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STRUCTURAL
REHABILITATION GROUP, LLC
CONSULTING ENGINEERS

Snow Removal – Pre-Removal Conference

In order to ensure all parties involved in the ice and snow removal for your garage are aware of the issues presented below, we recommend arranging on-site meetings with your snow removal contractor as well as your in-house maintenance crew prior to the first snow event of the season. The following items should be discussed/considered with your snow removal contractor/in-house staff.

1. Negotiate a well thought out agreement with your snow removal contractors. Pay particular attention to their limitations of liability with respect to any damage they may cause while on-site.

2. Carefully review the types of snow removal equipment and materials that will be used on the deck (size, height, weight, blade type, abrasives to be used). If a bobcat/skid steer type equipment will be used, the skidding tires can tear and strip a membrane coating from the deck.

3. Review the type of traction/abrasive agent that your snow removal contractor intends to apply to the parking deck. The more coarse the aggregate, the more damage that can be done to the vehicular membrane. If you have a vehicular traffic bearing membrane applied to portions of your garage structure, do not use slag, coarse sand, gravel or other forms of traction materials that are abrasive as they can damage deck coatings.

4. Review the type of de-icing agents that are being proposed for use on your concrete parking deck. Chemicals such as sodium chloride (rock salt), calcium chloride, ammonium nitrate, ammonium sulfate and Urea based materials are known to damage reinforced concrete structures; therefore these deicers should not be used on elevated parking structures. Pelletized de-icing agents such as calcium magnesium acetate (CMA) or anhydrous sodium acetate (NAAC) should be used instead. Also available are anti-icing pre-treatments such as liquid potassium acetate deicers (CF7) and other plant based compounds (like beet pulp) are currently being used for roadways. Such alternative materials are much less damaging to concrete and therefore provide a much better option for deicing on elevated concrete structures. It should be noted that below 15 to 20 degrees, application of most deicing agents is a waste of time and money. Make certain to apply the deicing agents with enough time and at sufficient temperatures to allow the agents to create a brine which is crucial in order to protect from the formation of ice.

5. Arrange site visits prior to the first snow accumulation to show your contractor the location you will allow stockpiling of snow (if applicable). These locations should

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be off elevated structures unless approved by a structural engineer. The location of expansion joints, parking stop blocks, curbs, islands, etc., must be well understood. Agree on a marking method to be used throughout the season to avoid plow impact to these components.

6. All expansion joint locations should be clearly marked before any snow accumulation occurs. The marks should be placed on columns and/or walls adjacent to the expansion joints. If this is not possible, flags or cones should be placed adjacent to the expansion joints to mark their locations. This will help snowplow drivers to identify and take special precautions around expansion joints while performing their work.

7. Arrange a snow removal pattern so that the snow removal equipment crosses the joints at an angle not greater than 75 degrees. This should be practiced whenever possible as it reduces the likelihood and severity of any damage (should it occur). If possible, the equipment should run parallel to the expansion joints since this will significantly reduce the chances of the snowplow blades catching part of the expansion joint system and damaging it.

8. You need to ensure that the snow removal contractor uses snowplow blades fitted with rubber edges/tips which are less likely to damage the expansion joints and deck coatings.

9. Regardless of the type of blade used on snowplow equipment, the blade should be held above the surface of the deck using skis or shoes that are mounted on the bottom of the blade. It is recommended that the blade be 1/8″ – 1/2" above the deck to avoid damage to the deck coating and expansion joints.

10. When possible, snow removal activities should be performed using less aggressive equipment such as power brushes or snow blowers with rubber blades.

11. All hand equipment such as shovels should have rubber-tipped edges to prevent damage to the deck coatings.

12. The tires of all snow removal equipment utilized should not be fitted with chains or any other type of traction aid that could damage the deck coatings.

13. If at all possible, you may want to consider closing your top deck and allowing the snow to melt in lieu of application of de-icing agents. Please note that most top level parking decks cannot support more than about 80 pounds per square foot (p.s.f.). This limits the height of a snow pile on the deck to approximately two (2) to three (3) feet (depending on the density of the snow).