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Art of Ice Maintenance

by Jerry Krewer, Manager, Twin Rinks Ice Pavilion

Ice maintenance is an important function for any ice skating facility. The commodity that you sell isn't just lessons or hockey, it's the ice surface. Without a proper ice surface, ice sports can't be properly performed. At the same time you're dealing with cost factors. We all have to reduce expenses as much as possible to increase our margin so we can survive. Doing ice maintenance helps you save money.

What Is Ice Maintenance?

Ice maintenance starts as a commitment. Management must make ice maintenance a commitment, put it on the schedule, and make a policy of daily, weekly, monthly ice maintenance. Do you have an ice maintenance policy in writing? Is there a check list that maintenance people follow? Is it an ongoing, daily effort?

Every time the ice is made, there's an opportunity to perform ice maintenance that will make your life easier down the road. Ice maintenance also requires a periodic intensive effort.

What Is the Purpose of Ice Maintenance?

The first purpose of ice maintenance is product quality. What we sell is ice. We offer skating lessons and hockey programs, but it starts with the ice surface. If your customers know that you make your ice on time, that it's flat, the edges are clean, and the ice temperature is right, they get what they're paying for.

Another feature of ice maintenance is energy conservation. The thicker your ice is, the harder it is to maintain its temperature, the harder your compressor will work, and the more you'll spend in energy dollars. Probably the number one reason to do ice maintenance is to keep your ice slab as thin as you can, while safely putting out a quality product and keeping your energy costs down.

Variables That Affect Ice Quality

• Ice Temperature – Ice dancers and figure skaters would love to have the ice at 24 degrees and your building at 75. Hockey players don't mind the building being cold, and they like hard, fast ice. You have to figure out what temperature you want to maintain to meet the needs of your customers.

• Clean Edges – How often do you edge? With board brushes you don't have to edge as often, but are you really paying attention to your edges? The entrance where the resurfacing machine goes on the ice changes dramatically on a daily basis. All the doors that enter the ice usually have dips, and the longer you make ice around them, the more you affect the rest of the surface.

• Visibility of Lines –If your ice is five inches thick and your lines are down at the bottom you're not going to see them.

• Appearance/Color of Ice – If you look down the length of the rink and you see the color go up and down like a washboard, it doesn't appear that you know what you're doing or that you've created a quality product.

• Blade Setting and Sharpening - Do you set the blade or not? Is the blade sharp?

• Daily Usage – What type daily usage do you have? Is it hockey; is it figure skating? Is it hockey

with mites or hockey at the college level? Is it adults? Do they skate for an hour, 90 minutes or three hours? Is it a game or practice? All those factors have an effect on your product quality.

• Number of Daily Resurfaces – Inadequate resurfacing results in poor ice quality.

• Number of Drivers – Driver training and ability are important.

• Water Temperature and Water Quality – Do you want to pay the price for hot water to improve the quality of your product? Should you have your water tested to find out what you can do to purify it for a better ice surface. I put two machines on the ice and do five-minute resurfaces. That increases my need for ice maintenance, but it also increases the amount of ice I have to sell on a daily basis.

• Water Quantity – How much water are you putting down? How fast are you driving? - Some people don't turn the water off on the turns and the ends build up faster. There are different driving patterns that can be used when making ice. Every driver doesn't have to start and finish in the same spot. If they do different patterns at different times that helps maintain the quality of your ice.

• Commitment to Maintenance – If there's no commitment, it won't happen. Is ice maintenance on your schedule?

Variables Impacting Energy Conservation

• Ice Temperature – If you go up one degree you save approximately five percent on your utility cost.

• Ice Thickness – The thicker the ice the more it raises your brine or direct refrigerant temperature, which raises your surface temperature and forces you to run the equipment harder to maintain the same ice temperature.

• Arena Temperature – If you turn the heat off in the building, your compressors shut off twice as often and don't run as hard. The more you heat the rink, the more energy load you put on the ice surface, and you have to run the compressors harder. You have to find that happy medium.

• Radiant Heat Load – If you don't have low-e ceilings, it's something to consider. Radiant heat from the sun on your building costs you 20 to 25 percent in utility costs for your compressor system. It also affects the surface temperature of the ice, which affects your ice quality.

• Ice Making - Water temperature affects energy conservation.

• Type of Usage – If you have more hockey than figure skating and you have to maintain harder ice, that affects energy conservation. With more hockey, you end up running your compressors harder and spending more on electricity to keep the ice temperature down.

These are all considerations when determining your ice maintenance policy.