10 Questions

on ASSE 1070-2004

Performance Requirements for Water Temperature Limiting Devices

What is meant by water temperature limiting device?

One that restricts or limits the maximum temperature of the hot water supplying a fixture/fitting(s). Simply put, it's tempering the hot side of a valve in order to limit the maximum outlet temperature available to the user, when mixed with cold water.

What is the scope of ASSE 1070? What are the applications?

ASSE 1070 is for devices that limit water temperature to a *fixture or fixtures* such as sinks, lavatories, or bathtubs to reduce the risk of scalding. Is not intended to provide protection from thermal shock.

Why is it not intended for protection against thermal shock?

Thermal shock is the result of sudden and drastic changes in water temperature that is the result of changing supply conditions (fluctuating pressures and temperatures) that are most dangerous in showering applications. The danger of sudden movements to avoid dramatic temperature change is slipping and falling. Slips and falls in reaction to a sudden increase or decrease in water temperature in a shower can cause serious injury. In strictly bathing and hand washing applications, this becomes a non-issue.

Is an ASSE 1070 valve the final tempering device?

Yes and no. The device can be the final tempering device or it can have water further tempered downstream (with the addition of cold water). In this instance, the valve is supplying tempered water to the hot side of a two-supply fitting and then further mixing with cold water at the point-of-use.

Does 1070 cover single or multiple fittings?

ASSE 1070 covers devices that supply single or multiple point-of-use fixtures.

Does ASSE 1070 account for cross flow?

Yes, an ASSE 1070 approved device must have a means to prevent cross flow, i.e. checks or check stops.

IPC - 2006/2009

Section 416.5 Tempered water for public hand washing facilities

"Tempered water shall be delivered from public handwashing facilities through an approved water temperature-limiting device that conforms to ASSE 1070."

Section 424.5 Bathtub and whirlpool bathtub valves

"The hot water supplied to bathtubs and whirlpool bathtubs shall be limited to a maximum temperature of 120ºF (49 C) by a water temperature limiting device that conforms to ASSE 1070..."

Section 408.3 Bidet water temperature

"The discharge water temperature from a bidet fitting shall be limited to a maximum temperature of 110ºF (43ºC) by a water temperature limiting device that conforms to ASSE 1070..."

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Can the user adjust an ASSE 1070-listed device?

Yes it may be adjusted by the user or may be inaccessible to the user, and set by the installer or building owner.

What is the maximum temperature allowed by an ASSE 1070 device?

A valve will be rejected, if at any time during Temperature Variation Test, the outlet temperature exceeds 120ºF. Each valve must have an adjustable and lockable means to limit the setting of the device to the hot position.

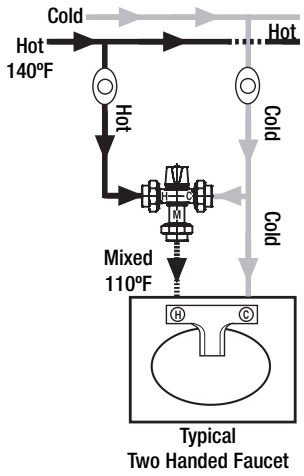
What are the differences between ASSE 1070 and ASSE 1016?

ASSE 1016 covers three valve types (P – pressure balancing, T – thermostatic and T/P – combination). ASSE 1070 covers a single valve type, which is very similar to an ASSE 1016 type T valve, with a couple of exceptions. The temperature control requirements are not as stringent for a 1070 device (±7ºF allowable) versus a 1016 valve (±3.6ºF) due to the less critical nature of the application (showering versus hand washing or bathing).

Another important difference, and where 1070 is more stringent than 1016, is minimum tested flow. ASSE 1016 devices are tested for temperature control at a minimum flow of 2.5 gpm, the standard showerhead rating. ASSE 1070 devices are tested at the “manufacturers stated minimum flow”. Because public restroom facilities require faucets outfitted with low flow aerators, most manufacturers rate their valves at a minimum flow of 0.5 gpm. This is important because accurate control at low flows is critical to a users safety.

How does ASSE 1070 differ from ASSE 1069?

ASSE 1070 is intended to mix hot and cold water to temper water



Typical
Two Handed Faucet

to the hot side of a two-supply valve (faucet or roman tub fitting) and allows further tempering (w/cold) downstream. It *can* be adjusted by the user. Common applications are sinks and whirlpool tubs; hence the temperature variance or control is not as tight (±7ºF) as required for a shower application.

An ASSE 1069 listed valve supplies water to a single-pipe/tempered fitting and does *not* allow further tempering downstream. Examples would be push-button or infrared metering showers. Because the primary application for 1069 is showers, the temperature control requirement is more stringent than 1070. Actually, it is exactly the same for that of an ASSE 1016 type T valve, ±3.6ºF).

Finally, an ASSE 1069 valve cannot be adjusted by the user (installer or building owner only) where a 1070 valve can, and is intended to reduce the risk of thermal shock as well as scalding. A 1070 valve is not required to reduce the risk of thermal shock.

UPC - 2009

Section 413.1 Limitation of Hot Water Temperature for Public Lavatories

“Hot water delivered for public use lavatories shall be limited to a maximum temperature of 120°F (94°C) by a device that conforms to ASSE 1070...”

Section 414.5 Limitation of Hot Water in Bathtubs and Whirlpool Bathtubs

"The maximum hot water temperature discharging from the bathtubs and whirlpool bathtub filler shall be limited to a maximum temperature of 120ºF (49°C) by a device that conforms to ASSE 1070...”

Section 416.3 Limitation of Water Temperature in Bidets

"The maximum hot water temperature discharging from a bidet shall be limited to 110ºF (43°C) by a device that conforms to ASSE 1070..."