Air Movement Improves Workplace Safety

Slippery conditions are often caused by the same thing that makes it hard to get a grip on a frosty beverage in the summertime: condensation. Concrete slabs often begin to sweat anytime there’s a change in temperature or humidity. The options for dealing with this phenomenon range from air conditioning your entire facility to increasing air movement with highly efficient large diameter, low speed overhead fans — guess which one’s more affordable.

Industrial facilities worldwide have seen the condensation-busting effect of large diameter, low speed fans. These aptly-named fans range in size up to 24 feet in diameter and use their immense size, rather than speed, to efficiently move air throughout an entire space, from high ceilings to the floor, and wall to door.

Moisture management

Moisture can occur inside facilities in a number of ways, from the simple (wet products entering the building) to the more complex (humidity and condensation). Either way, moisture issues need to be solved to create a safe work environment.

Condensation occurs when warm air contacts a cold surface. As the air becomes colder, its ability to store moisture decreases dramatically. The result? Water droplets on the cold surface. To reduce moisture caused by condensation, first determine what is cold in the space. This is often the building’s concrete slab, which will typically trail the air temperature by about a month. So while the April air is a

balmy 72, the slab might still be stuck in March at 50 F. Warm air sits on this cold slab, dropping moisture as it cools. Another common culprit is cold products and packaging materials brought into the warm building off a cold truck.

Utilizing the same principles that make them an ideal solution mold issues, large diameter, low speed fans also improve employee safety by drying wet surfaces to reduce slip and fall risks. Although condensation is more probable in areas of high relative humidity[i],

These low-speed fans reduce condensation problems by moving stagnant warm air off the cold surface before it has a chance to cool down enough to leave telltale puddles behind. Use fans to get the warm air moving across this cold surface, and you'll also help to warm the cold object, stopping the cycle of condensation.

Let's take a look at two facilities that have put this concept into action.

Manufacturing

Pallet manufacturer John Rock Inc. of Coatesville, Pa., struggled with moisture management on two levels — a quarter-million feet of green hardwood moving through their facility each shift, and a sweating concrete slab. They also inadvertently compounded their safety issues by designing their new production facility with a slick floor.

"We spent a lot of money to make sure we had a very smooth floor so we could move efficiently," said Penn Cooper, Business Development and Purchasing Manager. "We created a huge skating rink issue, just because it's wet. People were getting hurt."

John Rock's six 24-ft. diameter Big Ass® Fans thoroughly mix the air, resulting in only slight temperature differences from floor to ceiling and reducing the opportunity for condensation to form. The previously perilous floor remains dry, allowing employees and forklifts to travel safely, while gentle air movement through the stacks of newly minted pallets keep mold to a minimum.

"The fans dramatically improve the safety here," Cooper said. "They've been a real blessing for us. I never would have thought it would work so well."

Distribution

The concrete warehouse floor of Charlotte, N.C., HVAC equipment distributor N.B. Handy began to sweat any time there was a change in temperature or humidity, creating a standing puddle that was referred to as "LakeHandy."

"The forklifts were unsafe to drive because they couldn't stop, and people would slip on the water," said N.B. Handy Operations Manager Blake Boleman.

After they installed five Big Ass Fans, "LakeHandy" experienced a record drought, drying up completely and creating safer working conditions.

“The fans have helped solved our problems,” Boleman said. “I couldn’t be happier.”

Conclusion

Managers struggling with slip and fall issues in their workspaces need to raise their eyes — instead of fixating on the floor, a solution may be found on the ceiling. The large diameter, low speed fans, such as the ones Big Ass Fans offers, improve employee safety by efficiently breaking the cycle of condensation and drying wet surfaces to reduce slip and fall risks.

For more information, please visit www.bigassfans.com *[1].*

[i] R. Mason et al., “Advanced Coatings and Processes for Field and Depot Corrosion Repair of Military Hydraulic Components,” in proceedings from NACExpo 2006, 61st Annual Conference and Exposition, March 2006.

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