

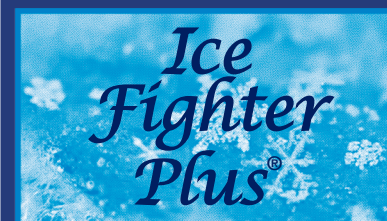
# Ice Fighter Plus®

**Snow and Ice Melter**

**The only snow and ice melter that  
reduces freezing damage to concrete.**



**Ice Fighter Plus® tested superior to other popular deicers in reducing damage to concrete caused by repetitive freeze - thaw cycles.**



**Snow and Ice Melter**

- ❄ Each pellet uniformly coated for even protection
- ❄ Now contains Anti-Corrosion additives
- ❄ Melts more snow and ice per unit than any other ice matter

**www.morgro.com**

Fax: (801) 266-1183  
Phone: (801) 266-1132  
TOLL Free 1-800-221-1049

**MORGRO, INC**  
145 West Central Ave.  
Salt Lake City, UT 84107

# Ice Fighter Plus®

**Snow and Ice Melter**

**Friendly to Nature  
with CORROSION INHIBITORS**

**Without it... your concrete's  
days are numbered.**

## THE PROBLEM WITH DEICERS

Ice melters, themselves, do not chemically harm concrete. Freezing damage to concrete is caused when water from melting snow and ice is absorbed into the concrete (concrete is amazingly porous and can absorb 10% or more liquid by volume). As the water alternately freezes and thaws, surface spalling or flaking takes place as a result of the ice's expansion within the concrete. At 23° F, ice formed in the freezing process can exert 8,749 pounds of pressure per square inch. The tensile or strength of concrete is only 650 pounds per square inch. Although other ice melters chemically do not harm concrete, they do nothing to protect the concrete from the main cause of damage – freezing water.

Only **ICE FIGHTER PLUS®** with its additive Propolyice, combines with melted water to form a polymer barrier which reduces the amount of liquid entering into the pores of the concrete. With less liquid being absorbed, freezing cannot exert as much pressure on the concrete (because there is more room for expansion) which reduces flaking and spalling up to 80%.

**ICE FIGHTER PLUS®** contains **CORROSION INHIBITORS** to reduce metal corrosion in reinforced concrete, metal stair railings and other areas where ice melt brine may come in contact with metal surfaces.

## CONCRETE PROOF

Original investigations and research on **ICE FIGHTER PLUS®** were conducted by an independent research lab. Formal procedures were used - described as ASTM test method C - 666. Three concrete blocks shown below were treated with the same amount of deicer and exposed to identical freeze/thaw cycles. As you can see, the blocks treated with **ICE FIGHTER PLUS®** show considerably less damage than those containing salt or calcium chloride.

Subsequent testing used another ASTM method, C-672: (Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Chemical De-icers) Again, three samples from the same mix were exposed to identical freeze - thaw cycles. The results of this independent laboratory testing are shown below.



ASTM test method C - 666



ASTM test method C - 672

**ICE FIGHTER PLUS®** reduced concrete damage because it reduces the amount of water that can be absorbed into the concrete. During the testing, the samples were weighed "wet". Then each sample was heated (to drive off residual moisture) and weighed again. The concrete treated with **ICE FIGHTER PLUS®** had far less moisture.

Some manufacturers have suggested that test method C - 672 is the only method to compare deicer effects on concrete. We do not believe this to be the case. It is our contention that both ASTM methods C - 666 and C - 672 as shown above, not only confirm, but also complement the fact that **ICE FIGHTER PLUS®** significantly reduces freezing damage to concrete.

## Ice Fighter Plus® THE CONCRETE SOLUTION

### 1. ECONOMY



**ICE FIGHTER PLUS®** melts more ice and snow per unit of weight than any other deicer. In fact, at 25° F, **ICE FIGHTER PLUS®** melts 20% more snow and ice than pelletized calcium chloride and 48% more than flaked calcium chloride.

### 2. PLANT SAFE



Damage to trees, shrubs and lawns by chlorides is ordinarily a minor problem. Commonly, pelletized calcium chloride de-icers contain approximately 60% chlorides. **ICE FIGHTER PLUS®** contains slightly less chlorides; however, it takes less product to melt the same amount of snow and ice as other de-icers. **ICE FIGHTER PLUS®** can actually lessen the possibility of damage to trees, shrubs and lawns. Used as directed, **ICE FIGHTER PLUS®** will not be toxic to plant life.

### 3. TRACKING



All ice melters when used in excess can create conditions that cause tracking. Tracking is simply a function of mechanically carrying particles of an ice melter by foot traffic. Once again, because **ICE FIGHTER PLUS®** requires the use of less product (reacting quickly and efficiently) the possibility of tracking is greatly minimized when compared to ordinary de-icing products.

