Sloan Sensor 101

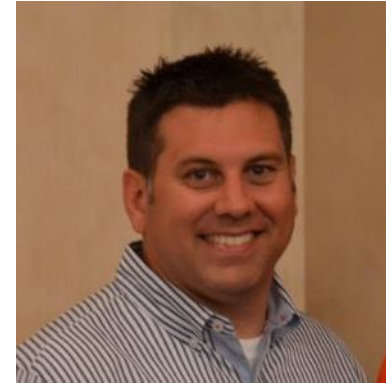## Installation, Start-up, Function, and Troubleshooting

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Presenters

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Agenda

This webinar is designed to:

- Introduce how Sloan touch-free sensors work

- Cover the types of information that Sloan touch-free products have to communicate to facility personnel

- Present the messages that various Sloan products can send and what to do about them

You will learn:

- How to understand the "language" of Sloan touch-free sensor products

- Which sensor messages are critical to a positive customer experience

We will not cover:

- Special settings adjustments or custom features

Image courtesy of Petopia

What is this restroom trying to tell me?

"Top" LED flashes RED 3x

LED flashes RED all of the time

BLUE LED flashes 4x when user is in range

BLUE LED is flashing when no user is within range

Why Visual Light Communication (VLC) is Important

Save me time

Save me money

Make my work easier

Make me money

Improve my customer's experience

VLC is critical to safety, hygiene, and customer satisfaction

For Your Reference

Sloan Webinar Series

Replacing Manual Faucets with Automatic Touch-free Sensor Faucets

Converting Manual Flushometers to Touch-free Sensor Operation

Focusing on Touch-free Hygiene in K-12 and Higher Education Facilities

Sloan Sinks – Designing with Hygiene, Quality and Customization

Commercial Restroom Recommendations for Return-to-Work & Facility Start-Up

How do Sensors Work?

Sloan "SF" Faucet IR Sensor Assembly

How do IR (Infrared) Sensors Work?

Infrared Sensor

- Senses the reflection of infrared light when a valid "target" is within range
- Range can be adjusted

Image courtesy of Scientifica Corbis
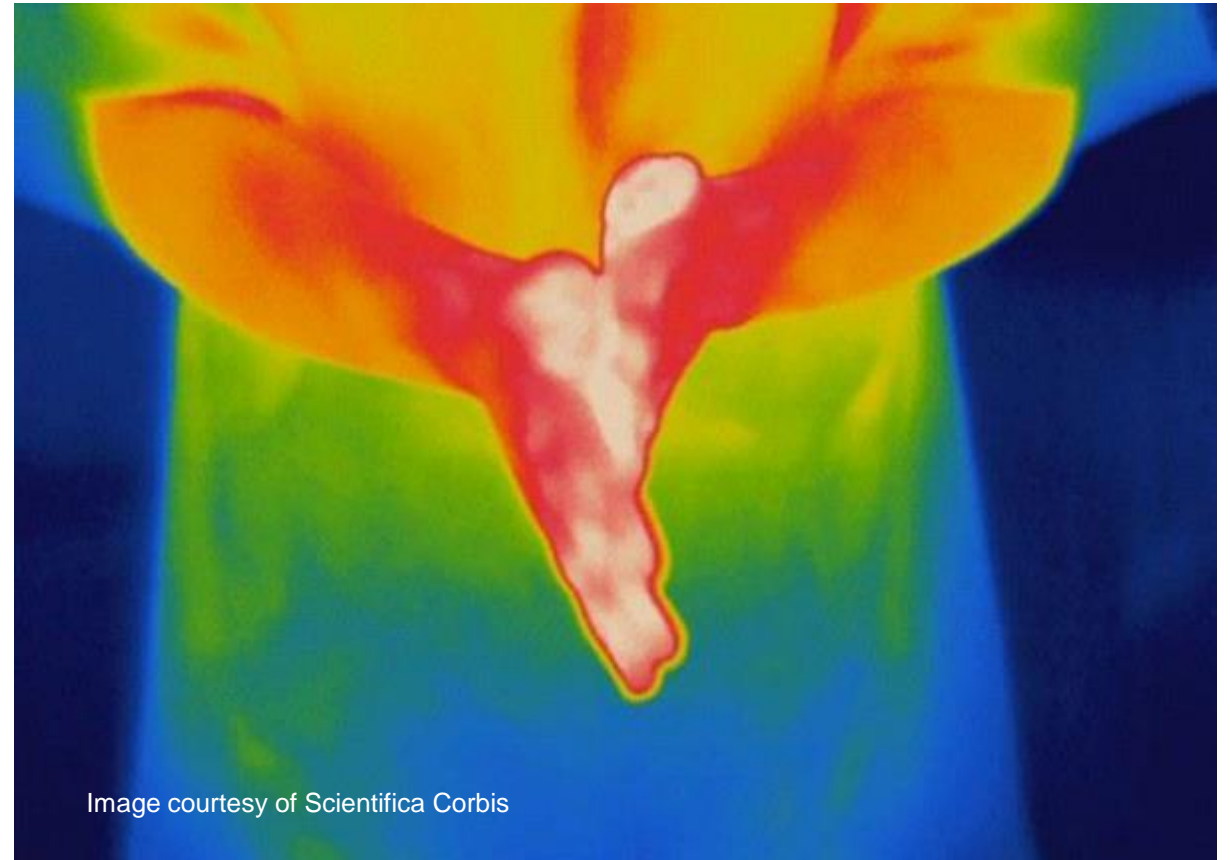
How do Capacitance (Proximity) Sensors Work?

