

A More Transparent Shade of Green:

Environmental Product Declarations (EPDs)
Drive Restrooms to the Lead in Green Design



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A More Transparent Shade of Green: PCRs Drive Restrooms to the Lead in Green Design

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Description: Construction is going green. As both sustainability and efficiency advance in the built environment, architects, specifiers, and buyers are increasingly concerned with purchasing products that are environmentally friendly and can achieve project performance and client welfare goals. Architects and designers are, in essence, visionaries. This course explores options that architects and designers have when choosing products that accurately support and fuel their passion for possibilities while maintaining the health, safety, and welfare of the clients needs. Definition for PCRs, LCAs, and EPDs are discussed and various case studies are examined.

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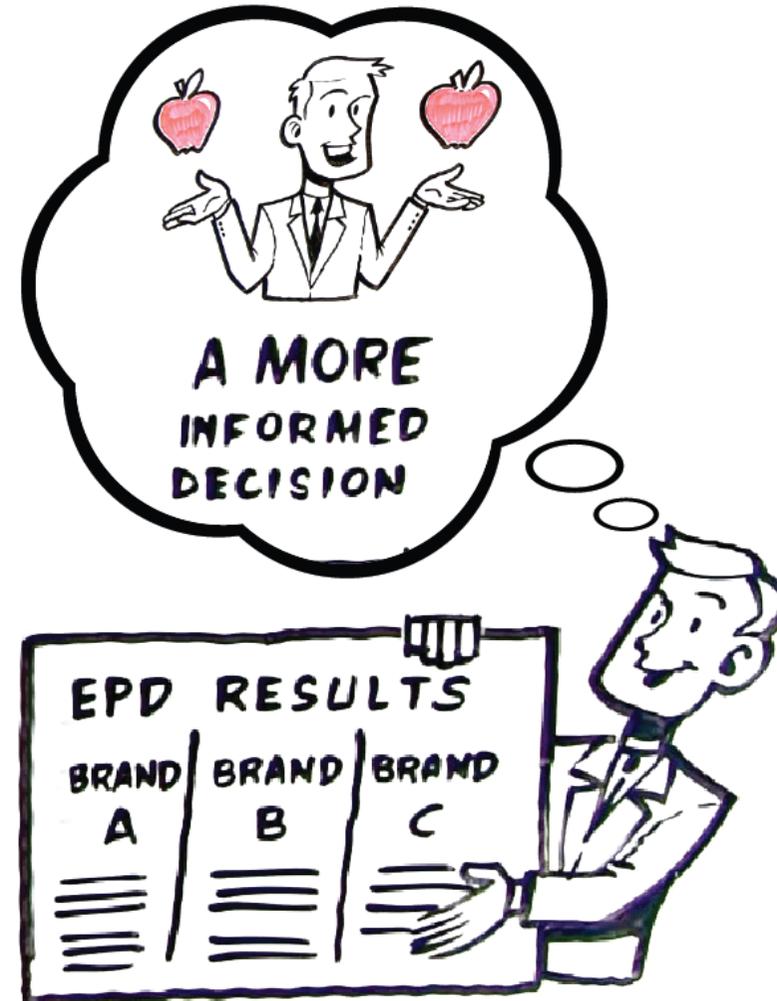
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Purpose and Learning Objectives

Purpose: Construction is going green. As both sustainability and efficiency advance in the built environment, architects, specifiers, and buyers are increasingly concerned with purchasing products that are environmentally friendly and can achieve project performance and client welfare goals. Architects and designers are, in essence, visionaries. This course explores options that architects and designers have when choosing products that accurately support and fuel their passion for possibilities while maintaining the health, safety, and welfare of the clients' needs. Definition for PCRs, LCAs, and EPDs are discussed and various case studies are examined.

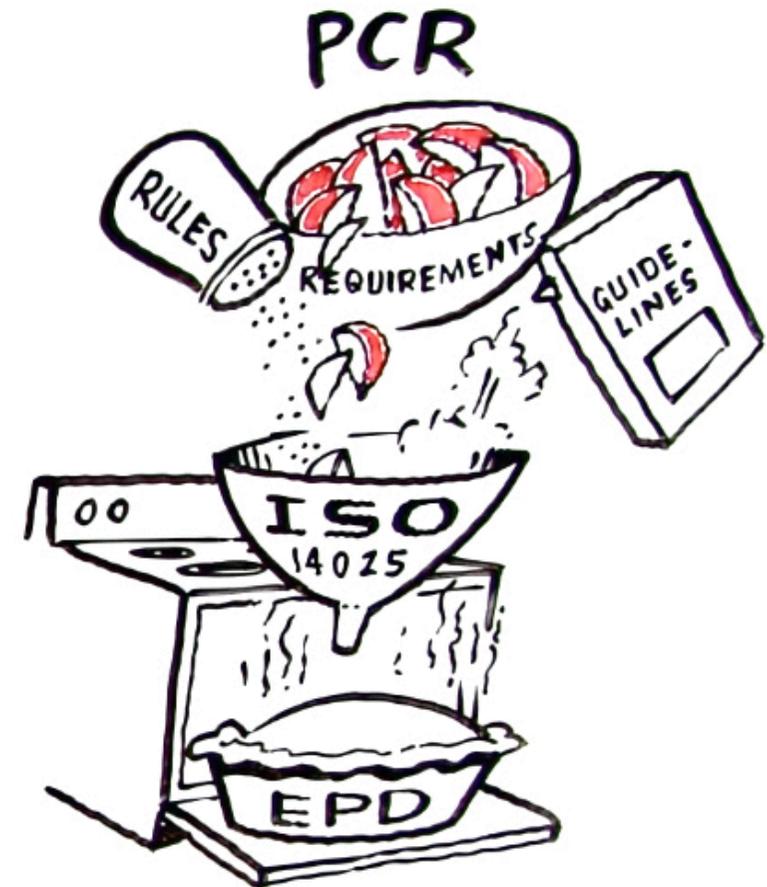


Purpose and Learning Objectives

Learning Objectives:

At the end of this program, participants will be able to:

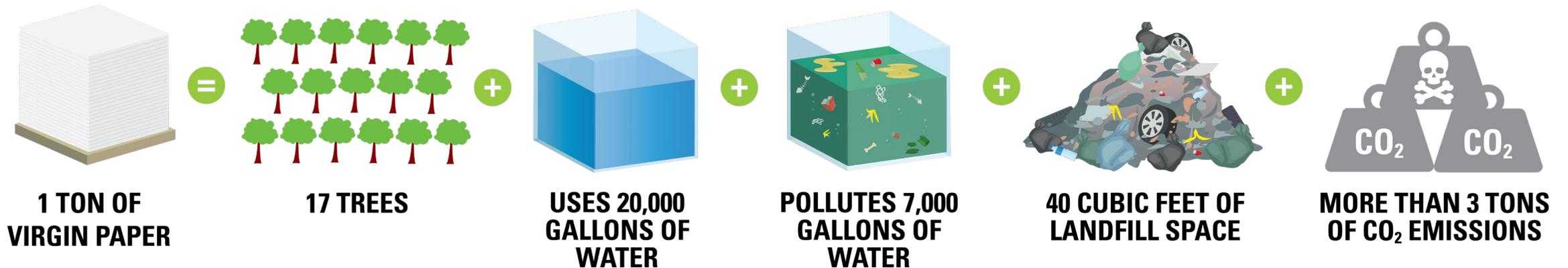
- Discuss how environmental product declarations (EPDs) allow for apples to apples comparisons of building products in terms of hygiene, welfare, and health performance
- Explain how product category rules (PCRs) establish clear, consistent evaluation methods for building products as a means to help ensure and validate the environmental performance of buildings
- Describe how PCRs, LCAs, and EPDs can be used together to assess and optimize the hygiene, health, and sustainability characteristics of high-performance restroom designs, and
- Apply the information provided by environmental and efficiency standards when making product and welfare decisions.



Introduction

As architects and designers increasingly focus attention on issues of sustainability, restrooms are not typically a part of the building immediately associated with green initiatives, but are an area that should not be overlooked.

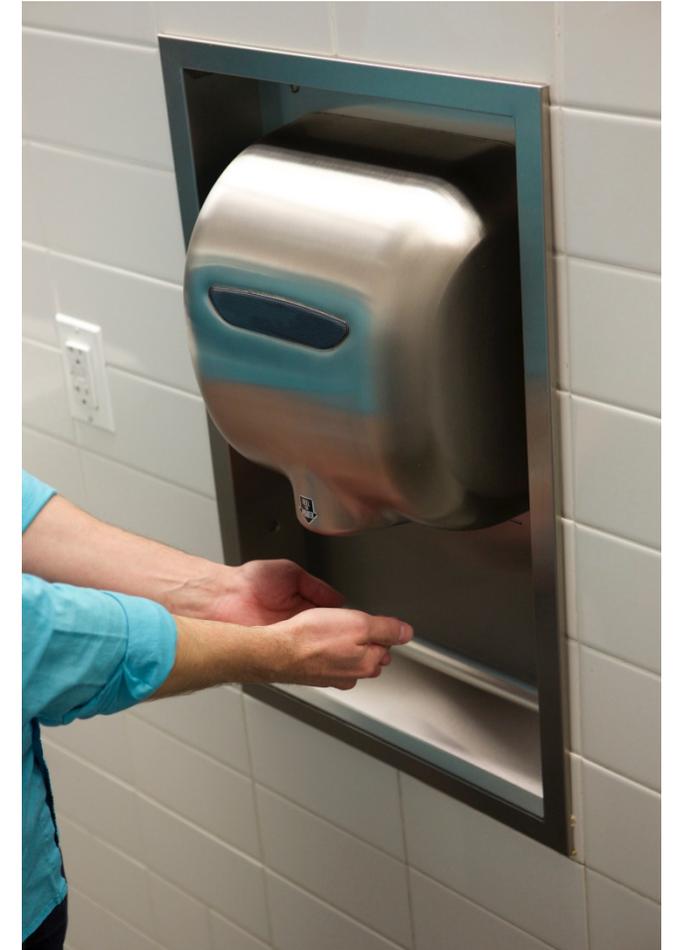
Although restrooms are a necessary space, they consume resources and generate costs. High water usage, waste generation, and energy consumption for electrical and lighting can plague bathroom design. However, careful product selection and planning can turn this water, energy, and dollar-hungry real estate into a high-efficiency, cost-conscious space.



