



# Stepstone, Inc.

17025 SO. MAIN ST. GARDENA, CA 90248 | 310-327-7474  
Precast Solutions Since 1963 | 13238 SO. FIGUEROA ST. LOS ANGELES, CA 90061 | [www.stepstoneinc.com](http://www.stepstoneinc.com)

## USE OF HEATING UNDER PAVING INSTALLATION

### Introduction

Regions that are commonly exposed to snow and freezing temperatures may benefit from having heated pavement. This heating is typically in the form of heat elements installed beneath pavement and can be successfully used in either walking paths or vehicular areas. An example can be seen in figure below. The goal of such a system is to ensure that snow and ice cannot form which will reduce the need to salt and/or plow these areas.

### Product Description

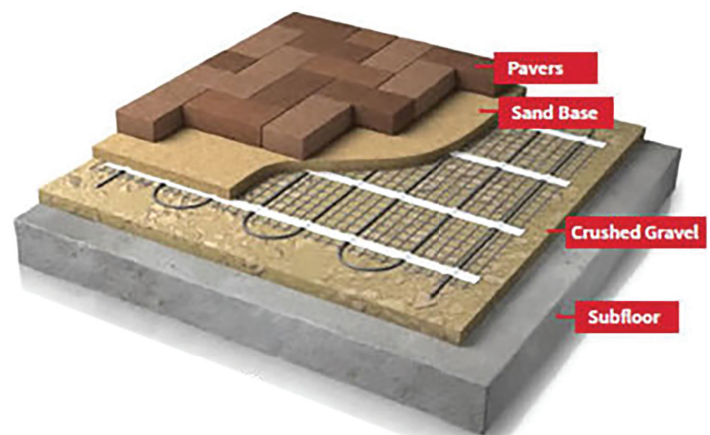
All pavers are manufactured by Stepstone, Inc. in Gardena, California. These high quality concrete pavers are available in many sizes as required by architects and home owners, utilizing High Early Type-III Portland Cement, resulting in a hard rock concrete with a compressive strength of 5,000 PSI. Stepstone, Inc pavers can be used in both commercial and residential applications.

### Concerns

Stepstone, Inc. tests its concrete to comply with ASTM C666 which tests the durability of concrete that is exposed to rapid freezing and thawing. The test specimen will go through 300 cycles from 0°F to 40°F and back to 0°F. After the cycles have been completed, the physical characteristics of the specimen are analyzed to determine a durability factor. The biggest concern, then, of using heating elements is potential contribution to this freeze-thaw cycle at an accelerated rate which will reduce the concrete's durability. Also, the installation would require a proper drainage solution to ensure that there is no significant pooling of water. When porous materials, such as concrete, are submerged they will naturally absorb the water and the expansion of water while freezing would cause deterioration of the concrete.

### Restrictions and Limitations

One way to limit the number of freeze thaw cycles the pavers will be exposed to is to make sure that the heating system is used continuously throughout the months that the environment will be in subfreezing temperatures. By maintaining the heating process, the pavers will not be cycling from freezing to thawing and will remain durable. Likewise, with adequate drainage designed in the installation, the water resulting from melting snow will be able to flow to the sub base and protect the concrete pavers.



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For more information please call Stepstone, Inc. at 800.572.9029

For more than 60 years Stepstone, Inc. has manufactured a wide range of wet-cast precast concrete products.

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