Capacitance (Proximity) Sensor

- Senses the electrical field surrounding a valid "target" when within range
- Range can be adjusted
- Cannot be used on metal sinks (including enamel coated cast iron) or near large metal objects

What are my sensors trying to tell me?

Flushometer Sensors

Top Mounts

Optima Plus, G2, ECOS, SOLIS (previous and current generation)

What's the Difference between Previous and Current Generation Top Mounts?

Sentinel Flushes were turned off in late 2015 to conserve water – contact Tech Support with questions

Sloan, G2 and ECOS single flush went to adaptive sensing in June of 2016

ECOS dual flush went to adaptive sensing in July 2018

SOLIS will transition to adaptive sensing by end of 2020

Current sensor cover asks for time to permit adaptive sensing

Current Top Mount Flushometers and Retrofits

	SLOAN	MC	G2	ECOS	SOLIS
LED Color	Red	Red	Red	Blue	Blue
Start-up Time	1 minute (adaptive sensing)				
Start-up Indicator	Blinking LED				
User is Detected	LED Flashes when a user is detected during first 10 minutes after start up, no flash after that (to conserve battery life)				
Flush Delay	Closet – 3s / Urinal – 1s				
Low Battery Indicator	Flashes 4x when user is within range				
Link to Installation Instructions	SLOAN	MC	G2 / ECOS		SOLIS

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Previous Top Mount Flushometers and Retrofits

	SLOAN	MC	G2	ECOS	SOLIS
LED Color	Red	Red	Red	Blue	Blue
Start-up Time	5 seconds (factory range setting) or Manual Range Adjustment				
Start-up Indicator	Blinking LED				
User is Detected (first 10 minutes of operation only)	LED Flashes when a user is within range				
Flush Delay	Closet – 3S / Urinal 1S				
Low Battery Indicator	Flashes 4x when user approaches				

For a copy of the complete ECOS, G2, and Sloan Optima Plus Troubleshooting Flow Chart for previous generation units, please contact Sloan Tech Support

Top Mount Flushometer and Retrofit Tips

Indicator	Issue	Resolution
Sensor blinks with no user within range	Range is set too far out	Depress manual override button for 20-30 seconds until LED appears and step out of range to initiate adaptive sensing mode
Sensor does not blink when user is within range	Range is set too close in	Depress manual override button for 20-30 seconds until LED appears and step out of range to initiate adaptive sensing mode
Sensor blinks 4x when user is within range	Batteries are low	Replace batteries

