

# CleanSpace®

## Crawl Space Encapsulation System®

*There are three things that destroy materials in general, and wood in particular: water, heat and ultraviolet radiation. Of these, water is by far the most important.*



A dirt crawl space under a home is a very bad idea. The earth has very high humidity in the soil. This water vapor moves easily into the crawl space and upwards into the house environment.

A damp environment is very unhealthy and destructive. Mold thrives and reproduces by producing airborne spores by the millions, and some molds are toxic.

Insects and critters of all kinds love damp environments and wet materials. Rot and decay occur in damp environments causing structural damage.

The natural airflow in a house is from bottom to top. This sucks the moist air and everything in it up into the living areas of the home.

Mold spores, odors, humidity and critters create a very unhealthy environment for people. Many people are allergic to these things, and experience a host of symptoms and don't realize that their dirt crawl space is affecting their health.

Dirt crawl spaces do not have to be wet or flooded to be extremely unhealthy.

Heating and cooling costs are higher in a home with a vented dirt crawl space.



*The real solution to dirt crawl spaces -*

**The CleanSpace® System**  
- developed by **Basement Systems®**,  
the world leader in dry, below-ground technology





# The Problem and The Damage

## BUGS & CRITTERS

Dirt crawl spaces are great places to live, thrive and reproduce if you're a bug. There is an even temperature, moisture, damp wood and shelter. Spiders, beetles, centipedes, termites, and all kinds of other insects are found in dirt crawl spaces. Animals such as mice (dead and alive) are commonly found in dirt crawl spaces. In some cases, even rats, snakes and small animals have been found.



## CONDENSATION

Because of the high humidity level in a dirt crawl space, cool surfaces such as the earth at 55 degrees, concrete and metal surfaces will sweat with water vapor condensing out of the air. This causes rot, smells, and is a water source for critters.



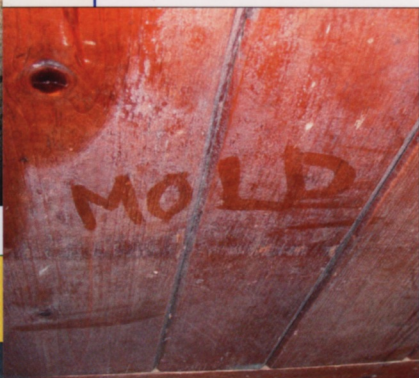
## MOLD & STRUCTURAL DAMAGE

Mold spores, the seeds of mold, are in the air everywhere. All they need to grow is organic material such as wood, the right temperature range, and moisture. Of these, the only one that can be controlled is moisture.

Dirt crawl spaces have the high humidity levels necessary for mold growth. Humidity levels from 50% to 90% are easily found in dirt crawl spaces that have never flooded.

Mold can grow on dirt, insulation, framing and even under your carpet on the first floor. Mold destroys organic materials as it feeds on them. Mold reproduces by producing millions of floating airborne spores, which some people are very sensitive to. Spores can be dormant for many years, waiting for the right conditions to grow. Some molds produce mycotoxins, such as the black mold *Stachybotrys*. Many articles have been written on the effects of mold and toxic mold.

Don't panic; there is a solution that will stop your crawl space from being a hospitable environment for mold. Mold will not grow when the humidity levels are reduced below 50%.



## OUTSIDE AIR

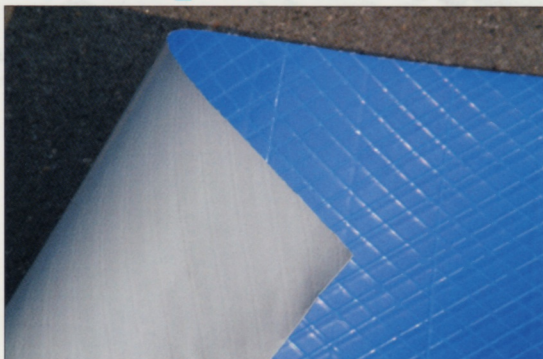
Most dirt crawl spaces are vented to get the moisture out. The problem is that the vents let warm humid air in during the summer. This adds moisture to the crawl space, and makes the house harder to air condition as all this moisture needs to be wrung out of the air. In the winter the vents let in cold air, which causes very cold, uncomfortable floors upstairs and higher heating costs.





