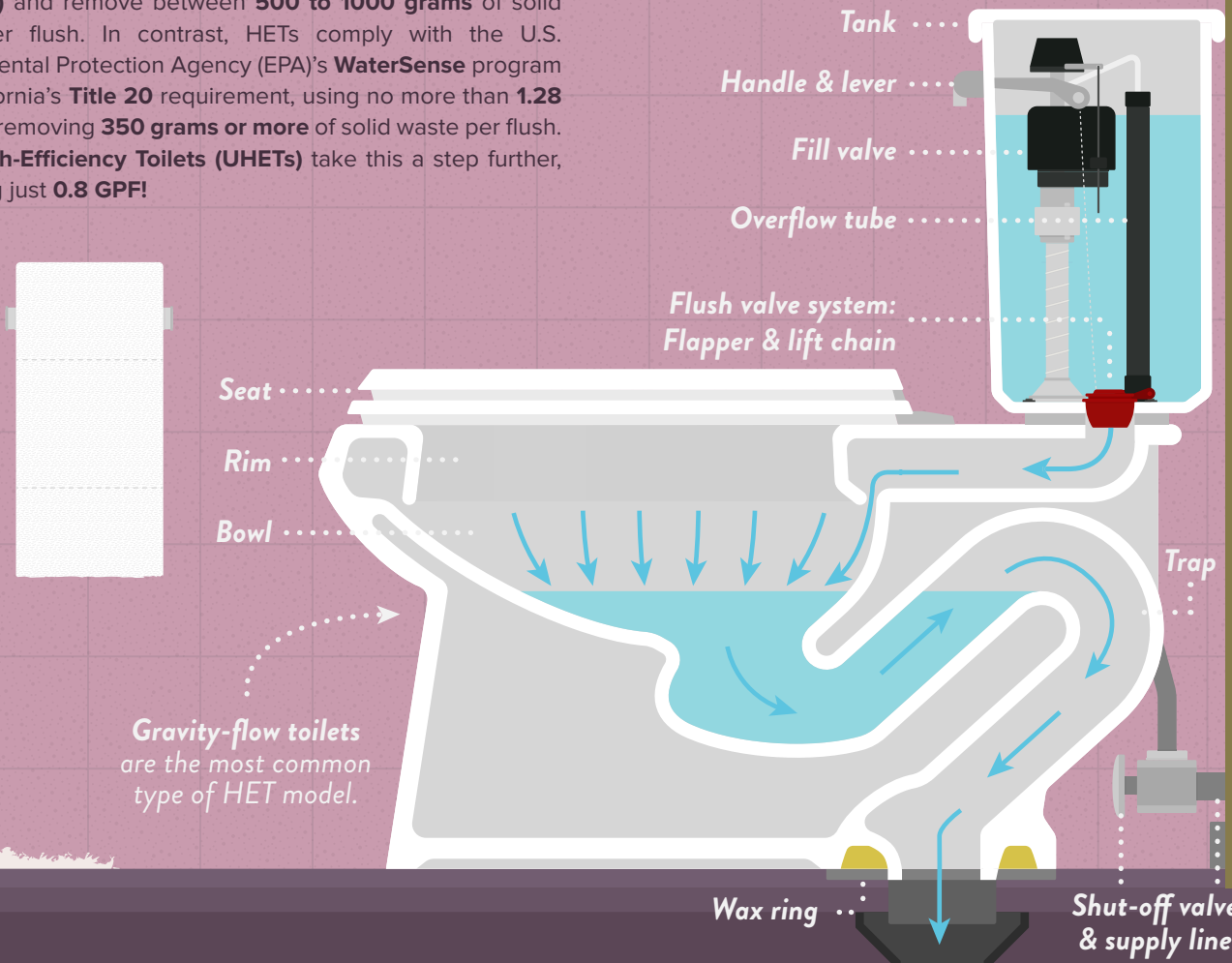
ecoblock™

FIXTURES 101

KNOW YOUR *EFFICIENT TOILETS*

01 *WHAT ARE HIGH-EFFICIENCY TOILETS?*

High-Efficiency Toilets (HETs) use **less water per flush**. Typical **low-flow toilets** meet the federal standard of **1.6 GPF (gallons per flush)** and remove between **500 to 1000 grams** of solid waste per flush. In contrast, HETs comply with the U.S. Environmental Protection Agency (EPA)'s **WaterSense** program and California's **Title 20** requirement, using no more than **1.28 GPF** and removing **350 grams or more** of solid waste per flush. **Ultra High-Efficiency Toilets (UHETs)** take this a step further, delivering just **0.8 GPF!**



02 *PARTS OF A TOILET*

+ Tank: The toilet tank sits on top of and behind the bowl. It contains devices that instigate flushing and control, and control the tank's refill.

+ Handle: Located on the upper left front or side of the toilet tank, the handle is pushed or pulled to initiate the flush. This mechanism triggers the **lever**, opens the **flapper**, and lets water flow from the tank into the bowl. Dual flush toilets have two buttons on the top of the tank instead of a handle.

