



Where Blue Meets Green



The story of green

For decades, energy consumption far outweighed the concern for water in the overall sustainability scene. Though energy still plays a large role, water conservation is pushing forward to a more prominent position. With the world's population at more than seven billion and growing — and given that only around 1% of the world's total water supply is fresh — it's clear that freshwater is a more precious resource than ever. Over the last few decades, more and more business owners and institutions are realizing the critical need to conserve water, as well as how that affects their fiscal bottom line.

"The UN and Shell both predict that world demand for potable water, food, and energy will rise 40 to 50 percent by 2030."

— Gensler Design Forecast 2016

Where blue meets green

T&S has been a leader in water conservation for decades, engineering products that set new standards for both high efficiency and high quality. Today, we're bringing the blue of T&S to a new level of green, creating products and implementing manufacturing processes that flow directly from our commitment to sustainability. In the end, it's all about helping save natural and financial resources for our customers. It's our mission — and it's part of everything we do.



Recycling materials

T&S recycles nearly **100%** of all corrugated cardboard, plastic shrink wrap, trays and office paper — totaling nearly **200,000** pounds of material each year.

Joining forces

As a leader in sustainability, we've proactively formed partnerships with organizations that share our commitment to water conservation. From the USGBC®, the creators of the LEED® Rating System, to EPA's WaterSense and the Alliance for Water Efficiency, we're proud to work together with other conservation entities to raise awareness, educate others and conserve resources. When you choose T&S products, you are an active participant in moving toward the goal of true sustainability.



Sustainable products

Over 20 years ago, we created our first low-flow spray valve to help conserve water, energy and money. Our team of design engineers continues to create industry-leading, water-efficient products. As the market continues to demand more green plumbing and foodservice fixture fittings, T&S will develop innovative solutions that meet the need.

- Low-flow spray valves
- Electronic faucets
- Aerators
- Ceramic cartridges
- Metering faucets



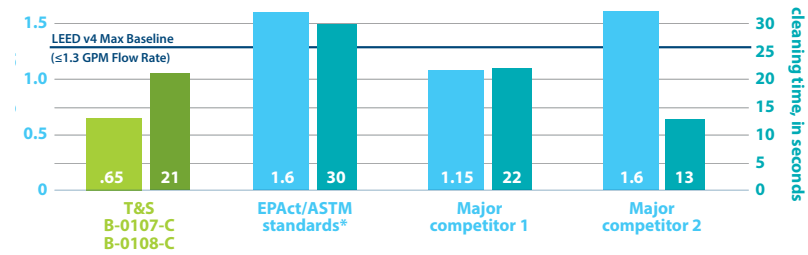
Codes and Compliance

Every T&S fixture fitting is manufactured to the highest standards in the industry – and **certified** by a wide variety of third party national and international organizations, including CSA, UL, NSF, ASSE and more.



Low-flow pre-rinse spray valves

While low-flow technology is more important than ever, it is critical that equipment still maintain a sufficient level of performance — like fast, efficient cleaning times for pre-rinse units. T&S pre-rinse spray valves pioneered water efficiency and conservation in the pre-rinse unit category. While LEED v4 flow rates are baselined at ≤ 1.3 GPM, the newest T&S pre-rinse spray valves are leagues ahead — offering 0.65 GPM and saving you up to 100,000 gallons per year.



* The Energy Policy Act of 2005 (or EPAAct) states that all pre-rinse spray valves used for warewashing must have flow rates of 1.6 GPM or lower, while ASTM F2324 states that all pre-rinse spray valves should pass a standardized cleanability test in 30 seconds or less.



Electronic faucets

Saving as much as one gallon per hand wash, T&S electronic faucets are an ideal water-saving option for a variety of applications. These smart faucets only turn on when a user's hands are under the spout and flow at a predetermined low-flow rate. And now, with the Hydro-generator in place, you can save both water and energy. As one of three power options for T&S electronic faucets, the Hydro-generator harnesses the flow of water to generate enough electricity to power its next use.

LEED tip: Add a 0.5 GPM non-aerated outlet device and increase your water savings and contribution to LEED points under the Water Efficiency category. (If using a hydro-generator, a 1.0 GPM or greater flow rate is required.)



Aerators

The perfect product to maximize water savings, T&S aerators provide flow control by restricting water usage to between 0.35 and 2.2 GPM. This range of flow rates allows operators to achieve proper levels for both conservation and regulatory requirements on new products and retrofits.



Ceramic cartridges

Sometimes a small leak can be a big culprit in water consumption. Our durable Cerama cartridges operate without seals or washers, eliminating most sources of a leak. Cut water usage by up to 20% and reduce or eliminate maintenance with a simple switch to T&S Cerama cartridges.



Metering faucets

T&S metering faucets significantly reduce water usage and save energy by regulating water flow and duration without using even the minimum amount of energy required by electronic faucets. Metering cartridges are preset for a 10 second flow time, but may be reset during installation.

LEED tip: Duration and flow can significantly contribute to LEED v4 points in the Water Efficiency category.



Material reuse

By running manufacturing coolant through a centrifugal recover loop, T&S recycles nearly **9,000** gallons annually — enough to fill more than 160 55-gallon drums every year.

LEED

Administered by the United States Green Building Council® (USGBC), LEED® (Leadership in Energy and Environmental Design) is an internationally recognized third-party certification for high-performance sustainable buildings. LEED awards building projects varying designations of certified, silver, gold or platinum based on the points earned using green strategies and technologies.

