



## Facility Safety Magazine

**By Phyllis Lark**

Manufacturing facilities looking for new ways to improve worker productivity, morale, performance, and safety might want to start with the floor. In most industrial facilities, the production floor area is cement or some other form of hard-surface flooring. Designed for durability, simplified maintenance, and efficiency, hard-surface flooring can cause pain and fatigue for industrial workers, which can hamper worker health and productivity significantly.



The same is true of drill press operators, foundry workers, and packers. Static standing in one spot throughout the day may seem like it is more efficient for getting the job done, but it puts a lot of pressure on legs, knees, and feet. Workers compensate by twisting their feet, shifting weight, and moving from side to side, which slow down production and lead to leg pain and even injury.

Standing, sitting, and walking within the work area can help alleviate these problems. It helps improve blood flow through the legs and increases the number of foot and leg muscles used while at work. It also helps equalize distribution of weight on the feet, exerting less stress and strain on the same joints and muscles.

However, the relief appears to be only temporary. Medical and worker-productivity experts have been studying the problems that can result when workers stand in one place or position for long hours for several years. They now know which type of workers, or more specifically, which kinds of feet, are most negatively impacted.

According to Dr. Timothy Ford with the American Podiatric Medical Association, people with extremely high arches and those with extremely flat feet are particularly susceptible to pain and fatigue from static standing. According to the doctor, they tend to develop pain in the hips. And people with flat feet often roll their feet inward, causing pain in the hips as well as the knees. Both also play a role in increasing worker fatigue.

### **Fighting Stand-Up Fatigue**

In most cases, it is the surface that workers stand on that causes the discomfort. Floors that do not “give” lead to the physical stress and strain on lower ligaments for those workers who must stand on them all day. Making matters worse, floors that become slippery due to moisture or debris can increase fatigue because contact between the surface and the feet is diminished. This can also lead to accidents and injury.

One solution for both of these problems is for industrial and similar facilities to install anti-fatigue matting systems. These mats offer a soft, comfortable cushion on which to stand, which is the first step in reducing worker fatigue and discomfort. According to some experts, this is particularly helpful for older workers, who make up a growing segment of the North American workforce.

These matting systems are often constructed of a solid vinyl or rubber surface bonded to a sponge base. More advanced systems use a patented technology, Zedlan foam. Many users find that Zedlan foam offers the best balance of

softness and resilience in dry environments. As workers perform their tasks, these systems add a “bounce” that helps stimulate muscles and blood flow through the legs, significantly helping to reduce fatigue for workers and improve productivity.

They induce a natural flexing of the muscles as the body makes adjustments to keep a balanced position. They help facilitate the muscles to tense and relax, allowing blood and oxygen to flow back to the heart, and the buildup of lactic acid, which causes fatigue, is reduced.

Additionally, anti-fatigue mats allow for improved weight distribution over the entire surface of the foot. This allows the foot and the body to have a more natural stance on the floor and allows workers to focus on their work, not their pain.

Adding mats to industrial and hard-surface flooring also helps promote safety and reduce the number of potential slips, trips, and falls, which as has been mentioned, can increase as legs and workers become fatigued. This is because some matting systems have bilevel construction. They are designed to contain moisture, debris, and soil *below* the structure of the mat, helping to promote traction.

### **Matting Selection**

There are three types of anti-fatigue matting systems: dry, wet, and oil systems. Most of the systems discussed thus far are for dry settings.

However, wet area matting systems are designed to elevate the workers, so that liquids and moisture are below the surface of the mat. Some systems also have a built-in locking system so that they can be installed to fit specific work areas and needs.

Oil anti-fatigue matting systems typically have an open-loop design that elevates the worker, adds greater slip resistance, and allows oils, grease, and moisture to flow through, promoting a drier work space. All of these systems help alleviate worker fatigue, provide a safer and healthier work space, and can improve worker productivity.

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