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Side Mounts

SMO, SMOOTH, SFSM, DFSM

Side Mount Flushometers and Retrofit Kits

	SMO	SMOOTH	SFSM	DFSM
LED Color	Green / Yellow	Red	Green / Red	Green / Red
Start-up Time	7 minutes	45 seconds	3 minutes	3 minutes
Flush Delay	1s	Closet -3s / Urinal -1s		
Start-up Indicator	Green LED flashing, pause, then 3x green LED flashes	Red LED flashes and unit will flush	Intermittent Green LED flashing until complete, then 1 flush	
User is Detected	Green LED flashes 3x after 5 sec. delay	Red LED flashes for 8 seconds	Flashing Green LED	
Low Battery Indicator	Yellow LED flashes continuously	Red LED flashes 2x normal speed	Red LED flashes 4x after target present for 8 seconds	
Improper Start-up	Green LED flashes with no user	NA	Red LED flashes continuously after adaptive sensing	
Link to Installation Instructions	SMO	SMOOTH	SFSM	DFSM

EBV-89-A SMO Tips

Indicator	Issue	Resolution
Green LED flashes when no user present	Sensor is covered or range is set too far out	Uncover sensor and/or adjust range
Yellow LED flashes	Batteries are low	Replace batteries
LED lights do not function	Batteries are dead	Replace batteries

EBV-200-A SMOOTH Tips

Indicator	Issue	Resolution
Red LED flashes when no user is present or does not flash when user is within range	Range is not properly adjusted	Adjust sensor range
Sensor blinks 4x when user is within range	Batteries are low	Replace batteries
LED lights do not function	Batteries are dead	Replace batteries

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SFSM / DFSM Tips

Indicator	Issue	Resolution
Red LED flashes continuously OR Red LED flashes 4x after 8 seconds OR Red LED flashes 1x per hour with no user	Batteries are low	Replace batteries
Red LED flashes continuously after calibration	Improper start up	Remove batteries for 10 seconds and repeat installation procedure
LED lights do not function	Batteries are dead	Replace batteries

ESS

EL-1500 and EL-1500L Sensor

EL-1500 and EL-1500L Series Sensor

	ESS
LED Color	Red
Start-up Time	1 minute
Start-up Indicator	Solid Red LED during start up
User is Detected	Slow flashing red LED, then rapid flashing red LED when unit is armed (ready to flush – 16s for closet and 8s for a urinal)
Flush Delay	Closet – 3s / Urinal – 1s
Low Battery Indicator	NA (Hardwired 24 Volt)
Improper Start-up	Continuously flashing red LED
Link to Installation Instructions	ROYAL ESS