+ Overflow tube: This drainpipe prevents tank overflow by directing water into the bowl if the fill valve fails to close when water filling the tank reaches the desired level.

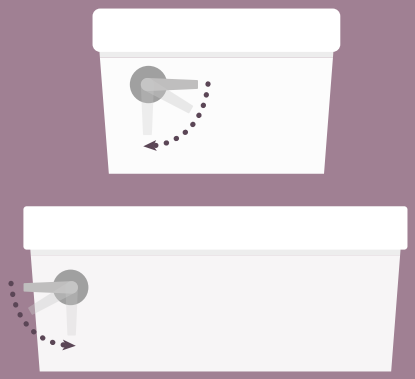
+ Flush valve: The flush valve initiates the flush by letting water into the bowl.

+ Fill valve: The fill valve permits the supply line to refill the tank after each flush.

+ Bowl: The bowl holds water and connects to the drain. It includes a **lid, seat, rim, trap, flange, wax rings,** and **bolts**.

+ Supply line: The supply line carries water to the toilet tank. It typically includes a **shut-off valve** that can be turned off during emergencies or repairs.

03 TYPES OF HIGH-EFFICIENCY TOILETS



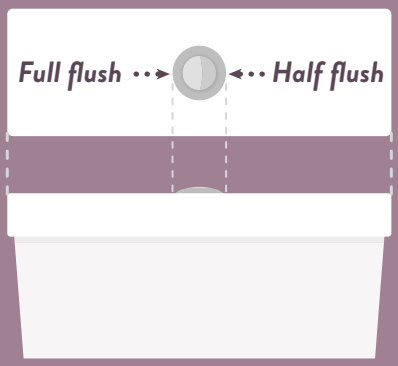
Gravity-fed: Single-flush

What is it?
Gravity-fed toilets rely on gravity to move water from the toilet tank to the bowl. A high-efficiency single-flush toilet uses the **same force and volume of water per flush (at most 1.28 GPF)** to remove solid and liquid waste.

Pros
+ Widely available & affordable
+ Compact design
+ Simple & easy to repair
+ Quiet

Cons
+ May clog more easily, especially in buildings with older drain lines
+ May produce unwanted odors

Use
Residential



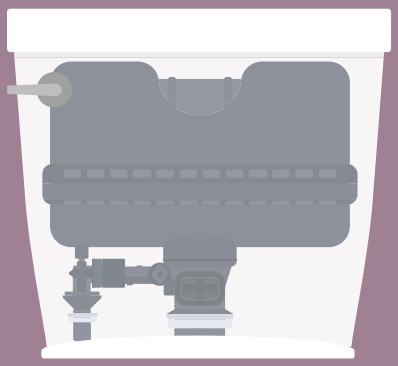
Gravity-fed: Dual-flush

What is it?
A dual-flush toilet has two modes: **full flush (1.28-1.6 GPF)** and **liquid-only flush (0.6-1.1 GPF)**.

Pros
+ Widely available & affordable, though less common than single-flush models
+ Saves water by matching the flush volume to the particular uses's flush requirement

Cons
+ Buttons may require more force to press than a single-flush lever
+ May require frequent cleaning since the liquid-only flush mode uses less water to rinse the bowl

Use
Residential



Pressure-assisted

What is it?
A pressure-assisted toilet uses **pressurized air** from a secondary toilet tank to achieve **extra force** when removing waste.

Pros
+ Low maintenance
+ Less likely to clog due to strong flushing ability
+ No toilet tank condensation, especially during humid weather

Cons
+ Noisy
+ Not widely available
+ More expensive than gravity-fed models (single & dual-flush)

Use
Commercial, institutional & residential

04 TOILET TERMS

+ WaterSense: WaterSense labeled toilets meet efficiency performance criteria set by the U.S. EPA.

+ Maximum Performance (MaP): MaP is an independent testing program that evaluates toilets based on flush performance. MaP scores represent the **maximum amount of waste** (measured in grams) that a toilet can flush and remove completely in a **single flush**. MaP is recognized by established water efficiency certifications and standards, including **WaterSense** and the **ASME A112.19.2/CSA B45.1 Standard for Ceramic Plumbing Fixtures**.

05 WHY EFFICIENT TOILETS?

Pros
+ **Water & energy efficient**
+ **Low maintenance**
+ **Reduces potential need for water restrictions**, especially during a **drought**
+ **Lowers wastewater flows,** decreasing volume-related demands on **sewage treatment plants & onsite disposal systems**
+ May be eligible for **rebates**

Cons
+ Potentially **high initial cost**
+ **More than one flush** may be required to completely remove waste

Design by Eunice Chung

Sources: Sandy Robertson, EcoBlock • Constellation • Elemental Green • Home Depot • Home Tips • Homenish • Mr. Rooter Plumbing • The Spruce • Toilet Haven • U.S. EPA • Weird By Design