TECHNICAL BULLETIN

Line : : **Electric or gas-powered Water Heaters**

Technical Notice No. 7 Date: 22/03/2018

UNDERSIZING

SYMPTOMS

- Probably claims for water leaking due to Heavy condensation
- Customer claims for Not enough hot water
- Rust on the burners and flue tubes ·
- Premature tank failure(s)

CAUSE

Water heaters can often fail prematurely due to improper sizing. The storage capacity as well as the recovery rate are both important factors when sizing a water heating system. Improper sizing can also lead to complaints of not enough hot water and sometimes even health violations. It is important to consider not only the volume of water required, but the temperature that is required. Some systems are designed for higher sanitizing temperatures while others are not.

When a large volume of water is needed within a small amount of time, this water is generally supplied from storage. This volume is referred to as the dump load. When choosing the appropriate storage tank size, the actual and usable storage will need to be addressed.

If water is required at a certain gallon per minute rate, this water will generally be supplied by the recovery of heater. Keep in mind that any dump loads also need to be included in this recovery.

EFFECTS

When a water heater is properly sized, some condensation will occur. However, excessive condensation is not normal and will corrode the heater. The flue tubes, baffles, and burners are susceptible to hydrocarbons in condensate and carbonic acid. Continual exposure will weaken the flue tubes. Condensation can also spoil combustion and produce a carbon monoxide hazard, with attendant risk of serious personal injury or death.

Elaborated By: _____ **Authorized By:** _____