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# HOLE NOTES

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## TURFGRASS HELP NEEDED

by KEITH SCOTT, CGCS  
MGCSA PRESIDENT

May has brought the much needed warm temperatures and rain that has benefited the growth of Poa Annua on our courses. This assuredly has been one of the factors that has assisted us in a rather busy spring.

As each year passes it is more and more evident that the Turf Industry in Minnesota is in dire need of a Turfgrass Extension Specialist. All growers of turfgrass (golf courses, sod producers, parks, landscapers, homeowners, etc.) have experienced many problems over the past few years and in most cases are unable to receive help. Those who do are not receiving the right information. Although the MGCSA has constantly pushed for this position it is time that the entire Minnesota turf industry let their respective state representatives and university officials know what is needed.

Heavy rains did not deter close to 100 members from attending our May meeting at Edenvale Golf Club. Our thanks to Superintendent Kevin Benson for hosting this event and to the Lesco Company for their equipment show and arranging the educational session.

The 3rd Annual Turfgrass Research Day is fast approaching. Put aside Friday, June 16 to not only support a good cause but also to get away and relax with your club officials, to look at a different course and what they have to offer.

## TARDY AGAIN

We would like to apologize for the lateness of this issue of *Hole Notes*. Because of technical difficulties and scheduling problems, preparation was delayed.

We would like to remind you that the deadline for advertising and articles each month is the 20th of the preceding month. We encourage advertisers and contributors to submit their copy to the MGA office by the deadline. If you have any questions contact Greg Hubbard or the office.



# EVERYTHING YOU WANTED TO KNOW ABOUT STRESS AND MORE!

First part of a two part series.

by John P. McNamara, M. D.

*Seleyes Motto*

*"Fight for your highest attainable aim, but  
do not put up resistance in vain"*

Stress can kill, and if it doesn't, it often leads to burnout at work, conflict with your loved ones and unhappiness with yourself. People suffering from stress lose their sensitivity to the joys of life and lack enthusiasm in their daily living. The ability to adapt to pain, boredom, and excess burdens is often gone.

Yet, stress can be a lifesaver. Without the challenge to compete, our greatest athletes would fail to compete at their best levels. Artistic skills and creativity are fueled by stress to emulate or produce an original design, painting, or sculpture. The interpersonal stresses of learning how to work and play together is the melding factor that leads to great teamwork and great friendships. It is such healthy stress that leads to happy marriages and close-knit families. Stress can be handled in a very meaningful fashion and actively managed to attain the goals we have set for ourselves. We must learn to direct and manage stress, rather than have it rent us asunder.

Stress is inevitable. It abounds. Life is not being dealt a good hand, it is playing the poor hand well. We are hired . . . and we are fired. We are promoted... and demoted. Marriages begin and they end. Life is not fair; it is important to recognize the unfairness of it. In between, there are the necessities of living with someone, raising children, and making it all work. There is no way we can be alive and not experience stress. The true challenge, once again, is not stress avoidance, but making it work for us.

Obviously, stress can build. It has been said that the skill to win the wars of Europe was learned on the playing fields of Eaton. Sports, and the military, are good examples of ways to build people. Jogging, for instance, builds strong muscles and hearts. Yet unmanaged, stress can kill. It can cause headaches, high blood pressure, accidents, alcoholism, ulcers, heart attacks, and a whole host of unfavorable problems to those who invite it. These stress disorders cost industry over \$17 billion annually. Up to three quarters of a medical physician's time can be devoted to responding to the activation of the stress response. The key is to reduce the impact of

stress. We must learn to direct the stress response energy into activity that helps rather than hinders our psychic and physiological well-being.