# The CleanSpace® Product Line

## CleanSpace®



- 20 mil thick
- Our heaviest liner
- UltraFresh® antimicrobial protection
- Blue/white
- 25-year warranty\*

## CleanSpace® Light



- 10 mil thick
- UltraFresh® antimicrobial protection
- Use over **Drainage Matting** and **TerraBlock™**
- Green/white

## Drainage Matting



- Creates a drainage space under CleanSpace® for water to flow beneath.
- Adds durability, puncture resistance, and a thermal break.

## TerraBlock™



- ¾" Flexible foam insulation with vapor barrier on both sides.
- Insulates your crawl space floor beneath CleanSpace®

## SilverGlo™ Wall Insulation



**SilverGlo™** panels look different because they ARE different. Tiny graphite particles permeate its foam insulation to give it that silver/gray shine. These tiny particles reflect heat and lower the material's conductivity for superior **R value** per inch. In addition to resisting heat conduction, **SilverGlo™** boasts a radiant barrier, which reflects heat back into your crawl space for ultimate energy savings.



**SilverGlo™** can also be installed on the perimeter of your floor framing system (rim joist) for maximum energy savings.





# The **The Solution:** CleanSpace® System

The **CleanSpace®** liner is used to isolate the home from the earth completely and permanently. The liner is a heavy 20-mil-thick material similar to a pool liner. It is manufactured in 7 layers – a blend of high-density polyethylene, low-density polyethylene, and two layers of polyester cord reinforcement. It is blue on one side and white on the other. The bright white finished side really brightens a crawl space with the available lighting and allows you to easily see that your crawl space is free of mold, insects and dirt. The **CleanSpace®** liner is manufactured with an antimicrobial additive called UltraFresh – molded right into the material.

## How It Works...

The **CleanSpace®** Crawl Space Encapsulation System® completely isolates your home from the earth. This dramatically reduces the humidity level in the air which, when combined with sealing outside air and dehumidification, will eliminate mold growth and rot from your crawl space and make the whole house healthier.

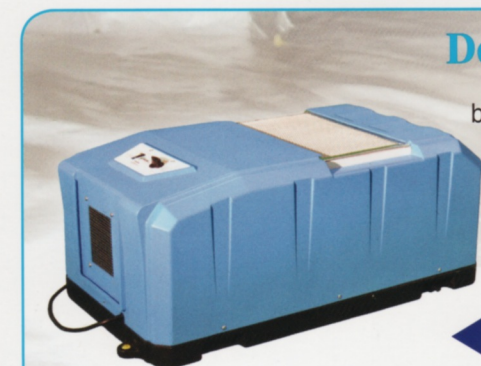
Trained installers will remove wood and organic materials from your crawl space floor. Rocks and uneven surfaces are leveled, depending on the crawl space conditions.



The **CleanSpace®** liner is carefully cut and installed. The workers will usually be working in their socks to keep the liner clean. That's how clean your crawl space will be!

Small holes are drilled into the top of your crawl space walls, and nylon fasteners are installed to permanently secure the **CleanSpace®** liner to the walls.

