

## Jason Mechanical Corp

# Tool Box Safety Talk

### Frostbite

You have probably experienced some degree of frostbite at one time or another -- possibly at the workplace. It generally starts with a light reddening of the ears, nose, chin, fingers, or toes. The sensation of cold is present. The feeling of cold changes to tingling and then to pain as the frostbite becomes more intense. Finally, the redness has turned to pale, grayish blue and the pain has disappeared only to be replaced by numbness. You now have a full-blown case of frostbite.

What actually occurs during frostbite and how dangerous is it? Most of your body is made up of water and water is abundantly present in all your cells. When your exposed extremities are subjected to extreme cold, the temperature (heat) flows from your cells to the outside cold. The result is ice! That's right. Ice actually forms in your cells and tissue. The ice crystals within the cells cause cell damage. There is a loss of oxygen to the tissue and, in a worst case, gangrene can set in.

There are three (3) levels of frostbite: incipient, superficial, and deep. You might not even know you have had incipient frostbite until you start warming up and notice a slight tingling. The total cure involves gentle warming. If you don't notice incipient frostbite and remain in the extreme cold, superficial frostbite may develop. In this case, the freezing occurs in the tissue below the skin. Blisters may form and pain may last for several weeks. Deep frostbite is dangerous, and the freezing occurs in the subcutaneous tissue. Attempts will be made at the hospital to decrease the oxygen needs of the tissue, improve blood supply, and prevent infection. Some tissue may have to be removed.

Because frostbite involves the loss of oxygen to the tissue, persons with poor circulation are at greater risk. Having very tight shoes can also increase the risk for toes getting frostbite.

Contrary to what you may have heard, never rub snow in a frostbitten area of your body. This will only increase trauma to the injured tissue. Gently soaking in warm water (110°F) is your best bet. Certainly, if it is deep or bothersome superficial frostbite, seek professional medical help.

Several light layers of clothing will offer greater warmth than one heavy layer. Because moisture is a good conductor of heat (the temperature will leave your body and go to the outside air) and dry air is not a good conductor, dry clothing is a must in cold weather.

Frostbite may be a warning that could save your life. Get out of the cold! As your body cools and shivering stops, heat loss will exceed heat production and you will get listless, apathetic, and sleepy. Pulse and respiration will slow. Freezing, unconsciousness, and death may occur.