



HVAC Super Pro FAQ

Application

What is the working time for HVAC SUPER PRO?

HVAC SUPER PRO can be left on the tubing and connector for several minutes, but when the tubing is inserted into the connector the bonding material starts changing from a liquid to a solid acrylic in 10 seconds. The bond must not be moved after the 10-second time and before 3-minutes.

Can HVAC SUPER PRO be used on both hard and soft copper and aluminum tubing?

Yes! The only requirement for both is that the tubing be reasonably round at the connection and the minimum clearance between tubing and connector be from 0.005 inch to a maximum of 0.020 inch.

What is the maximum gap that HVAC SUPER PRO will seal?

The maximum gap that can be filled is 0.020 inch.

Can the fit between the connector and the tubing be too tight for HVAC SUPER PRO to bond correctly?

Yes! When the tubing fits snug against the connector, there is no space for the bonding material to bond between the tubing and the connector. A HVAC SUPER PRO bond requires a minimum clearance of 0.005 inch completely around the tubing.

Why do both the tubing and the connector have to be sanded with 60-grit sanding cloth?

Because, HVAC SUPER PRO reacts with the copper, brass, or aluminum as part of the bonding process. Therefore, the copper, brass, or aluminum must be completely clean.

Why does the sanding cloth have to be 60-grit?

The 60-grit sanding cloth cuts a deep groove into the tubing and connector which does two things. 1.) It increases the bonding area and strength of the bond, and 2.) assures that the tubing and the connector are completely clean for maximum reactivity.

Can a wire brush be used to clean fittings and tubing?

NO! HVAC SUPER PRO does not adhere to steel. The use of a steel brush can leave steel particles on the fitting and tubing, which weakens the bond. Also, a wire brush, whether steel, copper, or brass, collects contaminants which transfers to the tubing and connector.

Is HVAC SUPER PRO a type of super glue?

No! HVAC SUPER PRO is not a glue of any type. HVAC SUPER PRO is an anaerobic specifically formulated for bonding metals with a negative valence. HVAC SUPER PRO hardens into a strong acrylic in the absence of air.

Why does HVAC SUPER PRO only work on copper, brass, and aluminum?

Copper, brass, and aluminum all have a negative valence which is highly reactive with HVAC SUPER PRO.

Why does it take longer for HVAC SUPER PRO to bond to aluminum than to copper?

The negative valence for aluminum is much less than for copper, so it takes longer to react with HVAC SUPER PRO.

Can HVAC SUPER PRO be used to bond aluminum to copper and brass as well as aluminum-to-aluminum?

Yes!

When connecting aluminum to copper or brass will Galvanic corrosion occur at the bonding area.

No! No Galvanic corrosion will occur when using HVAC SUPER PRO because HVAC SUPER PRO forms an acrylic barrier between the aluminum and copper.

How do I make a repair with HVAC SUPER PRO when the tubing has refrigerant and oil present?

HVAC SUPER PRO will **NOT** bond to tubing or connector when refrigerant and oil are present. To make a repair, sand the outside of the tubing and the inside of the connector using 60 grit emery cloth, use a clean rag saturated with alcohol or acetone to clean the outside of the tubing and the inside of the connector, then quickly apply HVAC SUPER PRO to the inside of the connector and the outside of the tubing and quickly insert the tubing into the connector before the refrigerant can

migrate back to the bonding area. **DO NOT** use paint thinner or any oil based solvent to clean the tubing and the connector.

When making repairs to a previously brazed connection, does all of the brazed material need to be removed prior to the use of HVAC SUPER PRO.

NO! HVAC SUPER PRO will bond to the braze material. However, the area to be bonded must be sanded with 60 grit emery cloth prior to the application of HVAC SUPER PRO.

Is it possible for an HVAC SUPER PRO bond to leak after it has passed a vacuum leak test?

YES! If the bond was improperly made it is possible for the chemical reaction to occur, but in a weakened state. Refer to common application errors in this FAQ's section.

If an HVAC SUPER PRO bond is installed incorrectly, can it be taken apart?

Yes! An HVAC SUPER PRO bond can be taken apart by heating the connection to 450°F. If other bonds are close, protect them from the heat. To re-bond, re-sand the outside of the tubing and the inside of the connector using 60-grit sanding cloth and re-apply HVAC SUPER PRO per the bonding instructions.

Is HVAC SUPER PRO recommended for use on potable water systems?

NO! HVAC SUPER PRO is non-toxic when cured, but it has not been tested to nsf AN/ANSI-61 standards. Jackson Industries does have a product specifically for potable water – JUST-FOR-COPPER PRO (part no. JFCP 058) which is certified to nsf AN/ANSI-61.

Technical

What is the shelf life of SUPER PRO?

Eighteen (18) months. The product is good for approximately 12 months after opening.