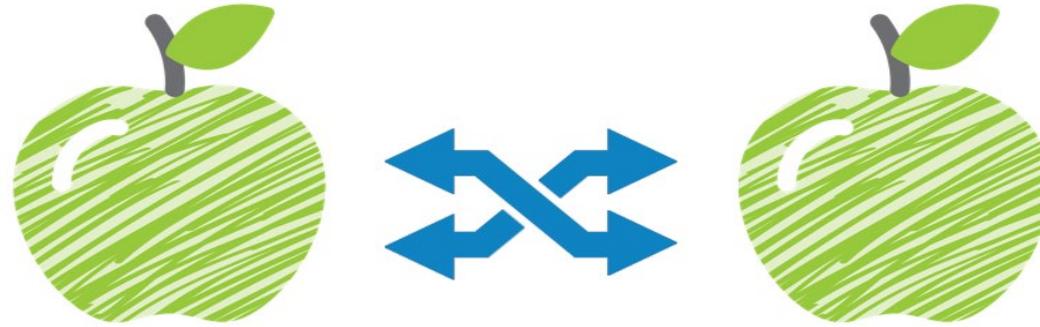
Introduction

More green is good. But, hand-in-hand with the proliferation of green, it has become more difficult to determine exactly which products are environmentally preferable. Many industries do not have guidelines in place to delineate the environmental differences, or guidelines that exist are unclear, or not universal. A clutter of claims confuses the marketplace. This means that, when it comes to choosing a product, it can be like comparing apples to oranges.

Decision-makers need an easier path for sorting through the confusion of marketing claims, thereby leveling the product playing field. They want to be able to clearly and consistently distinguish between green product attributes on eco-labels. They also need to know that the products selected to transform restrooms into efficient, energy- and welfare-conscious spaces are going to perform as advertised.



Defining Transparency



Today's product declarations and eco-labels offer a standardized way of quantifying the environmental impact of a product by studying the raw materials and energy consumption during its production, its present use, and its future disposal. For buyers and specifiers, these disclosure tools help them better understand a product's sustainable qualities and its environmental repercussions, allowing for more informed product selections.

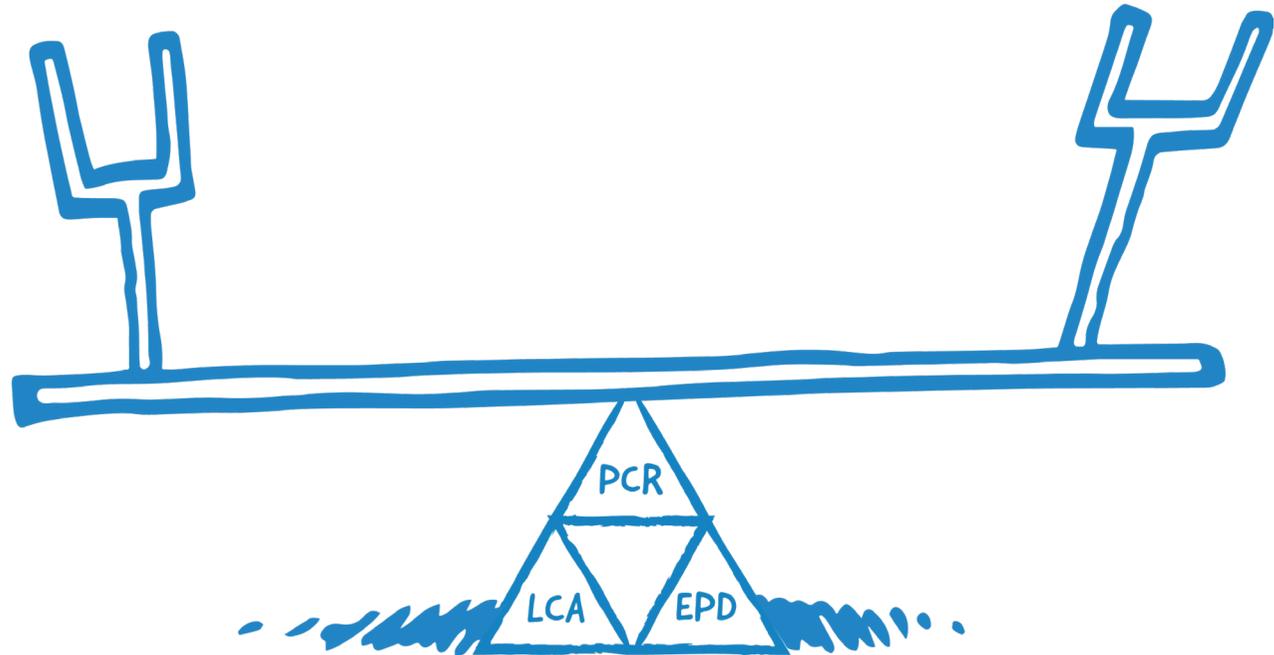


The Toolbox: Getting to Know Labels and Certifications

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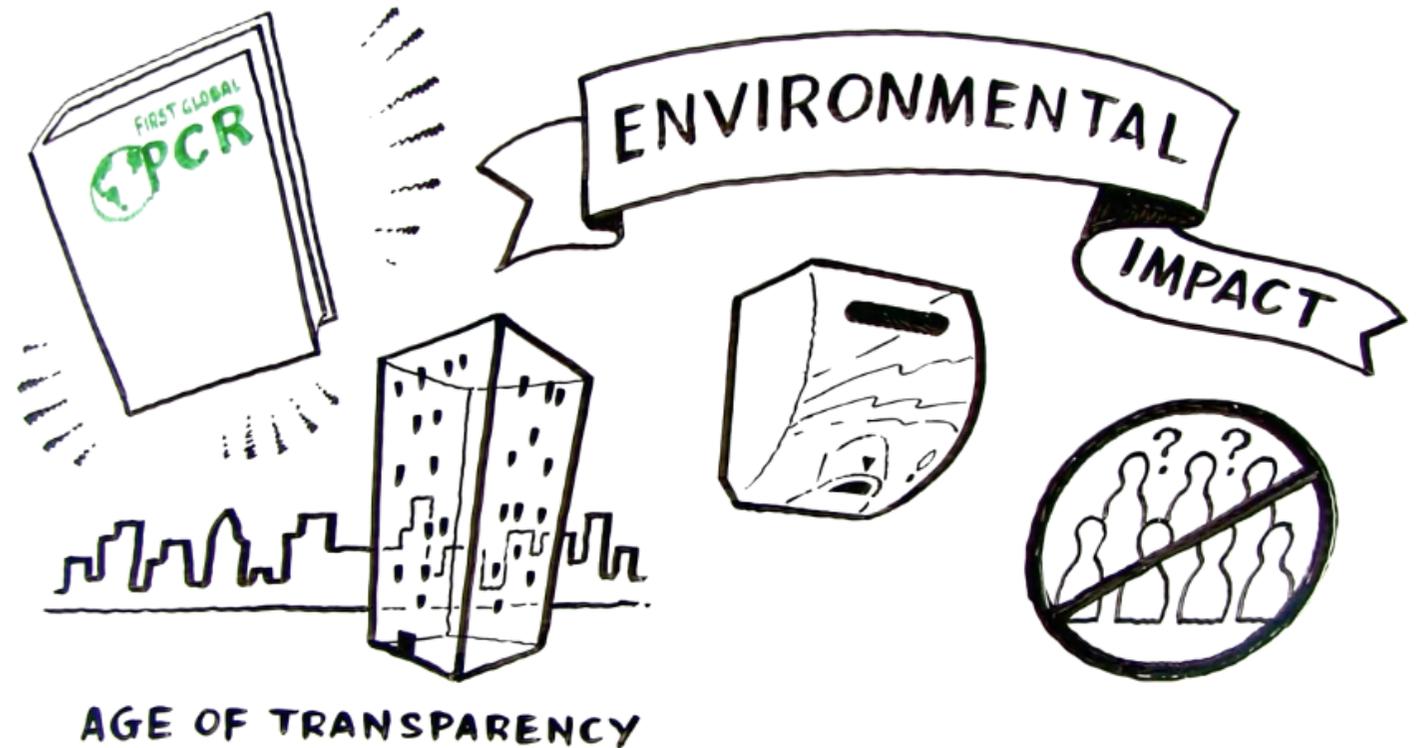
Eco-labels and product declarations are the workman's tools in the age of transparency.

To wield these in the battle for clear, confident product evaluations, decision-makers need to get comfortable with an alphabet soup: PCRs, EPDs, and LCAs.

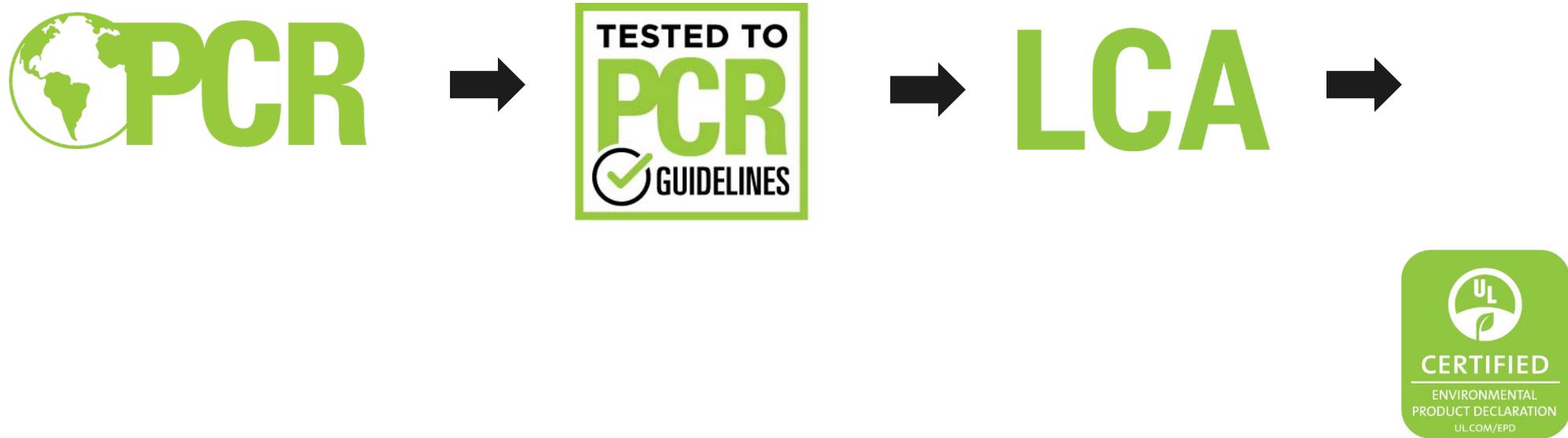


What Is a PCR?

