

# DustClear™ Five Stage Dust Control System

The Facts Behind The Proterra™'s Incredible Dust Control

## Why You Need DustClear™

- Employee health, safety and comfort
- Clean, attractive appearance
- Parking garage customer satisfaction – no dust on cars
- Reduced product and labor costs – no dusting off parts prior to shipment
- Equipment life and maintenance – reduced dust and dirt results in less wear of moving parts
- Over 75% increase in dust controlled cleaning productivity

## Stage 1. DustGuard™ – Attacks dust at the side brooms – the main source of airborne sweeper dust

- Eliminates the majority of dust created by the side brooms
- Not vacuum based so main broom dust control is not degraded
- Fogging system bonds to airborne dust particles so they immediately fall to the ground and are swept into the hopper
- Surface is left dry to touch and ready for immediate use
- Minimal moisture used in fogging system leaving hopper and dust filter dry



Conventional Sweeping

## Stage 2. Vacuumized Main Broom Chamber – Captures dust from main broom

- Dust kicked up by main broom is fully captured in a vacuumized chamber that is sealed to the ground by surround skirting
- Significant 640 CFM air flow generated by electronic fan assures excellent dust containment over uneven ground and other variables that typically hinder dust control



Sweeping with DustGuard™

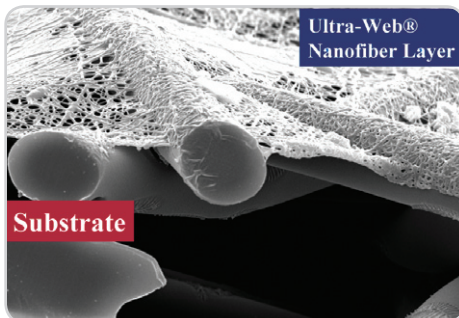
Smart cleaning.

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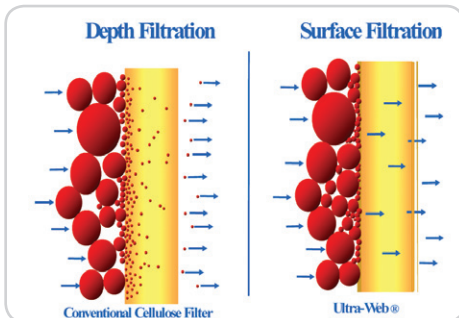
 **Advance**

### Stage 3. Airflow Labyrinth – Removes 90% of dust from the airstream

- Dust laden air flow slows in the main hopper chamber so that heavier particles settle with other collected debris. Air accelerates and decelerates in an additional cycle prior to reaching the dust filter so more dust settles out.
- Airflow makes multiple abrupt directional changes so that 90% of the dust is removed from the airstream before it reaches the dust filter improving dust control and extending filter life.



(photo and diagram courtesy of Donaldson Company, Inc.)



### Stage 4. Nanofiber Technology Dust Filter –

Any fine dust that did not settle in the hopper is filtered out of the airstream and DustClear™ air is returned to the atmosphere

- Ultra-Web® filter efficiently filters submicron size particles (human hair is about 100 microns). The filter is >98% efficient on particles 0.3 – 1.0 micron; this is approaching H.E.P.A. filtration levels and meets MERV 13 specifications.
- Unique multilayer system traps dust on the surface of the filter for better clean-back, longer filter life, and lower maintenance costs.
- 94 square feet of filter material allows for long, dust free sweeping with infrequent clean-back cycles required.
- Heavy seals with mechanical clamping assure excellent filter sealing.
- Panel filter can be replaced in under one minute.

### Stage 5. Airflow Restoration System – Liberator™ variable frequency filter vibration system restores airflow to a filter burdened with dust

- Aggressive, patented, Liberator™ shaker design changes vibration frequency during shaking for more effective removal of dust restoring airflow back to near original flow conditions.
- Panel filter sits horizontally in the machine so all dust leaves filter when shaken free and returns directly to the hopper.

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