OPERATIONS - PAVEMENT DEICING

ENVIRONMENTAL GUIDELINE

PURPOSE

The purpose of this document is to provide guidance on DEN's expectations when conducting pavement deicing activities. These activities fall under City and County of Denver's MS4 permit on landside and DEN's Industrial Stormwater permit on airside. Best management practices are required to be utilized to prevent stormwater runoff pollution that can contaminate soil, surface water and groundwater. Neither permit allows for the discharge of pavement deicers to state waters unless there is a precipitation event.

When glycol-based products runoff into surface waters and infiltrate into groundwaters, it can contribute to decreased dissolved oxygen and fish kills, and aesthetic problems such as unpleasant odors and cloudy water when it starts to degrade. When chloride-based deicers runoff into soil and surface waters and infiltrate into groundwaters from roadways, it can chloride and salinity levels, which can negatively impact wildlife, vegetation, and human health. Unlike other water quality contaminants, salt is difficult to remove, which can impact drinking water quality. Each operator and tenant conducting these activities is responsible for understanding the applicable regulations and managing their activities accordingly; this Environmental Guideline is meant as guidance only and does not supersede any regulations.

ACTIVITY DESCRIPTION

Pavement deicing includes the application of deicing and anti-icing materials:

- Liquid potassium acetate-based products applied to airport taxiways and runways and chloride-free granular road salt applied to sidewalks
- Magnesium chloride-based brine and sand on landside road surfaces and granular deicer for pavement.

EXPECTATIONS

Best Practices:

- Use appropriate deicing and anti-icing products for the application and understand the specifications for choosing an appropriate deicing product.
- Utilize appropriate spill prevention equipment for containers, vessels, hoses, transfer areas, etc.
- Containers to capture dripping/leakage of liquid deicers from deicing vehicles and equipment
- Absorbent and absorbent socks and pads for liquid deicer spills
- Containerize all collected wastes and evaluate for proper labeling, storage, and disposal.

- Maintain adequate supplies of spill response equipment and materials in accessible locations where spills are likely to occur.
- Store all deicing and anti-icing fluids in containers in good condition, and indoors if possible. When stored outdoors, storage areas should be managed to minimize the potential for spills/leaks or exposure to precipitation resulting in a discharge to State waters.
- Utilize secondary containment for liquid deicers
- Berm off and cover solid deicer and sand
- Use only **approved** deicing products
- Glycol-based liquids, potassium acetate, potassium formate, sodium acetate and sodium formate-based products on airside
- Chloride-based deicers on landside
- Utilize practices to prevent overuse of pavement deicer and protect surface water
- Avoid chloride-based pavement deicers with sodium when deicing on landside
- Deploy anti-icing techniques prior to winter storm such as pre-treating pavement to reduce to amount of overall pavement deicer used
- Plow or remove snow prior to applying pavement deicer
- Maintain equipment according to the manufacturer's recommended maintenance schedule.
- Routinely inspect sumps, catchment basins, trench drains, and pretreatment devices that potentially receive fluids from pavement deicing; clean/maintain, as necessary.
- Employee training programs shall inform personnel at all levels of responsibility involved in industrial activities that may impact Stormwater runoff. Training shall address topics such as spill response, good housekeeping, and material management practices. Contractors or temporary personnel shall be informed of plant operation and design features to prevent discharges or spills from occurring.
- Maintain Deicing product SDS

Shall Not:

- Improper disposal of deicing or anti-icing fluids
- Dumping granular deicer and liquid deicer onto soil or down storm drains, or into floor drains
- Overuse or improper use of deicing chemicals
- Applying deicer before removing snow.
- Use of organic-based fluids such as glycol, on landside.
- Use of chloride-based fluids on airside.
- Use of urea
- Use of deicer without approval from Environmental Services

REFERENCES

Contacts

- DEN Communications Center (for spill reporting): 303-342-4200

- DEN Environmental Services (Main Line): 303-342-2730; DIA.Environmental@flydenver.com
- FAA Weather Contractors (B-Tower): 303-348-4177

Additional Resources

- DEN Stormwater Management Plan
- Deicing fluid and application equipment manufacturers specs
- FAA Advisory Circular No. AC 150/5200-30A Airport Winter Safety and Operations
- DEN Operations Snow Plan
- DEN Manager's Bulletins
- Stormwater Pollution Prevention Training
- DEN Rules and Regulations, Part 40 – Conduct of Tenants Using the Airport
- 40 CFR 122-124 NPDES Regulations for Stormwater Discharges