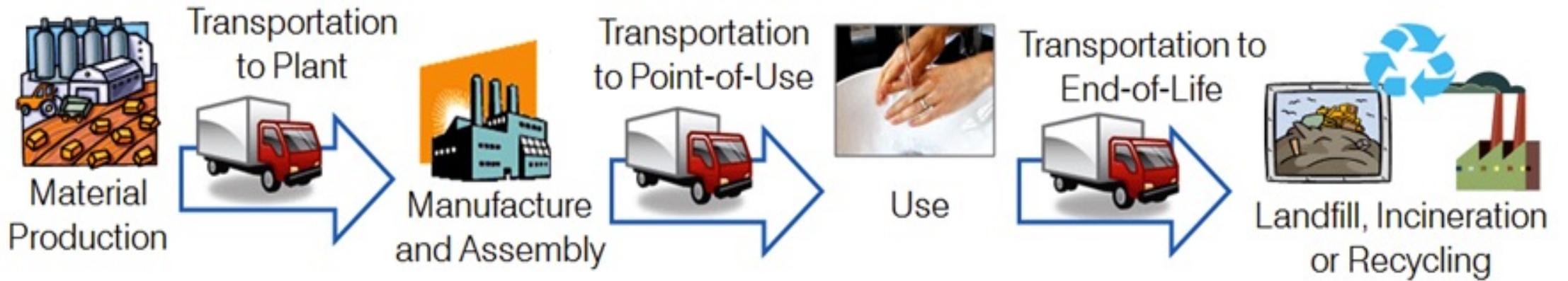
A PCR, or product category rule, establishes a set of internationally recognized and consistent rules, requirements, and guidelines that all functionally equivalent products in a specific industry are encouraged to use when creating environmental product declarations (EPDs). That means that in order for a product in a given industry to be transparent, it must be tested and evaluated in a clear, consistent way, allowing decision-makers to make better-informed choices. A global PCR allows manufacturers worldwide to evaluate the environmental impact of products using a common approach, resulting in less market confusion.



What is a PCR?



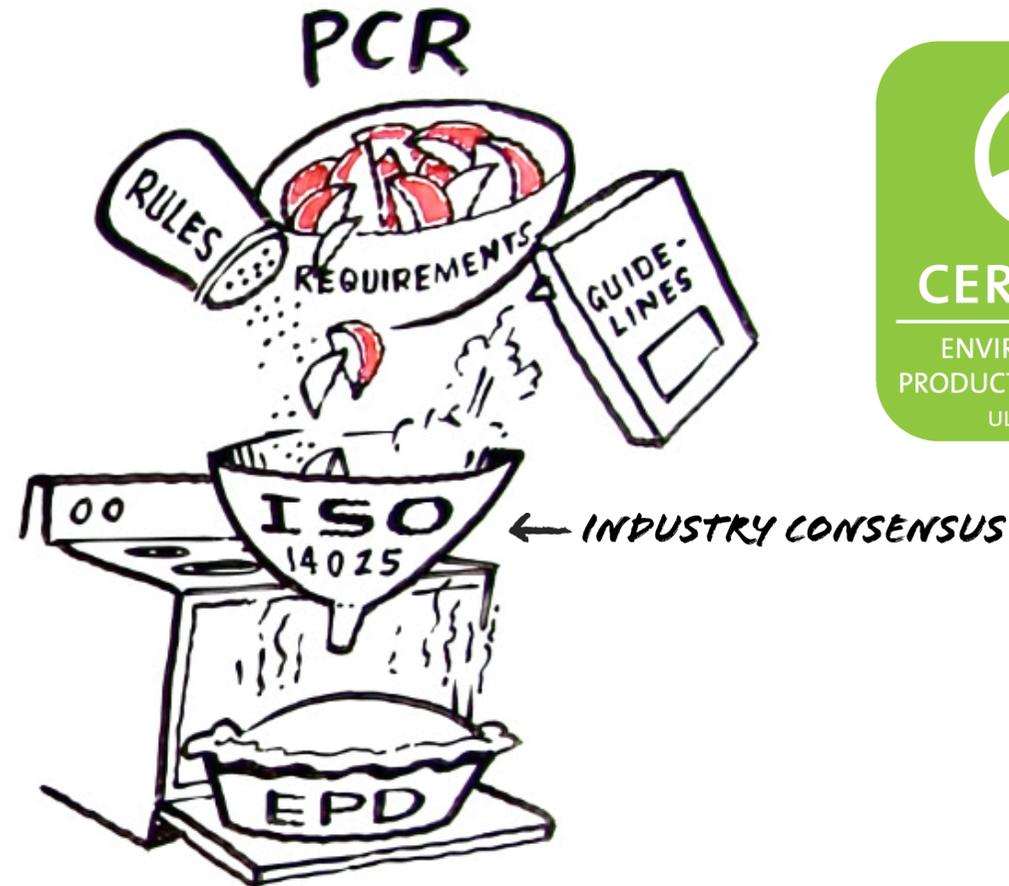
What is an LCA?



What is an EPD?

An EPD is a standardized way of quantifying the environmental impact of a product by studying the raw materials and energy consumption during its production, use, and disposal.

For buyers and specifiers, an EPD becomes a disclosure tool that helps purchasers better understand a product's sustainable qualities and environmental repercussions, enabling more informed product selections.

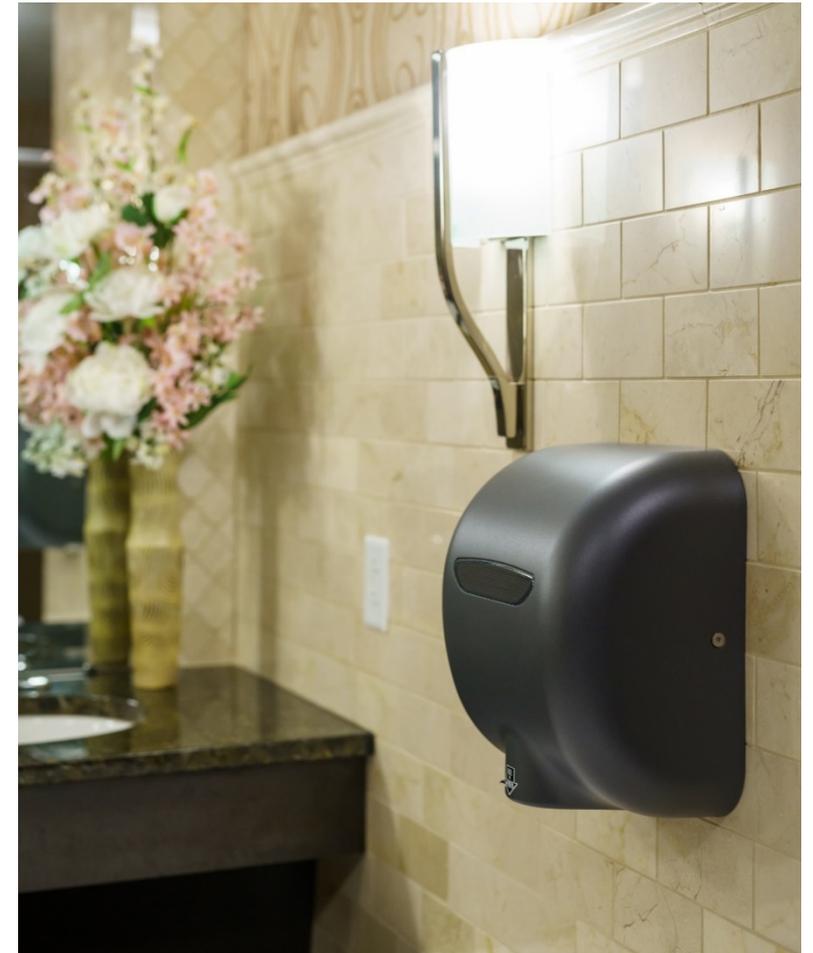


The First-Ever Global PCR



Once those elements were selected and approved, the demanding process of drafting a PCR moved forward, bringing an open response period for other manufacturers in the industry and interested parties to comment. After receiving feedback, an expert review panel considered the draft and comments from manufacturers before finalizing and publishing the PCR.

At its conclusion, the hand dryer PCR is the culmination of more than a year-long process and is the first step toward the development of EPD eco-labels that govern one or more product category.

