Each member of the Pegasus team receives an additional 12 hours per year of ongoing classroom training. The purpose of the continuing education plan is to reinforce the Pegasus Core Values, review Customer Satisfaction Results, and reinforce Pegasus commitment to safety. Continuing education training topics include:

- Hard surface detergency and disinfection
- Concrete floor care
- Leadership development
- Personal development

All training follows the Adult Experiential Learning Theory of Tell, Show, Do, and Review.

- TELL – Employee receives explanation of what is to be done
- SHOW - Trainer demonstrates what is to be done
- DO – The employee performs the task on their own
- REVIEW – The employee then reviews the training with the trainer to reinforce understanding

Training content and exams meet Building Service Contractors Association International (BSCAI) curriculum designed to develop highly skilled cleaners, managers and supervisors, in the building service industry.

Standard Cleanroom Protocol

General Cleanroom Regulations For Cleaning Personnel

All professional cleaning personnel should be aware and follow these regulations at all times.

1. All personal items such as keys, watches, rings, earrings, and other piercings, matches, lighters and cigarettes should be stored in a personal locker (or other designated storage area) outside the gowning room.
2. Valuable personal items such as wallets may be permitted in the cleanroom provided they are never removed from beneath the cleanroom garments.
3. No eating, smoking, or chewing gum allowed inside the cleanroom.
4. Only garments approved for the specific cleanroom involved should be worn when entering.
5. No cosmetics shall be worn in the cleanrooms. This includes rouge, lipstick, eye shadow, eyebrow pencil, mascara, eyeliner, false eyelashes, fingernail polish, hair spray, mousse, or the heavy use of aerosols, after shave lotions, colognes, and perfumes.
6. Only approved cleanroom paper shall be allowed in the cleanroom.
7. Approved ballpoint pens shall be the only writing tool used.
8. Fast motions such as running, walking fast, or horseplay is prohibited.
9. No one who is physically ill, especially with respiratory or stomach disorders, should enter a controlled environment.

Sample Cleanroom Process Checklist

- Controlled Environments Standard Operating Procedures -

The purpose of the following cleaning specifications for the controlled environment areas are to provide the customer and cleaning staff with a clear description of all work that is to be performed and the frequency of each task.

Documentation will be completed as required for cGMP protocol

Ongoing (Level 1 Cleaning)

- OC-1 Empty waste receptacles, clean, and replace liners
- OC-2 Vacuum floors with a cleanroom certified vacuum cleaner (HEPA / ULPA filtration)
- OC-3 Wipe down designated horizontal surfaces using approved sanitizer solution
- OC-4 Wipe down tops of designated equipment.
- OC-5 Mop floors with cleanroom certified bucket, mop and mop head
- OC-6 Remove / change tacky mats per customer's protocol
- OC-7 Communicate with customer and document attendance and procedure per customer protocol
- OC-8 Follow customer's protocol when entering and exiting the controlled environment
- OC-9 Follow customer's protocol for clothing / covering (gowning, etc.) when in the cleanroom
- OC-10 Follow proper protocol for the type and care of cleaning equipment used in the cleanroom
- OC-11 Follow proper protocol for all supplies and solutions used for cleaning in the cleanroom

Semi-full Cleaning (Level 2 Cleaning)

Beginning at the farthest point in the room and working towards the exit door...

- SC-1 Empty waste receptacles clean and replace liners
- SC-2 Vacuum / roll and wipe down walls from top to bottom
- SC-3 Wipe air returns and filter grills
- SC-4 Clean all windows
- SC-5 Wipe down designated equipment
- SC-6 Wipe down horizontal surfaces
- SC-7 Wipe down vertical surfaces
- SC-8 Wipe down benches
- SC-9 Wipe down open shelving
- SC-10 Wipe down tables and legs
- SC-11 Wipe down utility carts
- SC-12 Clean doors, door jams, and thresholds
- SC-13 Vacuum floors using cleanroom certified vacuum cleaner(s)
- SC-14 Mop floors
- SC-15 Remove dirty tacky mats per customer's protocol
- SC-16 Communicate with customer and document procedure per customer protocol
- SC-17 Follow customer's protocol when entering and exiting the controlled environment
- SC-18 Properly maintain cleaning equipment and supplies

Full Cleaning (Level 3 Cleaning)

Beginning at the farthest point in the room and working towards the exit door...