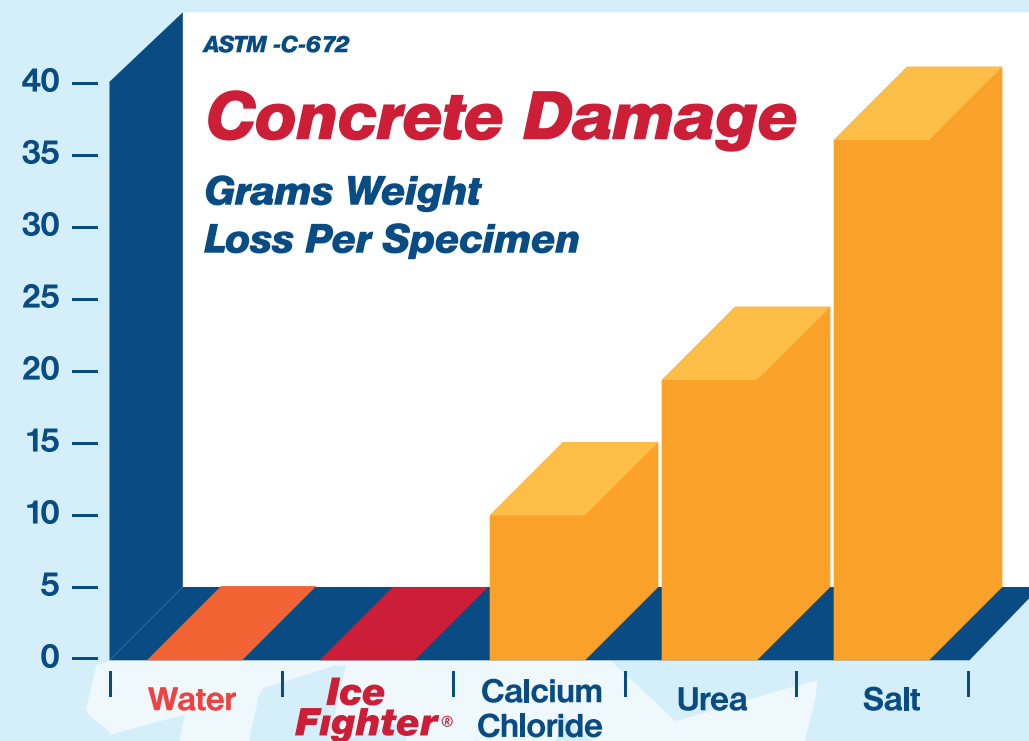
### 4.\* MELTING POINT



At a 5% application rate, **ICE FIGHTER PLUS®** has a freezing point that is 1.2° lower than calcium chloride, while at an application rate of 30% (6 times the recommended rate) calcium chloride can melt at a temperature which is lower than **ICE FIGHTER PLUS®**. Obviously, it is neither economical nor logical to melt snow and ice under these conditions. The risk of tracking as well as damage to trees and shrubs increases dramatically if the recommended rates are exceeded.

\* (Freezing point data, etc., from Chemical Rubber-Handbook of Chemistry and Physics.)

## Without Ice Fighter Plus, your concrete's days are number.



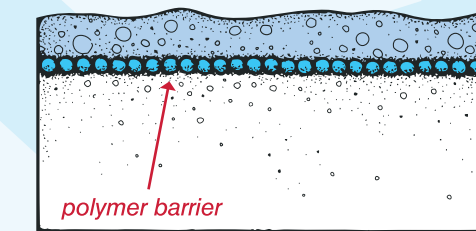
## WHAT IS ICE FIGHTER PLUS®, AND HOW DOES IT WORK?

**ICE FIGHTER PLUS®** was developed by a civil engineer. The investigations and research were conducted at an independent civil engineering lab. **ICE FIGHTER PLUS®** is a two component system consisting of:

### 1. The Ice Melter

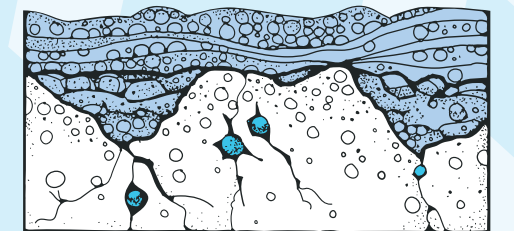
During the manufacturing process, the Propolyice's anticracking agents and chemical additives are mixed with and coated onto the ice melter (sodium chloride crystals) in such a manner as to produce a uniformly coated product.

**ICE FIGHTER PLUS®** reduces freeze/thaw damage to concrete by diminishing the amount of melted snow and ice water entering into the concrete as illustrated below:



with **ICE FIGHTER PLUS®**

Melted water combines with Propolyice to form a polymer barrier that reduces the amount of water entering into the pores of the concrete. Entrapped water now has room to expand as freezing occurs.



without **ICE FIGHTER PLUS®**

Melted water enters into the pores of the concrete, filling the pores in the upper level of the concrete. As freezing takes place, trapped water expands, causing spalling.

## Recommended application rates:



**TO EASE SNOW REMOVAL** - Apply **ICE FIGHTER PLUS®** at the beginning of the snow storm if possible. Broadcast approximately 1/4 oz. per sq. yd. over area to be treated.

**FOR ICE REMOVAL** - Apply **ICE FIGHTER PLUS®** evenly over surface at the rate of approximately 8 oz. (1 cup) per sq. yd. of area to be treated for each 1/4 inch of ice. **APPLY TO WELL-CURED CONCRETE ONLY**

**ICE FIGHTER PLUS®** Conveniently packaged for residential and commercial use.  
 • 50 lb. heavy duty bags • 50 lb. industrial boxes • 100 lb. fiber drums • 50 lb. pail