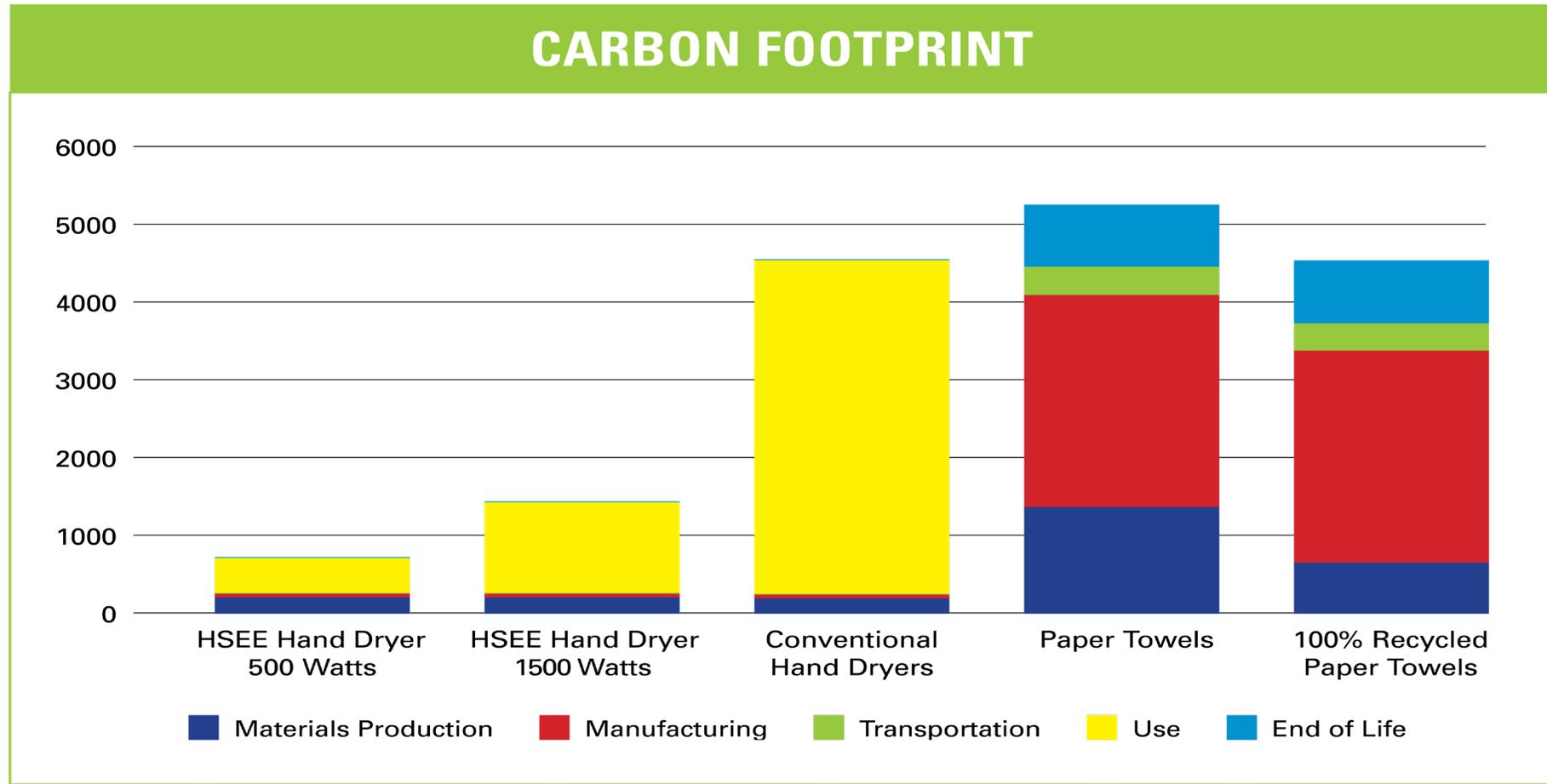


Applying the PCR to Product Selection



“The hand dryer market, like so many others, is inundated with knockoff products and manufacturers making unsubstantiated claims. Architects and specifiers may approve ‘or equal’ products that are not true equivalents. The same is true for buyers looking to compare and purchase the best product for their facilities. All products need to be evaluated by the same set of rules and reporting guidelines—for hand dryers, that rule is the new global PCR from UL Environment,” says William Gagnon, vice president of marketing and sales for a large hand dryer manufacturer and PCR committee chairman.

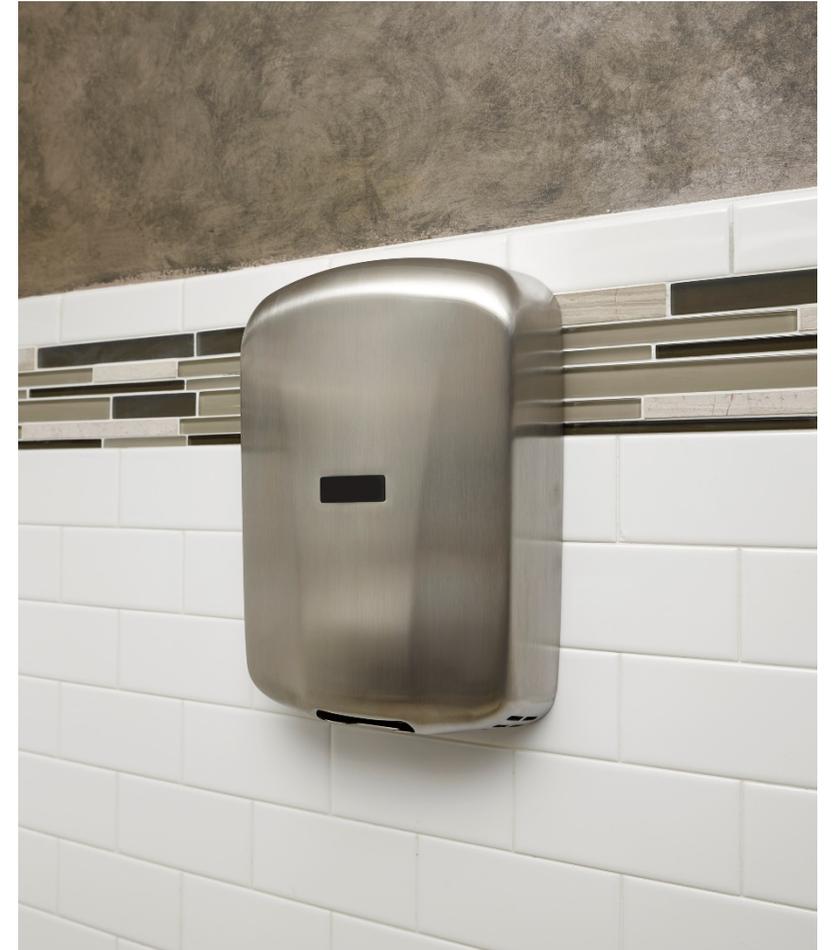
Using an LCA in Product Evaluation



Using an LCA in Product Evaluation

The results show that the HSEE hand dryer reduces the environmental impact of hand drying by 50 percent to 75 percent.

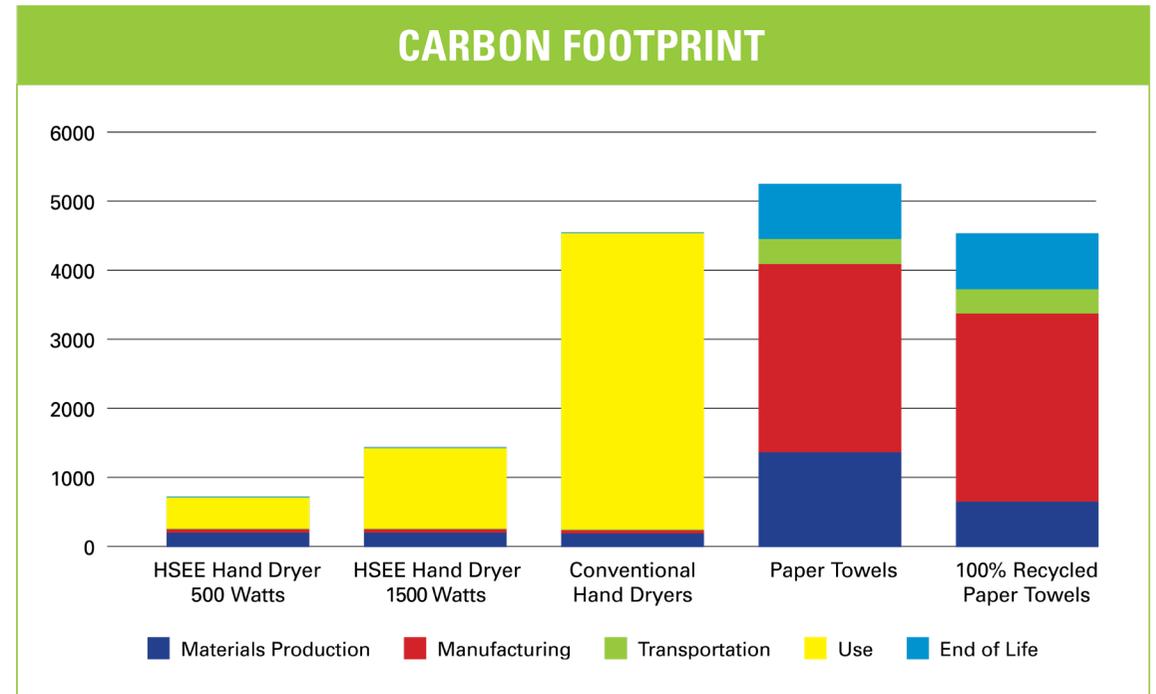
Then, a wide variety of environmental impact categories were evaluated, and yet again, the HSEE proved to provide an environmental advantage in each category. In addition to reducing climate change impacts (carbon footprint), the HSEE dryer also reduced the use of nonrenewable energy, impacts on ecosystems, and emissions that damage human health.



Using an LCA in Product Evaluation

In comparison to paper towels, the combined environmental impact of producing the paper towels and associated materials far exceed the impact from the use of a hand dryer. Although the use of recycled paper fibers in the towels may reduce some of the impacts of this system, even at 100 percent recycled content, the HSEE dryer still maintains a significant margin of benefit.

A wide variety of sensitivity tests and scenario evaluations conducted under an LCA demonstrate that the margin of benefit for the HSEE dryer over other evaluated methods is quite substantial and not dependent on certain assumptions or conditions. A test of uncertainty in the results shows that the confidence in the benefit of the energy-efficient hand dryer, in comparison to the other systems, is quite high. Particularly in comparison to paper towels, the combined environmental impact of producing the paper towels and associated materials far exceed the impact from the use of energy-efficient dryers. Among the sensitivity tests that have been conducted are variation in the amount of recycled content for the towels, the methods for determining the impacts of recycled content, the assumed source of electricity, and the behavior of the user.



