

A GUIDE TO SWELLING SOIL FOR COLORADO HOMEOWNER ASSOCIATIONS

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TABLE OF CONTENTS

What is swelling soil?	1
How can swelling soil be recognized?.....	1
What can homeowner associations do to reduce/prevent swelling soil?	1
Routine Inspection and Maintenance.....	2
Proper Maintenance and Irrigation Practices.....	2
Structural Floor System Maintenance.....	2
Subsurface Drainage Maintenance	2
Surface Drainage Maintenance.....	2
Slope Maintenance.....	2

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The Colorado Geological Survey recently published and released *A Guide to Swelling Soil for Colorado Homebuyers and Homeowners*, second edition. This article and that publication provides an overview of the expansive soil problem in Colorado. It also suggests steps for protecting homes against swelling soil and provides information on how to recognize swelling soil damage. This article summarizes practices relevant to associations, board members, managers and homeowners.

What is swelling soil?

Swelling soil is soil containing montmorillonite clay minerals. Swelling soil can cause damage when the soil changes volume, due to the soil either expanding when moisture is added, or shrinking when the soil dries out. A soil that has moderate to high swell potential is capable of causing uplift to concrete slabs and other property damage.

The magnitude of the volume change and subsequent damage is influenced by several factors:

- the amount of moisture change;
- the amount of expansive clay in the soil;
- the soil density;
- the amount of structural loading; and
- the type of minerals in the clay.

Gradual damage from swelling soils is less dramatic than a fire, tornado or flood, but the relentless push of clay bedrock into basements, roads, pipelines and utilities can be a homeowner's and a common interest community's worst nightmare.

How can swelling soil be recognized?

It is possible to visually identify swelling soil. Soil containing swelling clay will be very sticky when wet, and may display cracks or have a puffy popcorn texture when dry.

However, it is also possible that there will be deeper layers of swelling soil present beneath the property. Drilling and trenching can help to identify swelling soil beneath the ground.

What can homeowner associations do to reduce/prevent swelling soil?

Proper maintenance of the common elements, limited common elements, and other portions of the Community that the Association is responsible for maintaining can reduce, limit or prevent expanding soil.

Homeowner Associations should evaluate their governing documents and their Community to determine whether the Association is responsible for any of the maintenance activities listed below. Depending on the nature of the Community's governing documents, the Association may be responsible for any of the following:

- Routine Inspection and Maintenance. This extends to all of the systems that were designed to protect the property from swelling soil damage, including slabs, walls, subsurface and surface drainage, slopes and landscaping.
- Proper Maintenance and Irrigation Practices. Best practices include: maintaining adequate runoff drainage slopes; cleaning gutters and downspouts; ensuring that lawns and gardens are not over watered; properly maintaining sprinkler systems; removing trees shrubs and flowers planted too close to foundations; sealing old construction joints and cracks that develop over time; inspecting concrete and walls; and repairing cracks that are found as soon as possible.
- Structural Floor System Maintenance. Ventilation systems, floor grates and barriers should be well maintained and sub floor soil conditions should be monitored periodically.
- Subsurface Drainage Maintenance. If an area drain is installed, the Association should be aware of its location and should have the systems maintained and cleaned out regularly.
- Surface Drainage Maintenance. Roof gutters should be inspected at least twice a year (spring and fall). All debris should be cleaned out of the metal gutters and checked for rust. Downspouts should be checked for clogging, and sprinkler systems should be maintained.
- Slope Maintenance. Positive slopes must be maintained, especially over backfill areas. Settling of concrete sidewalks may necessitate the removal and replacement of these elements, if it results in reverse drainage.

Associations with responsibility for areas that have expanding soils should also educate homeowners regarding expanding soils and the actions that homeowners can take to reduce, limit or prevent swelling soil on their property.

Summary

Homeowner Associations (in condominium, townhome and other attached home communities) share a role with homeowners, homebuilders, and engineers to work to reduce and prevent swelling soil. Even associations for single family detached communities may have responsibilities. To find out, consult with your association attorney.

If you have any questions regarding your Association's responsibilities to reduce, limit and prevent expanding soil, contact an attorney at our firm.

To obtain a copy of *A Guide to Swelling Soil for Colorado Homebuyers and Homeowners*, contact the Colorado Geological Survey office, 1313 Sherman St., Room 715. The publication is available for \$7.00.