

1 OUTDOOR SOIL SOURCES

Airborne particulates originate outside the facility and enter continuously.

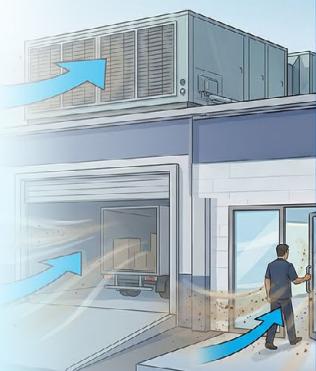
- Dust and fine particulates
- Vehicle exhaust and combustion by products
- Pollen and organic debris
- Seasonal dry dust and winter abrasives



2 BUILDING AIR INTAKE

Outside air enters the facility through multiple pathways.

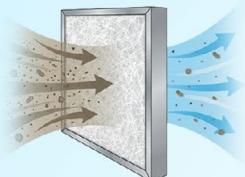
- HVAC make-up air intakes
- Door openings and pressure differentials
- Loading docks and high-traffic entry points



3 HVAC FILTRATION & AIR CONTROL

HVAC filtration acts as the **first airborne soil control point**, not a cleanroom solution.

- Lower-efficiency filters primarily protect equipment
- Higher-efficiency filtration can reduce fine airborne soil when the system is designed to support it
- Filtration effectiveness depends on:
 - Filter efficiency range
 - System airflow capacity
 - Maintenance frequency and loading



4 INDOOR AIR CIRCULATION

Remaining airborne particles move throughout the building.

- Air handling units distribute air across zones
- Occupant movement disturbs settled dust
- Fine particles continue circulating until removed or settled



5 SURFACE SETTLING

Airborne soil settles onto building surfaces over time.

- Floors accumulate abrasive particles
- Horizontal surfaces collect visible dust
- Vertical surfaces collect electrostatically



6 RE-SOILING EFFECT

Surfaces appear dirty faster after cleaning.

- Visible dust returns shortly after service
- Floors lose appearance quicker
- Complaints increase despite proper cleaning execution



7 CLEANING PROGRAM RESPONSE

Cleaning frequency increases to compensate for re-soiling.

- Additional labor hours
- Increased chemical usage
- More frequent equipment use
- Higher operating costs



8 MISIDENTIFIED ROOT CAUSE

The issue is often attributed to cleaning performance.

- "We need to clean more often"
- "The chemical isn't working"
- "The staff missed areas"



9 SYSTEM FAILURE POINT

Airborne soil was never controlled upstream.

- Filtration treated as basic maintenance instead of soil-load management
- System design limitations not acknowledged
- Cleaning teams expected to solve an air-driven problem



YOU CANNOT CLEAN FASTER THAN AIRBORNE SOIL ENTERS A BUILDING.

Filtration can reduce airborne soil load **only within the limits of system design, efficiency, and maintenance.**

Cleaning cannot correct an upstream air-control problem.