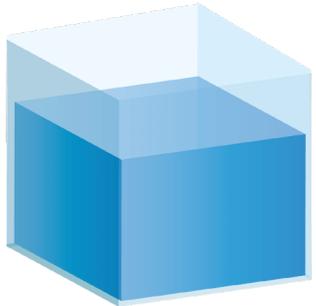
Using an LCA in Product Evaluation

The LCA scenarios regarding user behavior reveal the important role that the user plays in determining the overall impacts of each system.

High-intensity users will cause a significantly larger impact because the increase is nearly in proportion to the amount of dry time or amount of towels used. However, even high-intensity users of the HSEE system remained at a lower level of impact than low-intensity users of other systems.



REDUCE



WATER
UP TO 50%



COST
OVER 90%



CARBON
OVER 70%

Using Transparency to Create Greener Restrooms

Using Transparency to Create Greener Restrooms

Let's face it—restrooms are challenging spaces to turn green. They're zones of energy intensity, with high water usage and waste generation. However, careful product selection and planning can turn water, energy, and dollar-hungry real estate into a high-efficiency, cost-conscious space.

A variety of low-flow, water-conscious plumbing fixtures exist to aid in creating more efficient restrooms, with low-flow toilets and automatic, low-flow sinks ranking among the most widespread solutions. However, there is an often-overlooked area of energy consumption in restrooms that remains: how a user dries his or her hands after washing them.



Creating More Efficient and Green Hand-Drying Solutions

Today, the two choices for hand drying in commercial restrooms are either paper towels, made from virgin or recycled content, or electric hand dryers, both traditional and high-speed. Paper towels consume resources and generate waste. Electric dryers use energy. How can a buyer or specifier best sort through and compare these very different products and their environmental impacts?

Environmental Building News (EBN) commissioned a group of life-cycle analysis experts to perform a comparison of the four common methods of hand drying: 1) virgin paper towels, 2) recycled paper towels, 3) traditional electric hand dryers, and 4) high-speed, energy-efficient (HSEE) hand dryers.



Creating More Efficient and Green Hand-Drying Solutions

The results of the EBN study overwhelmingly support HSEE hand dryers as a best solution for both total cost and efficiency. The EBN study concluded that HSEE hand dryers consume less energy than paper towels, with an 80 percent reduction of energy used per hand drying versus both virgin paper and recycled paper towels.

For cost of use, the study showed that converting to a high-speed, energy-efficient hand dryer results in a 90 percent to 95 percent savings versus paper towel costs

COST PER 1,000 HAND DRIES						
Description	Mj/kg	Towels/kg	kW draw	Time (sec)	kJ/Use	Cost Per 1,000 Uses
Virgin Towel	131	352	–	–	743	\$23
Recycled Towel	81	352	–	–	460	\$23
Standard Dryer	–	–	2.2	30	222	\$1.47
HSEE Hand Dryer	–	–	1.5	10	76	\$.50

Creating More Efficient and Green Hand-Drying Solutions



Quantis, an international life-cycle assessment research firm, undertook a complete beginning-to-end life-cycle assessment (LCA) to compare the environmental performance of paper towels, 100 percent recycled paper towels, standard hand dryers, and HSEE hand dryers.

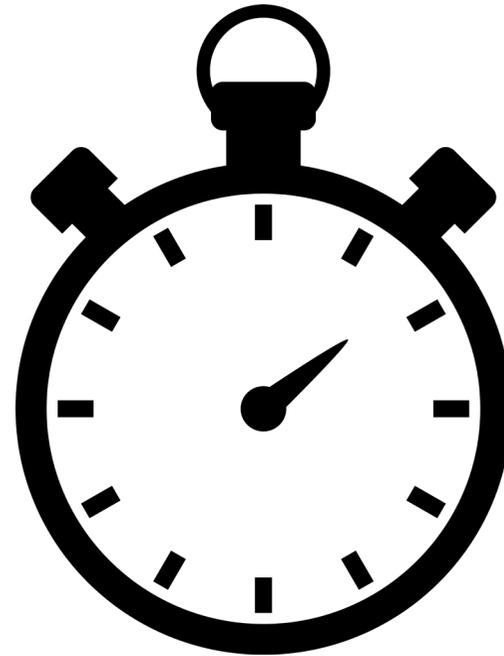
The study was peer reviewed by an independent panel of LCA experts via ISO 14040 standards. The Quantis assessment accounts for the total climate change impacts, or global warming potential, over the entire life cycle of each system. It also measures the carbon footprint of each system in kilograms of equivalent carbon dioxide (Kg CO₂ eq). Of the four types evaluated, HSEE hand dryers had a carbon footprint one-third to one-fourth the magnitude of the other choices.



Using Transparency to Create Sustainable Restroom Product Solutions

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Traditional electric hand dryers typically take 30 to 45 seconds to dry hands versus the 8 to 10 seconds needed with paper towels. Because of the dramatic amount of time needed and the user congestion resulting from waiting for an available dryer, traditional hand dryers are an unpopular application and found in a small percentage of restrooms. High speed, energy efficient (HSEE) hand dryers were developed to enhance a restroom user's experience and to create a more sustainable product. In the U.S., the first HSEE was introduced to the industry in 2001 under patented technology.



Using Transparency to Create Sustainable Restroom Product Solutions

In response, HSEE was developed. HSEE dryers use a focused, high-velocity airstream that eliminates water droplets in 3 to 4 seconds and an additional stream of heated air to blow off any excess water film, completely drying hands in 8 seconds as tested to PCR guidelines. Using 80 percent less energy than conventional hand dryers and reducing a facility's hand-drying carbon footprint by 50 to 75 percent, HSEE dryers can generate a huge environmental win for facilities and businesses.



Using Transparency to Create Sustainable Restroom Product Solutions

However, the hand dryer market, like so many others, has its own share of knockoff products and manufacturers making unsupported claims. Architects and specifiers may approve 'or equal' products that are not true equivalents or units that are not as reliable. The development and publication of standards like environmental product declarations and life cycle analyses reflect a manufacturer's commitment to transparency and encourage other manufacturers to follow suit, allowing decision makers a clear path when specifying products.



Case Study: Grand Central Terminal, New York City

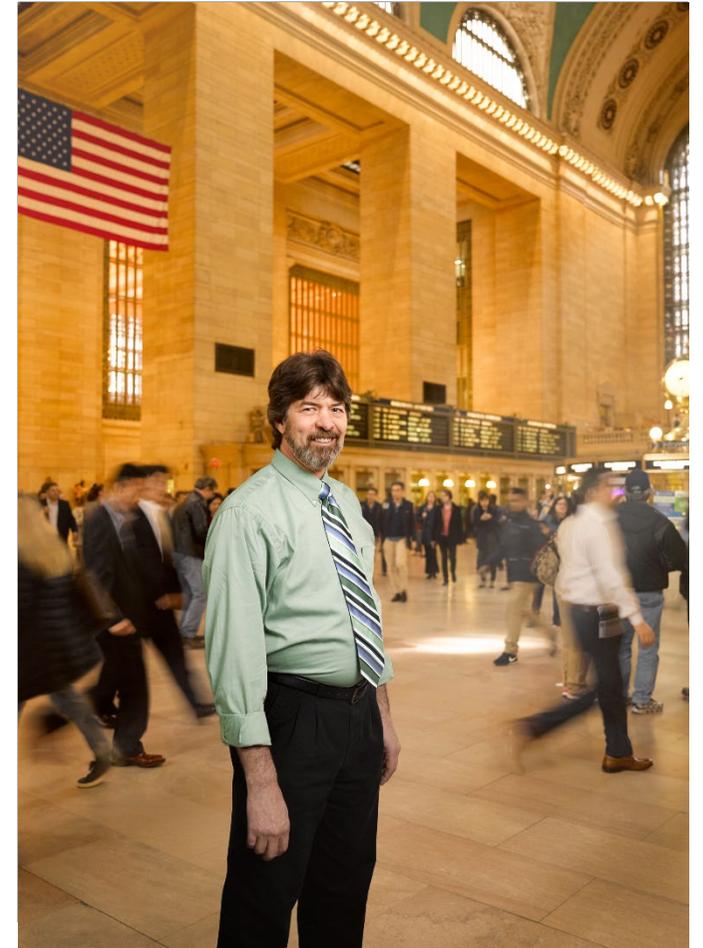
Spanning 48 acres in the heart of Midtown, Manhattan, Grand Central Terminal in New York City hosts approximately 750,000 visitors daily, 10,000 of which are lunchtime diners. In addition to housing 68 shops and 35 restaurants, the iconic landmark offers opportunities for tours, special events, and entertainment throughout the year. Esteemed for its Beaux-Arts architecture, the high-profile venue also holds another distinction: it is the busiest train station in the country.

Given its popularity and historical significance, it is hard to fathom that the terminal was once in danger of being destroyed in favor of a high-rise office complex. Through a preservation campaign led by Jacqueline Kennedy Onassis and a favorable ruling by the Supreme Court of the United States, Grand Central was listed on the National Register of Historic Places and declared a historic landmark in 1976, sparing it from demolition.



Case Study: Grand Central Terminal, New York City

“Everything we do, we must look at with sustainability in mind. We’ve made a number of upgrades to Grand Central Terminal over the years, including updating the electrical, plumbing, and lighting systems led by our sustainability team,” says Steve Stroh, assistant deputy director of electrical and mechanical maintenance.



Case Study: Grand Central Terminal, New York City

“With the HSEE application, we don’t have to worry about paper towels ending up outside the garbage cans, clogging toilets, or plugging up our sewers. It’s eliminated the need for paper towels in our restrooms.” Stroh and his team were also pleased with the green certifications available with the selected HSEE product.



Case Study: Grand Central Terminal, New York City

750,000 Daily Visitors.

24 Hand Dryers.

Zero Paper Towels.