Will HVAC SUPER PRO conduct electricity?

NO! HVAC SUPER PRO is an insulator.

What pressure will HVAC SUPER PRO withstand?

The pressure of an HVAC SUPER PRO bond depends on the bonding area – the larger the tubing, the greater the strength. HVAC SUPER PRO is rated at 1200psi on 7/8 inch O. D. (3/4 inch I. D.) copper, brass, and aluminum.

Is pull-apart strength the same as pressure strength (psi)?

No. Both are measurements of bonding strength, but they cannot be directly compared. Pressure is a multi-dimensional measurement. Pull apart strength is measured in foot pounds and is a measurement of strength in a single direction. The larger the area of a bond, the greater the foot pounds of force required to pull-apart the bond. The only accurate way to provide a measurement would be by size of pipe. The minimum pull-apart strength of HVAC SUPER PRO is 1500 foot pounds on 7/8 inch O. D. (3/4 inch I. D.) tubing.

What is meant by rotational strength?

Rotational strength is the foot pounds of force required to twist a bond apart. As the tubing increases in size, the larger the bonding area, and the greater the foot pounds of force required to twist (rotate) the bond apart. The only accurate way to provide a measurement would be by size of pipe. The minimum rotational strength of HVAC SUPER PRO on 7/8 inch O. D. (3/4 inch I. D.) is 450 foot pounds.

What size tubing can HVAC SUPER PRO be used to bond?

There really isn't a limit on the size of the tubing. Tubing diameters up to six inches in size are easy to bond. The key is that the tubing and connector must be fitted together in the final bonding position within 10 seconds. As the tubing gets larger than six inches, it becomes more difficult to fit and align the tubing and connector together in the 10-second time period, but it can be accomplished.

Is HVAC SUPER PRO compatible with POE oil?

Yes! HVAC SUPER PRO is compatible with all refrigerant oils including POE oil.

What is the minimum burst strength of tubing bonded with HVAC SUPER PRO?

Burst strength depends on the tubing. HVAC SUPER PRO does not affect the burst strength of tubing. This is not true when brazing a bond, the copper pipe is weakened as much as 50%.

What is the coldest temperature at which you can apply HVAC SUPER PRO?

HVAC SUPER PRO can be applied at any temperature as long as it is liquid. In weather conditions below freezing, the HVAC SUPER PRO can be kept liquid in a pocket. In extreme cold conditions, like below -20, the connection should be made as quickly as possible after applying HVAC SUPER PRO.

Is the expansion rate the same for aluminum as for copper?

The expansion coefficient of HVAC SUPER PRO, aluminum, and copper are so similar that there is no effect on tubing in HVAC applications.

Do you have to nitrogen purge when using HVAC SUPER PRO on a 410A system?

NO! The primary reason nitrogen purging is required is to remove the oxide (scale) that occurs inside the tubing during the brazing process. The POE oil in a 410A system is a strong detergent and removes this oxide which clogs the thermal expansion valve. HVAC SUPER PRO leaves no oxide (scale) to clog the thermal expansion valve. However, there may be other reasons to perform a nitrogen purge.

Can HVAC SUPER PRO be used on water and steam heating systems?

Yes! HVAC SUPER PRO has a temperature range of 350°F. HVAC SUPER PRO can be used on all steam heating and hydro-baseboard heating systems. The only place HVAC SUPER PRO cannot be used is on pipes that have direct contact with open flame.

Can HVAC SUPER PRO be used on hospital oxygen lines?

NO! HVAC SUPER PRO is not certified for oxygen lines used by patients at home or in the hospital. Also, HVAC SUPER PRO was intentionally not tested for patient use because of the restrictive insurance costs.

Common Application Errors

What are the most common HVAC SUPER PRO application errors?

Listed in order of occurrence

1. The clearance between the connector and tubing, at all points, is less than 0.005 inch or greater than 0.020 inch.
2. The bonded connection was disturbed during the mandatory 3 or 5 minute bonding period. This is the period when the bond is changing from a liquid to a solid state.
3. The bonding areas were not sanded with 60-grit emery cloth.
4. While making the last connection, pressure was created inside the tubing causing the connection to move during the bonding period.
5. A brazed connection was made in close proximity to an HVAC SUPER PRO bond, creating transferred heat of 450°F or greater.
6. Connections to long pieces of tubing were not supported – creating unacceptable stress on bonding area.

7. When replacing a unit, stretching the current tubing to make it fit. The stress on the tubing will stress the bond and cause it not to bond correctly. An additional piece of tubing should be added to make the tubing the correct length.
8. There was refrigerant and/or oil present in the bonding area.
9. HVAC SUPER PRO was not applied completely around the outside of the tubing and/or the inside of the connector.
10. The tubing and/or connector were contaminated after sanding.
11. The bottle was not shaken before application