Across all versions of LEED, T&S products contribute to initiatives found in the three main LEED rating systems:

- Building Design + Construction (BD+C)
- Interior Design + Construction (ID+C)
- Existing Buildings Operations + Maintenance (O+M)

Specific credit numbers vary based on LEED rating system and associated project type, but in general, T&S products, such as faucets and pre-rinse spray valves, can help contribute to the following categories' prerequisites and credits:

Versions + Systems

LEED v3 (2009) will remain relevant until 2021 as buildings registered under that system complete design and construction.

LEED v4, set to become mandatory in November 2016, is a major overhaul, with technical changes estimated to be above 40%. Some of these developments address the increasing environmental concern for conserving freshwater.

LEED v3

Water Efficiency

WE Prerequisite: Indoor Water Use Reduction (meet or exceed baseline requirements)

WE Credit: Indoor Water Use Reduction (exceed baseline requirements by a designated percentage)

Materials and Resources

Not applicable: Mechanical, Electrical and Plumbing (MEP) products excluded from contributing to points

Innovation in Design

ID Credit: Innovation in Design (multiple options for obtaining points within credit, typically via Path 2 Exemplary Performance.)

Regional Priority

RP Credit: Regional Priority (options for obtaining credit vary by region)

LEED v4

Water Efficiency

WE Prerequisite: Indoor Water Use Reduction (meet or exceed baseline requirements)

WE Credit: Indoor Water Use Reduction (exceed baseline requirements by a designated percentage)

Materials and Resources

Mechanical, Electrical and Plumbing (MEP) products are optional to include in LEED v4. If the project does use this option the following applies:

MR Credit: Building Product Disclosure and Optimization – Sourcing of Raw Materials – Option 2 Leadership Extraction Practices – Recycled Content

Innovation

IN Credit: Innovation (multiple options for obtaining points within credit, typically via Option 3 Additional Strategies/Exemplary Performance.)

Regional Priority

RP Credit: Regional Priority (options for obtaining credit vary by region)



Energy efficiency

T&S recognizes the need to conserve resources beyond their products, installing energy-efficient heating and cooling units, with variable speed controls as well as new lighting in their manufacturing facilities. In fact, the lighting upgrade has reduced the plant's electrical consumption by **6.0%** (400-watt high-pressure sodium to T-5 fluorescent, parking lot lighting upgraded to LED).

Water Efficiency

Both LEED v3 and LEED v4 continue the required prerequisite of 20% less water than the baseline calculation. Many T&S products meet or exceed these requirements, ensuring certain projects are eligible for **contributing toward 1 to 12 LEED points** within the Indoor Water Use Reduction credit, depending on the rating system and based on the percentage of water savings for the project. Though other plumbing fixtures like showers and toilets must also pull their weight, T&S products can help earn maximum points in this category.

	Current Baseline
Commercial lavatory (restroom) faucets	2.2 gallons per minute (gpm) at 60 pounds per square inch (psi), private applications only (<i>hotel or motel guest rooms, hospital patient rooms</i>) 0.5 (gpm) at 60 (psi) all others except private applications 0.25 gallons per cycle for metering faucets
Commercial pre-rinse spray valves (for foodservice applications)	Flow rate ≤ 1.6 GPM (v3) Flow rate ≤ 1.3 GPM (v4) (<i>no pressure specified; no performance requirement</i>)

Materials and Resources

While plumbing products are excluded from earning points in this category in LEED v3, it is an option in LEED v4 within Building Product Disclosure and Optimization credits: Sourcing of Raw Materials. T&S Brass products do contain **90% post-consumer recycled content material**, and we recycle all of our **brass chips** from machining, buffing and polishing to reduce our demand for virgin mined materials.

Innovation in Design / Innovation

Innovation in Design (v3), or simply Innovation (v4), is a category that encourages creative strategies for conservation. **One to five points** can be earned through sustainable choices that go beyond the scope of the other point categories. T&S products can contribute in this area, due to significant water conservation features that go “above and beyond” in the Water Efficiency category.

Regional Priority

The environmental needs of Michigan vary significantly from those of Arizona. LEED takes this into account through the Regional Priority category, which is **worth from one to four points**. Selected by the USGBC's regional councils, area-specific concerns are identified and plugged into the criteria for the Regional Priority category. Corresponding point values are available for buildings that address particular water zone needs. Water conservation frequently qualifies as a priority, since freshwater has become of great concern in specific locales.



Recycling materials

100% of the polishing dust that accumulates during the manufacturing process is sold to a company which extracts the metals (copper, for instance) from the dust for reuse — preventing it from ending up in the landfill.





Reducing our footprint

Whether it's through our careful recycling efforts or through the thoughtful engineering of our durable product lineup, T&S is committed to reducing our environmental impact. We're delivering longer usability — which translates to fewer product replacements — and we've cut our overall carbon footprint by an average of **5% year-over-year** for the last several years. At T&S, we're putting our principles into action — and the impact speaks for itself.

Whether you're striving to meet LEED certification or just want a sustainable solution that conserves our freshwater resources and saves you money, you'll find reliable, innovative products from T&S. This is a company with a conscience and a record to back it up — providing sustainable products for decades with a focus on resource conservation. So turn on the tap and save water with T&S. It's where blue meets green, with Reliability Built In.™

To learn more about T&S and our sustainable products and processes, visit www.tsbrass.com or call us at (800) 476-4103.



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