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EL-1500 Sensor Tips

Indicator	Issue	Resolution
Continuous slow flashing red LED	Improper start-up	Disconnect power for 20 seconds and repeat installation procedure
Continuous fast flashing red LED	Sensor is detecting a target	Remove obstruction or clean sensor window
Red LED flashes an "SOS" pattern (three short, three long, three short)	Wiring connections are incorrect or there is an electrical short	Re-wire the sensor correctly and repeat installation procedure
LED lights do not function	No power to unit	Check power supply and repeat installation procedure
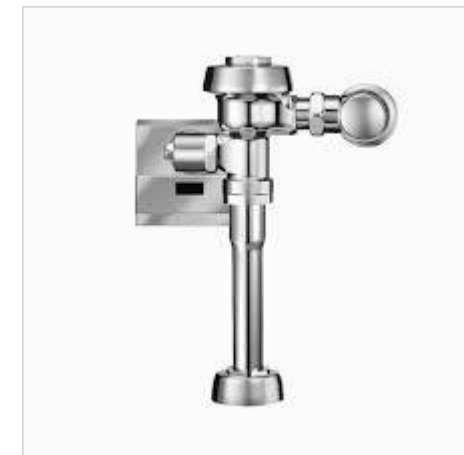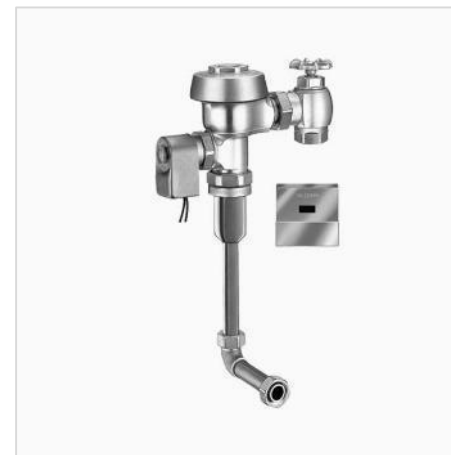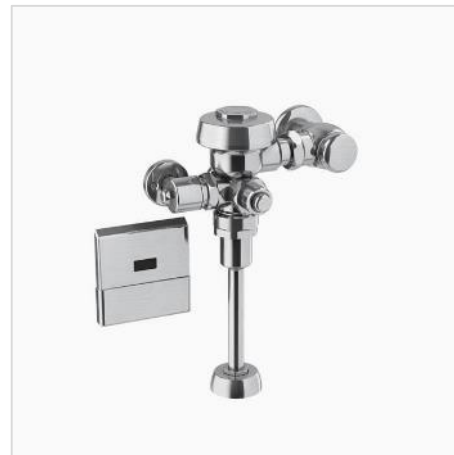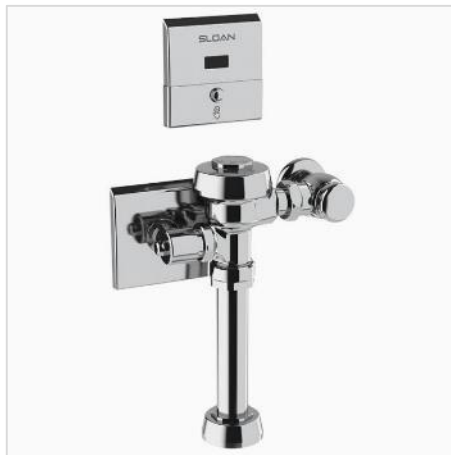
CX

CX Flushometers

	CX
LED Color	Red
Start-up Time	3.5 minutes
Start-up Indicator	Continuous Red LED followed by a slow flashing Red LED, then 2 final LED flashes
User is Detected	LED Flashes when a user is detected during first 10 minutes after start up, no flash after that
Flush Delay	Closet – 3s / Urinal – 1s
Low Battery Indicator or battery is not connected (if applicable)	Red LED flashes 4x when user within range
Link to Installation Instructions	CX

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CX Flushometer Tips

Indicator	Issue	Resolution
Red LED flashes 4x when user within range	Low Battery Indicator or battery is not connected (if applicable)	Replace batteries or connect battery pack
LED lights do not function	No power to unit	Check power supply and repeat installation procedure

Faucet Sensors

Shown: SF-2350 Battery-powered Faucets

SF Family

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Sloan SF Faucets

Below Deck Control Box

	SF-2100/2150	SF-2200/2250	SF-2300/2350	SF-2400/2450
LED Color	Red			
Start-up Time	0 minutes (factory range setting) or Manual Range Adjustment			
Start-up Indicator	Flashing LED			
User is Detected	Red LED flashes 1x when a user is detected			
Low Battery Indicator (if applicable)	Red LED flashes intermittently when battery is low			
Improper Start-up	NA			
Link to Installation Instructions	SF FAUCETS			

SF Faucet Tips

Indicator	Issue	Resolution
Red LED flashes when no user is present or does not flash when user is within range	Range is not properly adjusted	Adjust sensor range
Red LED flashes intermittently	Batteries are low	Replace batteries
Red LED does not function	Batteries are dead	Replace batteries