- FC-1 Empty waste receptacles clean and replace liners
- FC-2 Vacuum / roll and wipe ceilings, lights, lenses and vent covers
- FC-3 Vacuum / roll and wipe down walls from top to bottom
- FC-4 Wipe air returns and filter grills
- FC-5 Clean all windows
- FC-6 Wipe down designated equipment
- FC-7 Wipe down horizontal surfaces
- FC-8 Wipe down vertical surfaces
- FC-9 Wipe down benches
- FC-10 Wipe down open shelving
- FC-11 Wipe down tables and legs
- FC-12 Wipe down utility carts
- FC-13 Clean doors, door jams, and thresholds
- FC-14 Vacuum floors using cleanroom certified vacuum cleaner(s)
- FC-15 Mop floors
- FC-16 Remove dirty tacky mats per customer's protocol
- FC-17 Communicate with customer and document procedure per customer protocol
- FC-18 Follow customer's protocol when entering and exiting the controlled environment
- FC-19 Properly maintain cleaning equipment and supplies
- FC-20 Wipe down all ceilings

Cleanroom Supplies and Equipment List

TruCLEAN Sponge Mop

Designed specifically for use in clean room and sterile environments, the TruCLEAN Sponge Mop is ideal for cleaning and disinfecting applications requiring high absorbency and very low particulate generation.



Clean and disinfect a full 40cm (16") x 12.7cm (5") area in a single pass. Unlike self-wringing sponge mops that contact surfaces only with the leading edge, our exclusive swivel mop frame maintains total surface consistently delivering a thorough and even application onto the surface. Thick-bodied sponge protects delicate surfaces.

Made of a specially formulated grade of flexible polyurethane Foam, the TruCLEAN Sponge Mop has excellent chemical and microbial resistance. Single cell structure has superior liquid retention and effectively captures minute particles. Exceptional abrasion and tear resistance. Conforms to irregular surfaces. Rinses clean and dries quickly. Compatible with gamma, ETO and autoclave sterilization.

TruCLEAN Cover and Wipe

Meticulously manufactured within a Six Sigma Quality facility, the TruCLEAN Cover provides an unprecedented level of quality assurance and cleaning performance. Clean room laundered and twice packaged for use in sterile environments.



TruCLEAN Cover fits securely over TruCLEAN Yarn Mop or Sponge Mop. Together, they provide a simple and efficient vehicle for applying cleaning solutions to large surface areas without compromising particulate control and wiping protocols. Excellent surface coherence. The soft cover is knitted from 100% continuous Filament polyester. The doubleknit, no-run interlock design guarantees the maximum in abrasion resistance. Ultra-low particle generation and extractables. Excellent chemical and microbial resistance.

TruCLEAN Cover is compatible with gamma, ETO and autoclave sterilization. The TruCLEAN Cover is the easiest, most practical and most economical way to clean, disinfect and preserve the integrity of any clean room environment.

SlimT Double Bucket Cart



This simple and effective double bucket system is comprised of an electropolished stainless steel frame that easily transports two 6 gallon buckets. Excellent maneuverability is achieved with the 360° rotation of the caster wheels. The generous 19" width of the buckets makes them suitable for use with a variety of mop heads. The entire unit, including the polyethylene buckets, is autoclavable.

SlimT Double Bucket Cart



The key unit for all Micronova mopping systems. The electropolished stainless steel handles have Delrin components giving strong all-around connections and hardwearing properties. Available in extendible or single length versions. The entire handle can be autoclaved.

Cleanroom Polycell Wiper



A spunlace non-woven cellulose (55%) and polyester (45%) blended wipe. This is the workhorse wipe for use in Class 10,000+ (ISO 7+) areas. High absorbency and low abrasion with minimal extractable and moderate particle counts. This is a great wipe for general purpose and environmental/facility cleaning, with the added benefit of cost economy.

Niflisk Cleanroom Portable Vacuum



Vacuum cleaning is generally an accepted procedure in clean rooms down to class ISO 5 (ISO 4). Most of the IVT 1000 CR parts can be totally sterilized before introduction into clean room environment. The IVT 1000 CR models are manufactured in stainless steel AISI 316. (wheel base in AISI 304) The IVT 1000 CR H model offers a upstream HEPA H13 filter, and a downstream ULPA U15 filter for stopping carbon particulate generated by the motor.

Paper dust bag or safe bag system for quick and easy disposal of material. All stainless construction 'Easy to clean.' Can be autoclaved at 121° C to avoid contamination. Equipped with ULPA U15 exhaust filtration meets ISO std.(4)5 in clean room.

Performance Based Quality Management

The three key elements of successful Performance Quality Management follow these three imperatives to ensure success:

- Define It
 - Measure It
 - Manage It
-
- Quality inspectors use mobile devices to conduct all inspections.
 - Inspections are performed on a regular basis to make sure that the services are being delivered in accordance with the scope of work.
 - Inspection results are available for customer to review to ensure that the cleaning services are performing to the scope of work.



Measuring the quality of cleaning is achieved through a checking of the items on the scope of work; review of defects noted previously, interviews and surveys with customer to gage their perception of the facility's cleanliness.

The elements of the measurement and management process were established from Pegasus 50 plus years of experience and philosophy of continual improvement