TOOLBOX TALK #50

WORKING IN THE COLD – PART 1

Lost-time injuries and illnesses resulting from “environmental cold” spiked nearly 142% in 2018 – soaring to 290 cases from the 120 the previous year, according to the Bureau of Labor Statistics (BLS). Those cases, plus the 280 reported in 2019, are likely an indicator of a lack of employer and worker understanding about the dangers of cold stress.

What are the Dangers?
Along with air temperature, wind and moisture can create issues for employees working in the cold. Water, including sweat, can displace body heat 25 times faster than dry air. Likewise, wind can blow away the body’s protective external layer of heat. This is why wind chill is an important factor to understand. So, for example, when the temperature is 25°F and the wind is blowing at 25 mph, the wind chill is 9°F, resulting in more dangerous conditions. The American Conference of Governmental Industrial Hygienists (ACGIH) used air temperature and wind speed to develop three thresholds of cold stress hazards:

- **Little danger**: Freezing of exposed skin within one hour
- **Danger**: Freezing of exposed skin within one minute
- **Extreme Danger**: Freezing of exposed skin within 30 seconds

With no wind the temperature can drop to -20°F and still pose little danger to workers. But if the wind speed reaches 20 mph or more, then the danger threshold moves up to 10°F. The ACGIH also developed a work/warm-up schedule for four hour shifts. On this sliding scale, no noticeable wind and an air temperature between -25°F and -29°F translates to a maximum work period of 75 minutes. However, if the wind reaches 20 mph or more and the temperature is between -15°F and -19°F, the maximum work period is 40 minutes. At -25°F or colder and with a wind speed at the same 20mph or greater, ACGIH recommends that all non-emergency work stop.

What to Know
OSHA doesn’t have a standard that covers work in cold environments, but it can enforce its General Duty Clause, which requires employers to provide a workplace “free from recognized hazards”. Employers should educate their workers about conditions that can cause cold stress, as well as the symptoms of related ailments including frostbite and trench foot and how to prevent them.

OSHA advises instruction employees on how to dress appropriately for cold conditions, in addition to monitoring them and providing a place to warm up with hot beverages. Whenever possible, schedule work for the warmest part of the day and use a buddy system to help workers monitor each other. Another option, using radiant heaters or other engineering controls, can also protect against cold stress. First aid kits should include a thermometer and chemical hot packs. Workers should have extra gloves, hats, socks, jackets and blankets accessible, and a thermos or container with something hot to drink. They also should avoid touching any metal with bare skin.