Case Study: Grand Central Terminal, New York City



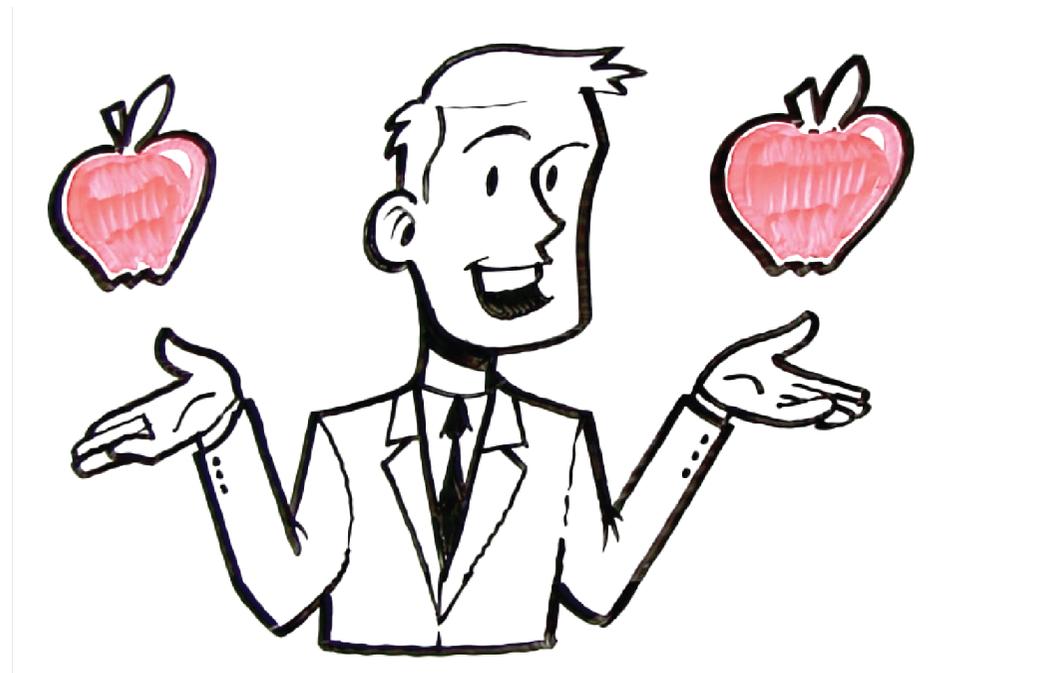


Building on Transparency to Obtain Certifications

Building on Transparency to Obtain Certifications

Manufacturers committed to transparency and cognizant of the cradle-to-grave environmental impacts of the products they create offer the best allies to help facilities qualify for LEED, Green Globes, and other program credits, and to satisfy corporate and government sustainability goals.

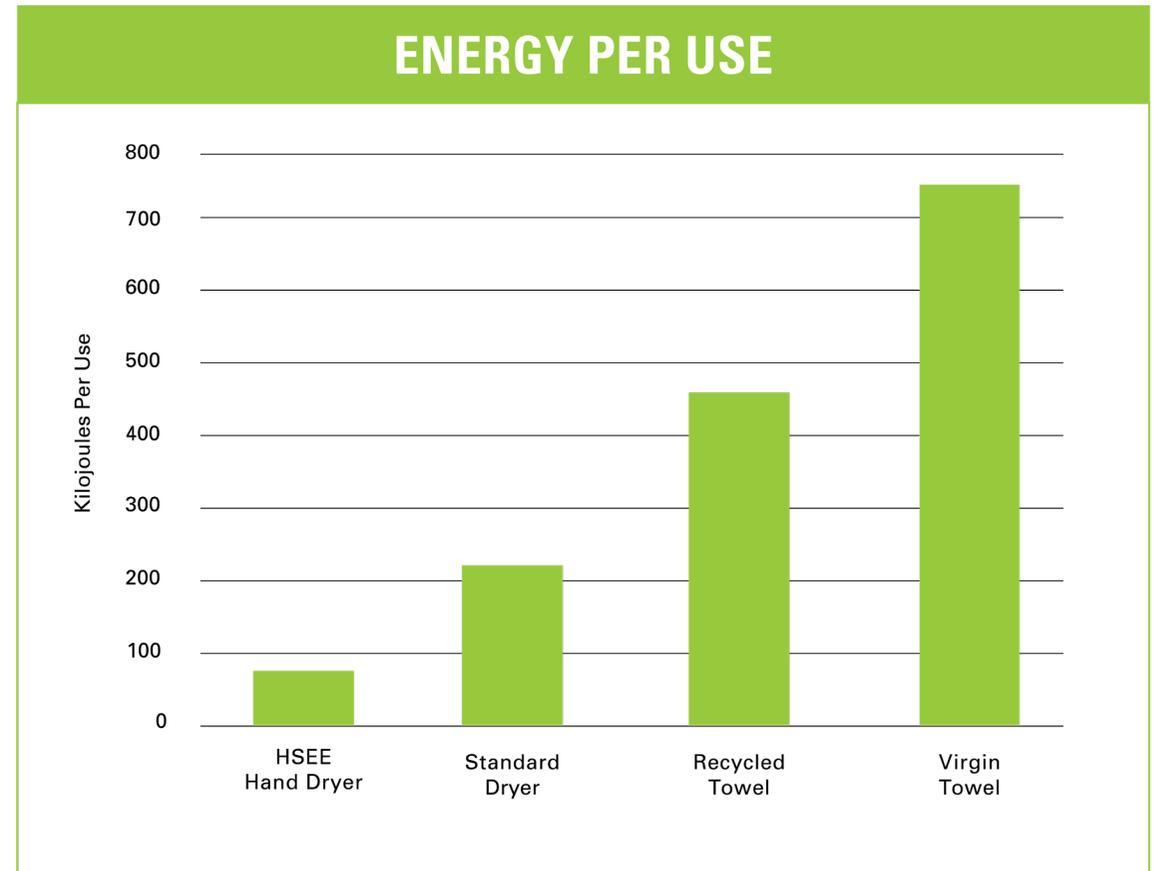
Using EPDs, PCRs, and LCAs, an architect is equipped to accurately forecast the energy use, reduction in energy consumption, cost savings, and comparative environmental impact of a product. Held to third-party verification and international standards, an architect can place his or her confidence in the veracity of this information. The PCRs standardized evaluation guidelines and reporting allow for the specifying community and buyers to conduct a more apples-to-apples comparison of hand dryers and ultimately make a more informed decision based on credible, third-party testing.



Building on Transparency to Obtain Certifications

For example, a leading HSEE manufacturer publishes independent, third-party-verified data that has been tested via a PCR, demonstrating energy use per hand dry, cost savings, and carbon footprint reduction. The product reports more than an 80 percent reduction of energy per the examples given for HSEE hand dryers, the manufacturer published use versus recycled paper towels; a 98 percent cost savings per 1,000 uses versus paper towels; and a 75 percent reduction in carbon footprint versus recycled paper towels.

The architect may confidently propose HSEE as an environmentally superior solution, in comparison to paper towels, as the combined environmental impact of producing the paper towels and associated materials far exceed the impact from the use of the HSEE dryer.



Building on Transparency to Obtain Certifications

Given the verifiable product performance data, the architect also equips the project to easily qualify for environmental program credits. Under this example, when pursuing LEED v4 certification, the HSEE could earn:

- Energy and Atmosphere (EA) Credit: Optimize Energy Performance
- Materials and Resources (MR) Credits: Building Product Disclosure and Optimization
- Environmental Product Declarations for Sourcing of Raw Materials
- Materials and Resources (MR) Credit: Solid Waste Management – Ongoing (LEED O+M projects only)
- Indoor Environmental Quality (EQ) Credit: Green Cleaning – Custodial Effectiveness Assessment (LEED O+M projects only)



Rating Systems

The following certifications increasingly require products with demonstrable sustainability and third-party certifications:



LEED: In March 2000, the U.S. Green Building Council formally released the LEED Green Building Rating System. Today, nearly 10,000 public and private building projects in the United States and abroad have used LEED as their certification standard.



Green Globes: Green Globes, a product of the Green Building Initiative (GBI), is a green management tool for the building design and construction industry. Adapted from a Canadian protocol, Green Globes was introduced into the United States in 2004. Since that time, 450 buildings across the United States have successfully achieved Green Globes certification. Green Globes incorporates a whole-building design to calculate an energy performance value, as well as prescriptive criteria for individual labeled efficiencies.

Product Guides



BuildingGreen Approved—Environmental Building News: A leading newsletter on environmentally responsible design and construction since 1992, EBN is independently published and advertisement free. The research and reporting is uncompromised by corporate or industry sponsorships.



GREEN CATALOG, Green Hotels Association: The Green Hotels Association researched environmentally friendly, energy, and water-saving products and lists recommendations of best products in this catalog for the lodging industry.



Operating in 41 States and Canada, the Green Restaurant Association (GRA) works with restaurants, manufacturers and distributors to fulfill its mission of greening the restaurant industry.

Voluntary Green Programs and Memberships



Architecture 2030 for Products: Issued by Architecture 2030 in response to the climate change crisis, the Challenge seeks creative leaders from the global architecture and building community to adopt, design, and manufacture green and low-carbon products that reduce their carbon footprint by 30 percent below the product average by 2014 and then incrementally improve that reduction to 50 percent by the year 2030.



U.S. Green Building Council (USGBC): USGBC's mission is to transform the way buildings and communities are designed, built, and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life.



Green Building Initiative: The mission of the Green Building Initiative is to accelerate the adoption of building practices that result in energy-efficient, healthier, and environmentally sustainable buildings by promoting credible and practical green building approaches for residential and commercial construction.

Case Study: Brooklyn Bowl

Brooklyn Bowl, a 16-lane bowling alley, music venue, and restaurant, is equally known for its aesthetic as its entertainment. Described as “one of the most amazing places on Earth” by Rolling Stone, Brooklyn Bowl has played host to a slew of top acts, including Guns N’ Roses, Quest Love, Beck, and Elvis Costello, and now counts among its features industry-leading HSEE dryers.