Shown: ETF-80 Hardwired Faucets with Matching ESD-2000 Soap Dispensers

EBF/ETF Family

Sloan EBF & ETF (Optima) Faucets

Below Deck Control Box

	ETF-80 EBF-85	ETF-880 EBF-187	ETF-600 EBF-650	ETF-610 EBF-615	ETF-660 EBF-665
LED Color	Red LED (Sensor), Green LED (Control Box)				
Start-up Time	1 minute (adaptive sensing)				
Start-up Indicator	Short green flash on control box, long red flash on sensor				
User is Detected	Red sensor LED flashes 1x when a user is detected				
Low Battery Indicator (if applicable)	Red sensor LED flashes intermittently when battery is low				
Improper Start-up	Lack of short green flash on control box or long red flash on sensor				
Link to Installation Instructions	EBF and ETF (OPTIMA) FAUCETS				

Sloan EBF & ETF (Optima) Faucets

Below Deck Control Box

	ETF-500 EBF-550	ETF-700 EBF-750	ETF-770 EBF-775	ETF-800 EBF-850
LED Color	Red LED (Sensor), Green LED (Control Box)			
Start-up Time	1 minute (adaptive sensing)			
Start-up Indicator	Short green flash on control box, long red flash on sensor			
User is Detected	Red sensor LED flashes 1x when a user is detected			
Low Battery Indicator	Red sensor LED flashes intermittently when battery is low			
Improper Start-up	Lack of short green flash on control box or long red flash on sensor			
Link to Installation Instructions	EBF and ETF (OPTIMA) FAUCETS			

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EBF / ETF Faucet Tips

Indicator	Issue	Resolution
Red LED flashes when no user is present or does not flash when user is within range	Range is not properly adjusted	Adjust sensor range
Red LED flashes intermittently	Batteries are low	Replace batteries
Red LED does not function	Batteries are dead	Replace batteries

Shown: EAF-250 Battery-powered Faucet and Matching ESD-2000 Soap Dispenser with Brushed Nickel PVD Finish

EAF Family

Sloan EAF Faucets

	EAF-100 EAF-150	EAF-200 EAF-250	EAF-225	EAF-275	EAF-350	EAF-700 EAF-750
LED Color	Red and Green LED					
Start-up Time	15 seconds (adaptive sensing)					
Start-up Indicator	Flashing Red LED, then 1x Green LED flash					
User is Detected	NA					
Low Battery Indicator	Red LED flashes intermittently when faucet is in use					
Improper Start-up	Red LED flashes continuously					
Link to Installation Instructions	EAF-100 EAF-150	EAF-200 EAF-250	EAF-225	EAF-275	EAF-350	EAF-700 EAF-750

EAF Faucet Tips

Indicator	Issue	Resolution
Red LED flashes intermittently	Batteries are low	Replace batteries
Red LED does not function	Batteries are dead	Replace batteries

Note: Sloan EAF faucets include a hidden "IQ Click" button for adjusting settings and features. Consult the Installation Instructions for more information

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Shown: EFX-200 Hardwired Faucet with Matching ESD-500 Soap Dispenser and EHD-511 Hand Dryer on an AER-DEC Sink

EFX (BASYS) Family

Sloan EFX (BASYS) Infrared Faucets
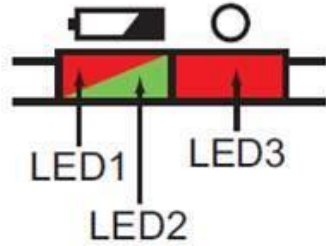
	EFX-100 Series "High"	EFX-200 Series "Mid"	EFX-300 Series "Low"	EFX-600 Series "Low IB"	EFX-800 Series "Wall"
LED Color	Green and Red LEDs on "crown"				
Start-up Time	20 seconds (adaptive sensing)				
Start-up Indicator	Intermittent flashing Red and Green LEDs, followed by 1x Green LED flash				
User is Detected	Green LED flashes for 2 seconds				
Low Battery Indicator	Red LED flashes 3x when low, double flashes 3x when very low				
Solenoid Valve Error	Red LED double flashes 3x after hands are removed				
Improper Start-up	Continuous alternating Red and Green LED flashes				
Link to Installation Instructions	EFX-100 Series "High"	EFX-200 Series "Mid"	EFX-300 Series "Low"	EFX-600 Series "Low IB"	EFX-800 Series "Wall"

