



Frymire Services 2818 Satsuma Dallas, Texas 75229

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Dirty Sock Syndrome FAQ

Question: What causes the smell?

There is no solid proof of the cause of the smell . When the coil and water from the drain pan were analyzed, numerous spores, molds, and fungi were discovered, but these substances were also in systems that experience no odors. It is speculated that the odor is a by-product of microorganisms that grow in moisture of the surface cracks and crevices of the tubes and fin stock of the indoor coil during the cooling season and feed on the minute particles produced by common household items such as cleaning agents, perfumes, cooking, hair sprays and dust . When the heat pump is put in the heating mode, the microorganisms become dormant in the warm, dry atmosphere of the air handler. As the heat pump goes into the defrost mode (the unit is actually in the cooling mode with the outdoor fan off and the auxiliary heat is on), the microorganisms are reactivated for a few minutes as the indoor coil cools down and becomes moist. This is the time the odor is released by the microorganisms. Once the unit returns to the heating mode, the indoor coil is reheated, and the microorganisms again go dormant.

Question: Why does the odor occur mostly on heat pumps, particularly on high efficiency models?

New and more energy efficient air conditioning systems appear to be more pre-disposed to experiencing dirty sock syndrome. And heat pump systems are more susceptible. A typical heat pump coil temperatures only reach 120 - 130° Fahrenheit. This is the temperature that seems to be ideal for the microorganism to thrive. In most gas-fired furnaces, the coil temperatures exceed 160° Fahrenheit. This *is* the temperature that the microorganisms are destroyed. This odor was identified over 20 years ago, before high efficiency units were popular. High efficiency units have now become more popular, and are more expensive, causing more complaints to be related to high efficiency units.

Question: The smell is obnoxious - is it dangerous?

Although several ailments have been reported, no medical proof has been offered to establish dirty sock syndrome as the cause of the ailments. It is, however, a very obnoxious smell and is said to be much like body odor in both smell and toxicity.

Question: Why do I have the odor and my neighbor does not? Both units were installed at the same time.

The correct combination of circumstances has not occurred as to the amount of moisture, surface condition, food source, and temperature for the microorganism to propagate. Dirty sock syndrome can be sporadic and possibly related to individual households and lifestyle patterns. There are also cases where the odor disappeared for several years, sometimes returning, sometimes never returning. The odor does not appear to be efficiency sensitive, nor does it occur on any one brand of air conditioner. It was once considered limited to the Southeastern United States. Now it has become more widely recognized that it no longer limited to heat pumps and the Southeast.



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Question: My 30 year old unit never had an odor, and my brand new unit does - why?

The reason is unclear. It is suspected that the microorganism was present somewhere in the structure, and was disturbed enough to become air borne and become deposited on the new coil. Perhaps the manufacturing oils on the new coil provide a food source for the microorganisms. Once all conditions are right in the microorganisms "eco-system", the stage is set to produce the odor .

Question: How does cleaning the coil help eliminate the odor ?

If the microorganism was deposited on the coil by being airborne, once it is *it* might not return . Washing the indoor coil also removes possible food sources that nourish the microorganism. Any solution that cleans and sanitizes the coil surface is sufficient . Once the coil has been leaned and dried (very important!), the coil should be treated with a mold preventative. While the use of the mold preventative may not be necessary, it will help control the microorganisms that the coil cleaning may have missed. This treatment has proved to be effective about half the time and t he odor has not returned.

Question: What if the odor returns? What do I do next?

Some procedures will work for only a limited time before requiring additional maintenance. There are also procedures that will work on the first application, but subsequent applications have no effect, i.e., ozone generators , return air heaters, and other coil treatments. Sometimes, further steps to remediate the problem will be required such as installing ultra violet (UV) lamps. In an effort to find a cost effective solution contact Frymire for the most current and effective means of controlling dirty sock syndrome.

Sources:

1. *Trane, an Ingersoll Rand Company.*
2. *Air Conditioning Heating Refrigeration News, September 19, 2000.*