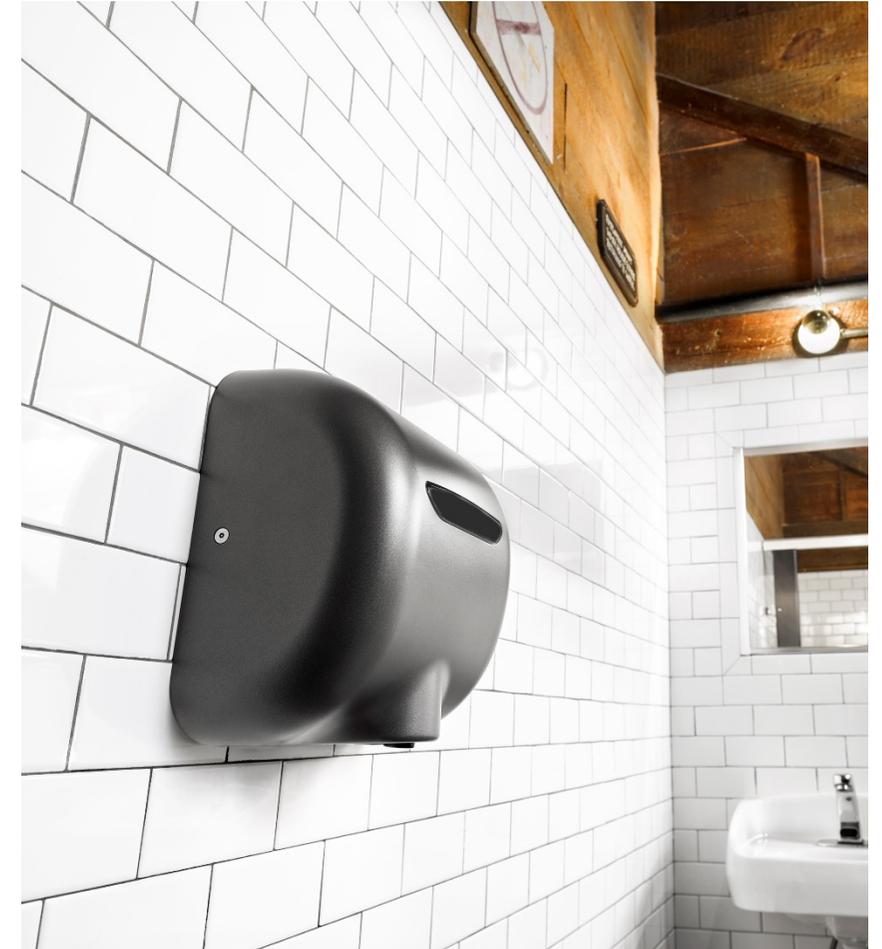
Significant planning and construction were necessary to convert the former Hecla Iron Works building, a 100-year-old factory, into the current entertainment space as its known today. Likewise, some interesting energy-saving initiatives had to be implemented in order for the facility to achieve LEED certification—making it the first bowling alley worldwide to hold that distinction—including the adoption of string-mounted pin spotters, reclaimed cork and recycled truck tire floors, 100 percent wind-powered electricity, and high-speed, energy-efficient hand dryers.



Case Study: Brooklyn Bowl

“Part of the green initiative was that hand dryers were going to be a better choice for us in terms of energy consumption and waste,” says Stephen Schwarz, general manager at Brooklyn Bowl. “[HSEE] dryers were part of the plan from the very beginning.” The HSEE dryers were the only dryers in the industry to be tested by guidelines from the Global Hand Dryer PCR published by UL Environment.

The selected HSEE product uses 80 percent less energy than conventional hand dryers and represent a 95 percent cost savings when compared to paper towels, eliminating associated labor, maintenance, and waste. An independent life-cycle assessment, peer-reviewed to ISO 14040 standards, confirmed that the selected dryer reduces the carbon footprint of hand drying by 50–75 percent when compared to both traditional hand dryers and recycled paper towels. An important consideration was selecting a dryer that was made in the United States; finding one that was Made in USA Certified helped the facility qualify for LEED v4 Credits—the most of any dryer in the industry, in fact.



Case Study: Brooklyn Bowl

In addition to fitting into the green initiative, surprisingly the HSEE dryer also met the upscale and trendy design of the facility. For a project that was curated down to the smallest detail, it was important for the hand-drying solution to fit in with the overall aesthetic of Brooklyn Bowl. “It’s an iconic Brooklyn place with an iconic look,” Schwarz says. “We put a lot of thought and effort into the way this place looks, including the bathrooms. And I think the [dryer] has a sophisticated look that really fits the feel of the place and carries it through. So you’re not in this beautiful place and walk into something that looks like a gas station bathroom. You’ve got a great look in there. And the product fits right in.”

In a facility that hosts 2,000–3,000 visitors a day, performance, reliability, and sustainability were all important factors for consideration. “The dryers are great,” Schwarz says. With all the traffic through our bathrooms, we’ve had great success with them. It keeps trash off the floor and keeps clogs out of the toilets. Bathrooms are cleaner and guests are happier.”



Putting It All Together: Defining High-Efficiency Goals for Hand Dryers

When evaluating a hand dryer manufacturer's information, defining benchmarks like performance and sustainability means meeting sustainability goals for the restroom space and ultimately the entire project. A specification list should include a review of the proposed product's:

Performance

- Dry time (<15 seconds is preferable)
- Availability to adjust speed and sound control
- Availability of adjustable heat control: high, medium, low, and off
- Externally visible service LED or other indicator for maintenance
- Adjustable sensor range to prevent misfires
- The manufacturer's performance or product failure rate (less than 1 percent is a target goal)

Verified Product Savings

- Quantifiable savings of time, money, and to the environment
- 80 percent less energy than conventional hand dryers
- 95 percent cost savings versus paper towels



Putting It All Together

Sustainability

- No more maintenance and upkeep from paper towel waste
- Certifications and program participation: e.g., building green approved and helps qualify for several LEED credits
- EPDs, PCRs, LCAs (additional LEED credit for EPD certification)
- Manufactured in USA (additional LEED credit)
- Published and independently verified forecast reduction in carbon footprint

Hygiene

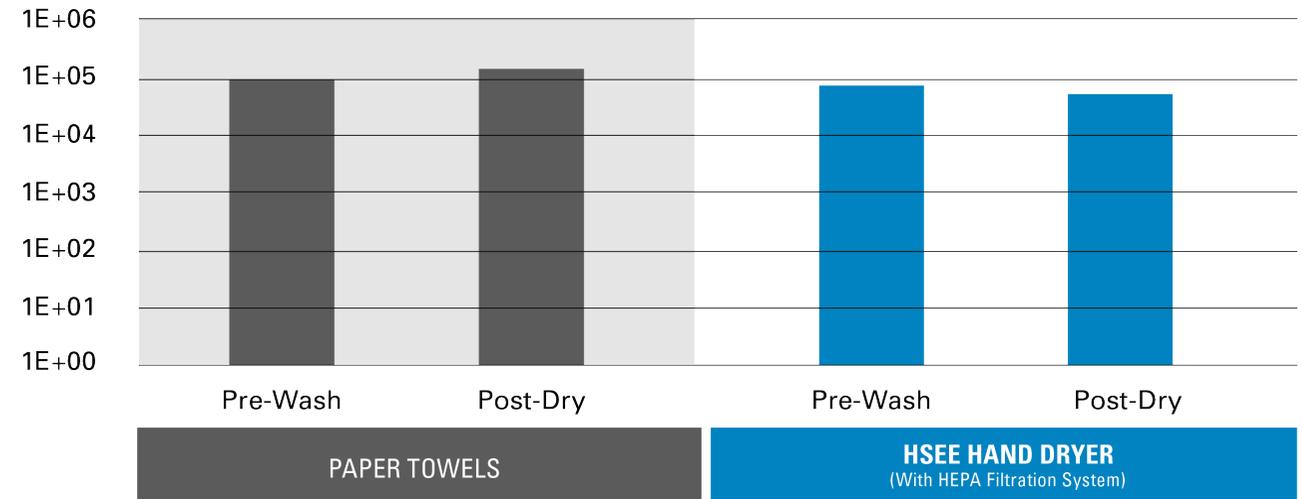
- HEPA filtration systems with demonstrated performance, e.g., proven to remove 99.97 percent of potentially present bacteria at 0.3 microns from the air stream
- Technology, such as antimicrobial wall guards, designed to protect walls from water and inhibit the growth of bacteria



Putting It All Together

As high-speed, energy-efficient hand dryers have grown rapidly in popularity, some concern has been raised about their hygienic properties. However, over the past 40 years, numerous scientific researchers have validated the hygienic efficacy of heated air as a drying medium. These independent, third-party studies were conducted with careful methodology at major academic or medical institutions.

BACTERIA COUNTS BEFORE WASH AND AFTER DRY (DRYING WITH PAPER TOWELS OR HSEE HAND DRYER)



Microchem Laboratory is a contract microbiology lab offering a broad range of testing capabilities performed by a staff of specialized, experienced microbiologists. The graph shows the average number of bacteria (CFU = Colony Forming Units) present before washing and after drying.

CONCLUSION: NO SIGNIFICANT CHANGES ARE OBSERVED BETWEEN PRE-WASH AND POST-DRY BACTERIA LEVELS WHEN DRYING WITH PAPER TOWELS OR DRYING WITH THE HSEE HAND DRYER WITH HEPA FILTRATION SYSTEM.

Putting It All Together

HAND DRYERS = HAND HYGIENE

“Once your hands are cleaned, you should dry them thoroughly by using paper towels or a warm air dryer.”



**World Health
Organization**

“We have no evidence that hand dryers are spreading the coronavirus...”