Sloan EFX (BASYS) Capacitance Faucets

Below Deck Control Box

	EFX-300 Series "Low"	EFX-600 Series "Low IB"
LED Color	Green and Red LEDs on "crown"	
Start-up Time	0 seconds (adaptive sensing)	
Start-up Indicator	Battery powered – Green LED flashes 5x Hardwired – alternating Green and Red LED flashes 5x	
User is Detected	Green LED flashes for 2 seconds	
Low Battery Indicator	Red LED flashes 4x when faucet is in use	
Solenoid Valve Error	Red LED flashes 2x after hands are removed	
Improper Start-up	Red LED flashes 4x per second	
Link to Installation Instructions	EFX-300 Series CAP	EFX-600 Series CAP

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EFX BASYS Faucet Tips

Indicator	Issue	Resolution
Green LED flashes when no user is present or does not flash when user is within range	Range is not properly adjusted	Adjust sensor range
Red LED flashes intermittently	Batteries are low	Replace batteries
Green and Red LEDs do not function	Batteries are dead	Replace batteries

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Shown: ETF-80 Hardwired Faucets with Matching ESD-2000 Soap Dispensers

Soap Dispenser Sensors

"Optima" Soap Dispensers

	ESD-200 ESD-250	ESD-300 ESD-350	ESD-400
LED Color	Red and Yellow	Red and Yellow	Red and Green
Start-up Indicator	NA	NA	Green LED on below-deck motor indicates power
Low Battery Indicator (if applicable)	Yellow LED flashes	Yellow LED flashes	Hardwired only
Low Soap Indicator	Red LED flashes	Red LED flashes	Red LED on sensor flashes
Link to Installation Instructions	ESD-200 / ESD-250	ESD-300 / ESD-350	ESD-400

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Soap Dispenser Tips

Indicator	Issue	Resolution
Yellow LED flashes	ESD200, ESD250, ESD300 or ESD350 batteries or hardwired voltage is low	Replace batteries or check power supply
Red LED flashes	ESD200, ESD250, ESD300 or ESD350 soap is low	Replace soap
Red LED flashes	ESD400 soap is low	Refill soap
LEDs do not function	Batteries are dead	Replace batteries or check power supply

"Sloan" Soap Dispensers

	ESD-1500	ESD-2000	ESD-2100	ESD-500	ESD-600	ESD-700	ESD-800
LED Color	NA						
Low Battery Indicator	NA						
Low Soap Indicator	NA						
Link to Installation Instructions	SLOAN SOAP DISPENSERS						

CONCLUSION

Sloan has…

- Widest selection of sensor plumbing products
- Proven experience
- Reliable and easy to maintain
- Cutting edge technology
  - Adaptive sensing
  - On delays & off delays
- Indicator lights
  - Start-up
  - Adjustment
  - Maintenance
- Sloan has put a lot of thought and ingenuity into these products

Go to the light!

What is this restroom trying to tell me?

"Top" LED flashes RED 3x

Battery strength is low

LED flashes RED all of the time

The soap bottle is empty. It's time to refill.

BLUE LED flashes 4x when user is in range

Battery strength is low

BLUE LED is flashing when no user is within range

Sensor is set too far. Adjust sensor range

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Find your local Sloan representative for more information

Sloan Rep Locator tool

- Local code knowledge
- Familiarity with existing sites
- Product knowledge
- Available for onsite consultation

Sloan Customer Care Center
Phone: 800.982.5839
Hours: 7:00 AM - 5:00 PM (CST) Monday – Friday
customer.service@sloan.com

Sloan Technical Support
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F: 800.737.3061
techsupport@sloan.com

Diversified Spec Sales, Oak Park,

Sloan Mobile Showroom

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Questions?

Upcoming Sloan Training Webinars

June 25th

Commercial Restroom Products and ADA Compliance

July 2nd

Flushometer Care and Maintenance Part 1 – Manual Diaphragm Units

July 9th

Power Supply Options and Installation Recommendations for Sloan Sensor Faucets

July 16th

Sustainability and Sloan Commercial Restroom Products

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Training Comments, Questions, or Suggestions?

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