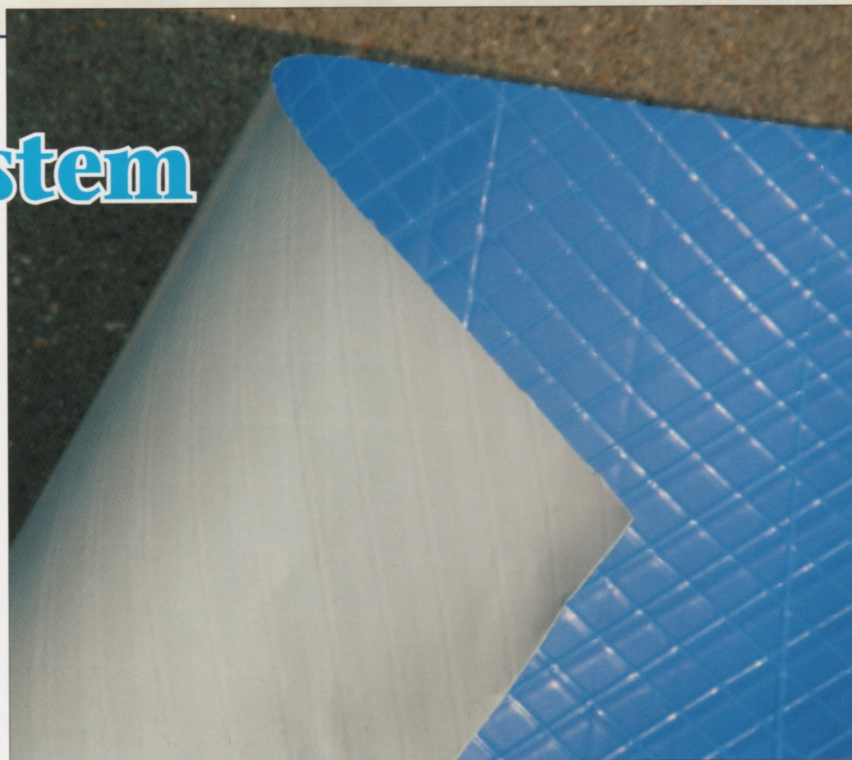
The top edge of the **CleanSpace®** liner is sealed to the walls with polyurethane sealant. All seams are sealed with special 4"-wide sealing tape and/or sealant made for the **CleanSpace®** liner. The **CleanSpace®** liner is also sealed around other objects such as pipes, columns, and piers with any combination of sealants or concrete.



## Dehumidification

Many crawl spaces can benefit from (and most need) dehumidification to dry the crawl space air. Your dealer can recommend a SaniDry™ unit appropriate for your home.

▶ The SaniDry™ CX air system will complete your CleanSpace® system.



The **CleanSpace®** liner is tough enough for you to crawl on it and use your crawl space for storage. Servicemen can crawl on it without worry of putting holes or tears in the liner. The liner completely stops moisture penetration.



The **CleanSpace®** liner is COMPLETELY SEALED over the floor and walls to fully isolate your home environment from the earth. The result is an attractive, bright, tough, impervious liner and a healthy home above it!



## Drainage Options

Most crawl spaces are wet and require a drainage system underneath the **CleanSpace**® liner. Your local **CleanSpace**® dealer will recommend a drainage system that is best for your crawl space conditions.

A Basement Systems® SmartSump™ will be necessary in wet crawl spaces to drain the water and pump it out. The SmartSump™ has a reliable Zoeller® 1/3 hp cast iron pump in a strong durable sump liner with holes in it to accept water from the ground. It features an airtight lid to keep moisture and bugs out, and a WaterWatch® alarm system to let you know if there is ever a plumbing leak, pump problem, or power failure.



SmartSump™

A product called a SmartDrain™ can be installed in the low spot of your crawl space. It has the unique ability to detect and alert the homeowner of any plumbing leaks.



A wet crawl space will need a perimeter drainage system such as SmartPipe™.

The lid and unique sump liner are designed to easily accept the **CleanSpace**® system for an air-tight seal between the **CleanSpace**® and the SmartSump™.

## Crawl Spaces with Concrete Floors

Crawl spaces with concrete floors that are wet or damp can be very difficult to install a drainage system in because they are so low, and removing concrete is difficult or impossible. Furthermore, a concrete floor is porous and lets water vapor pass through it. The **CleanSpace**® system with **CleanSpace**® drainage matting is a perfect solution for these problems!