*“Are hand dryers spreading the coronavirus?
Our experts said no. There is no evidence that these hand dryers are spreading the virus.”*
- Dr. Larry Chang



**JOHNS HOPKINS
MEDICINE**

Putting It All Together

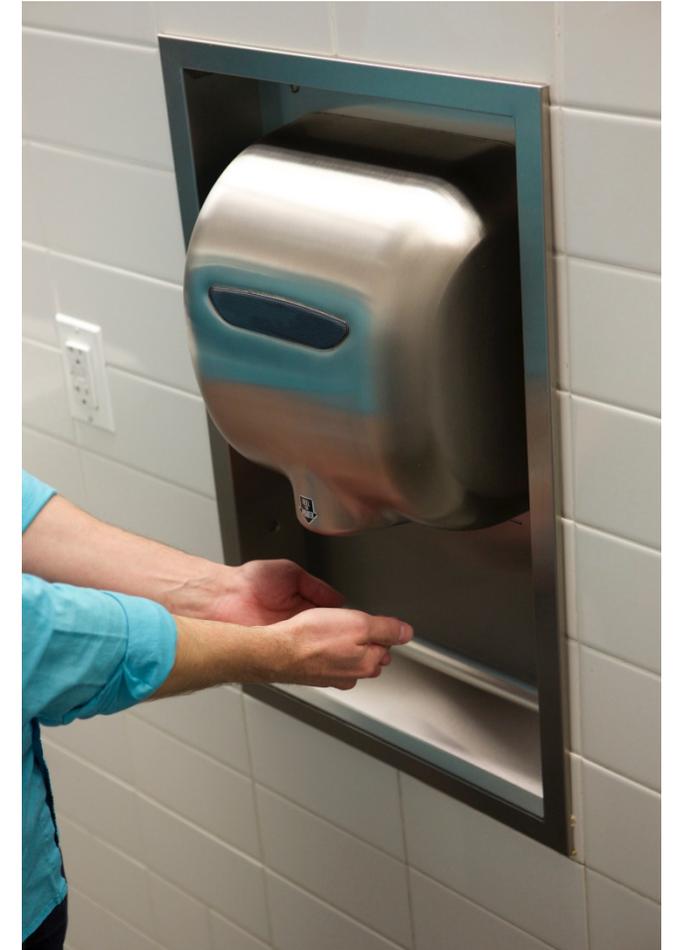


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Putting It All Together

In 2000, Dr. Franklin R. Cockerill III and his colleagues at the Mayo Clinic in Rochester, Minnesota, conducted a randomized trial to determine the effects of four hand-drying methods for removing bacteria from washed hands. In a yearlong study of 100 people who volunteered to have their hands contaminated with bacteria before washing them, researchers found that proper hand washing got rid of the same amount of germs regardless of drying style. Results were reported in Mayo Clinic Proceedings (75:705 – 708). Scientist P.D. Meers and K.Y. Leong's letter to the Journal of Hospital Infection stated: "[There is] no bacteriological reason to exclude [hand dryers] from the clinical areas."

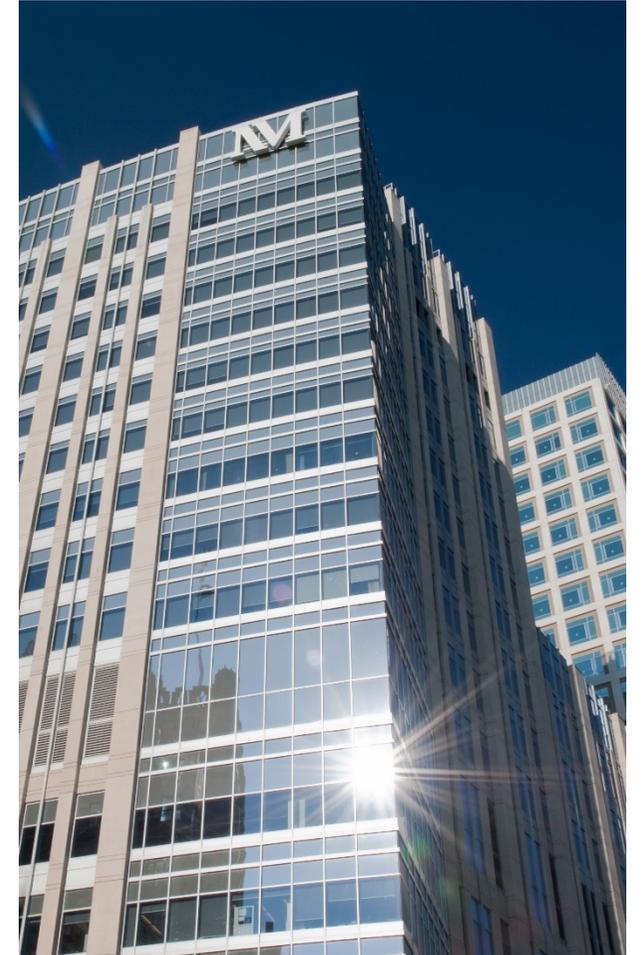
While high-speed hand dryers are regarded as a hygienic hand-drying choice in facilities around the world, specifiers and facility managers should research their options carefully, as all hand dryers are not created equal. Manufacturer designs vary between a traditional style with hands positioned under the air outlet or a trough-style in which hands are placed into a trough-like area or enclosure.



Case Study: Northwestern Memorial Hospital

In 2010, Northwestern Memorial Hospital (NMH), one of the country's premier academic medical centers, launched a major hand-washing campaign aimed at employees, patients, and visitors: clean hands every time. NMH found that two-thirds of Americans fall short in adopting good hand-washing habits, with some not washing their hands at all. Yet 80 percent of infections are transmitted through touch. If hands are kept clean, the transmission of germs from person to person is greatly reduced. As part of a hospital-wide education campaign on the importance of proper hand hygiene, NMH even self-produced a sing-a-long video parody featuring hospital staff demonstrating their best hand-washing techniques.

While hospital administration was encouraging its employees, patients, and visitors to do their part to prevent the spread of viruses, Northwestern Memorial Hospital's Director of Facilities Engineering David Stout was also beginning his own campaign—a major hospital refurbishment program that would include equipment and product upgrades to the hospital's restrooms. “A primary focus has been reducing maintenance needs while improving sanitation in the hospital's hundreds of staff and public washrooms,” Stout says. “As washrooms are renovated, we're installing equipment and materials that are much easier to maintain, have longer lifespans, and keep the restrooms sanitary.”



Case Study: Northwestern Memorial Hospital

PROBLEM

- Paper towels flushed down low-flow toilets caused clogged toilets
- Dirty, wet paper towels piled up around trash receptacles



Case Study: Northwestern Memorial Hospital



Case Study: Northwestern Memorial Hospital

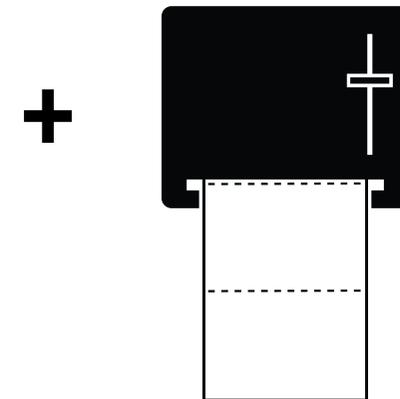
Unlike conventional hand dryers, which average 30 to 45 seconds of drying time, the HSEE model selected dries hands three times faster, in around 10 seconds, and uses 80 percent less energy than conventional hand dryers. The HSEE dryer method also represents a 95 percent cost savings when compared to paper towels, reduces maintenance, and improves restroom hygiene. The selected product also is the only hand dryer to be Made In USA Certified, the first hand dryer to be Building GreenApproved(Formerly GreenSpec Listed), and helped the facility qualify for multiple LEED credits.

Installation of the high-efficiency hand dryers complemented the hospital's existing low-flow plumbing fixtures: toilets, sinks, and urinals. It also saved the hospital an estimated \$20,000 in initial annual savings over paper towels.

To date, more than 120 dryers have been installed at Northwestern Memorial Hospital's main campus, with more to come as the hospital embarks on the building and opening of two new facilities.

★ Please remember the **exam password TOOLBOX**. You will be required to enter it in order to proceed with the online examination.

LOW FLOW



= NO FLOW



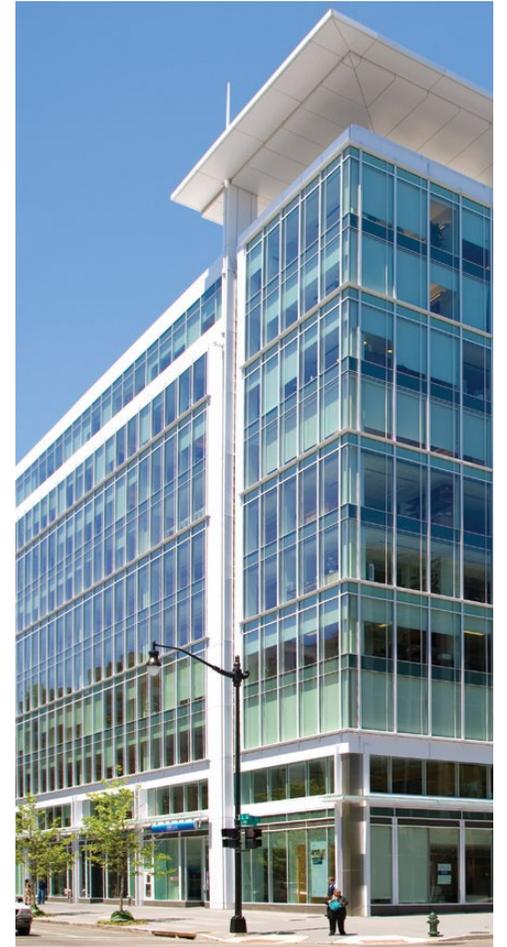
Putting Confidence in Green

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“Restroom fixture technology has evolved significantly in the past 10 years,” says Ken Wilson, principal at Envision Design, the architecture firm that led the USGBC’s recent redesign project.

The technological developments that created the high-speed, energy-efficient hand dryer category and set a new standard for performance, reliability, and customer satisfaction are evidence of that evolution.

With the rapid pace of innovation, independent, third-party certifications and assessments provide the tools architects and decision-makers need to make a confident, accurate product decision. Life-cycle assessments, environmental product declarations, and product category rules level the playing field by creating transparency, allowing for real comparison of product efficiency and performance while helping projects achieve desired certifications, such as LEED or Green Globes. They allow leading manufacturers to celebrate product accomplishments while ushering in a new age of transparency. Designers and architects can more securely forecast cost savings, source reductions, and qualifications. Leading product manufacturers are now working closely with architects, interior designers, and specifiers to serve their visions and complement their designs, bringing the restroom up to the standards of the entire project.



THANK YOU.



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