

PWA 11 - Soak Time FAQ

How are soak times applied?

How is start of soak calculated?

Reference: PWA 11 Rev. CK, Para. 3.1.5 *Time at Temperature*

From the source:

Heat treatment time specified in all drawing and specification requirements shall be measured from the time at which the entire load has reached the required temperature.

The furnace load's time at temperature shall begin when the lowest recording thermocouple is at the low end of the tolerance band, and the time at temperature shall be complete when the lowest recording load thermocouple is below the low end of the tolerance band during the cool down portion of the cycle.

When no other tolerances are listed, a variation of $\pm 5\%$, or -5/+15 minutes, whichever is greater, for time required at temperature is permitted.

Aluminum solution times are taken from **Appendix A, Table 1**.

*Per **note 1**, alclad aluminum alloys are minimum base time + 5 minutes. Non-clad aluminum alloys are minimum base time +15 minutes or +5%, whichever is greater.*

All Other Alloys:

When soak time is listed in the process as a minimum:

Minimum time + 5% or +15 minutes, whichever is greater

When soak time is listed in the process without a range:

Time is multiplied by 0.5; program evaluates final product and determines which is the greater value, then applies soak time range.

Start of soak is calculated automatically, based on process uniformity and temperature.

Start of soak is not dependent on the use of load thermocouples. Whether control sensor or load thermocouples are used, start of soak begins when minimum uniformity is reached by all sensors.