Drainage matting

## Sealing Outside Air

Building Scientists, and the U.S. Dept. of Energy agree that vented crawl spaces in warm and cold climates are a bad idea. With the **CleanSpace**® Encapsulation System, your vents will be sealed up! This will save you energy costs, and make a more comfortable and healthy home.



The **CleanSpace**® Vent Cover seals crawl space vents permanently from the outside to stop unwanted outside air from entering the crawl space, while covering ugly vents with an attractive panel.



The EverLast® Crawl Space Door provides a secure, airtight seal to crawl space entranceways.

## Other Enhancements...

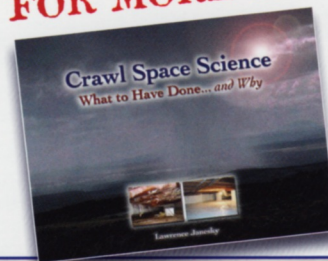
The Turtl™ is a secure, lockable, and durable crawl space access entry. Ideal for below-grade crawl space access.



The SmartJack™ crawl space stabilizer is able to steady and support floor joists that have sagged over time.



## FOR MORE INFO:



See the book 'Crawl Space Science' for more detailed information on crawl space concerns, issues, and solutions. Available from your local **CleanSpace**® dealer.



crawl spaces **WITHOUT** water leakage

crawl spaces **WITH** water leakage

**BASIC Product** +Combinations

CleanSpace®

CleanSpace®

**Features**

- Basic CleanSpace® system - 20 mil liner

**Benefits**

- Durable 25-year warranty
- Reduces moisture & relative humidity

CleanSpace® • Drainage Matting • SmartPipe™

CleanSpace® Drainage Matting SmartPipe™

**Features**

- 10 mil CleanSpace® over floor.
- Drainage matting creates a space for water to drain.
- Perimeter drainage system (SmartPipe™)

**Benefits**

- Drainage matting creates a space for water drainage.

**ENERGY Saving** +Combinations

CleanSpace® • SilverGlo™

CleanSpace® SilverGlo™

**Features**

- 20 mil CleanSpace® over floor.
- 2" Thick SilverGlo™ insulation with radiant barrier to insulate (R11) and reflect heat back into crawl space.

**Benefits**

- Dramatically reduces heat loss through crawl space walls.

CleanSpace® • Drainage Matting • SmartPipe™ • SilverGlo™

CleanSpace® Drainage Matting SmartPipe™ SilverGlo™

**Features**

- 10 mil CleanSpace® over floor.
- 2" Thick R11 radiant barrier on walls.
- Drainage matting creates a space for water to drain.
- Perimeter drainage system (SmartPipe™)

**Benefits**

- Dramatically reduces heat loss through crawl space walls.

**Ultimate ENERGY Saving** +Combinations

CleanSpace® • SilverGlo™ • TerraBlock™

CleanSpace® SilverGlo™ TerraBlock™

**Features**

- 10 mil CleanSpace® over TerraBlock™.
- 2" Thick SilverGlo™ insulation with radiant barrier to insulate (R11) and reflect heat back into crawl space.

**Benefits**

- Both the walls and floor are insulated to save the most money.

CleanSpace® • Drainage Matting • SmartPipe™ • SilverGlo™ • TerraBlock™

CleanSpace® Drainage Matting SmartPipe™ SilverGlo™ TerraBlock™

**Features**

- 10 mil CleanSpace® over TerraBlock™.
- 2" Thick R11 radiant barrier on walls.
- Drainage matting creates a space for water to drain.
- Perimeter drainage system (SmartPipe™)

**Benefits**

- Both the walls and floor are insulated to save the most money.

Perimeter drainage systems and SmartSumps™ recommended for crawl spaces with ground water leakage. SaniDry™ CX dehumidification is recommended to reduce relative humidity and prevent mold.