Ravages of stress on bodies and psyches result from physiological changes activated by threats to our physical or psychological integrity. This is referred to as the "fight or flight" syndrome. In prehistoric times, these changes were needed for survival. Should Neanderthal Man feel threatened, his heart beat faster and his blood pressure rose as epinephrine (adrenaline) infused his body. His alertness increased and his body prepared for fight or flight. Like ourselves, he felt anxiety and fear as he sensed attack. Today, however, our options are limited by the available responses. Fight or flight is often maladaptive. We may feel our bodily functions racing out of control, but are unable to purposely respond to these signs as our world spins wildly out of orbit.

Myths about stress abound. One of the biggest is that stress is always harmful. Another is that it deters good performance. While many people try to reduce stress as a means of improving their performance, we now know that a modicum of anxiety is needed to study for an exam or to drive a car defensively. Without the stress of having to pay bills, many would sleep, rather than work. Some believe that stress comes only from negative life events, such as death, divorce, or illness. Yet such positive life events such as getting married, having a child, or inheriting a large estate can also produce stress, sometimes equal to or greater than many losses. For instance, job promotion brings not only increased status and money, but also increased responsibilities, deadlines, and loneliness. People at the top are more accountable for their failures than those at the bottom. When things go well, we all share in the feeling that we worked together to achieve a goal. When disaster strikes, we all search for the culprit, the person at the top. After all, doesn't the buck stop there?

Stress will never go away. Environments change, but we are human beings who have within us the physiology and the fears of our primitive forbears. The problem is not so much the stress we bear, but what we do with it when it infringes on us. How can we ride the stallions of stress, rather than have them trample us under? Mild to moderate stress generally enhances functioning. Chronic or intense stress, seen in many Vietnam veterans, causes detrimental chemical and physical changes to our bodies and our minds which may be irreversible.

Studies of top executives suggest that those in high-pressured jobs are often more able to handle stress than others. Perhaps this is due to the fact that those with the most skills in adapting to stress rise to the top—a Darwinian survival of the fittest. It is my own studies that suggest that the persons who face persistent and frequent stress, suffer the most stress-related damage in their

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jobs. The top executives may have high pressure jobs, but they also have unlimited resources (other people, committees, consultants) at their disposal. They can delegate away their pressures. They can achieve victory in their workplace. For those of less lofty position, there is no delegation of duty or responsibility. No matter how hard they work, nor how perfectly they complete their tasks, will they see victory. They rarely are commended and bonuses are unheard of. Crime and crisis prevails as policemen continue unrewarded. Gifted teachers are stressed to depression and illness by over crowded classes and unappreciative parents. The lack of recognition and reward coupled with the inability to escape job pressures through the delegation of responsibility naturally results in stress. Accidents, absentee

**END PART I**

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## **TREE MANAGEMENT ON GOLF COURSES**

by **D. W. French, Professor**  
**Department of Plant Pathology**  
**University of Minnesota**

As everyone involved with golf courses well realize, trees are extremely important in providing a pleasing landscape, forming backdrops to greens, outlining fairways, separating holes, and providing shade. Along boundaries of golf courses, trees can help keep golf balls from going astray and causing damage to people, vehicles and nearby buildings. No one enjoys playing on a treeless golf course even though it can be upsetting to hit a tree that redirects the ball into a pond or other hazard.

It has been my experience that golf course superintendents need to be experts in turf management in utilization of specialized golf course maintenance equipment, and in other matters such as personnel management and public relations. A club can not expect this person to be an expert on trees and their diseases, insect pests and all else that can go wrong with trees. In Minnesota we have a large number of people well qualified to deal with the primary factors but when it comes to trees, superintendents and the club members need assistance from a professional in that field. During the past couple of decades I have responded to several golf courses that have tree problems.

When Dutch elm disease came to Minnesota, golf courses were relying extensively on elms but suddenly they were losing many of these trees. Prize winning elms were dying, trees that were landmarks, trees that lined entry ways, or trees that marked greens and doglegs on fairways. At the time it seemed that people responsible

were able to deal with the problem and, in many cases, save some of these valuable elms. On the other hand, some clubs were enticed into programs that were expensive and of little value.

Currently oak wilt is causing tree losses at country clubs. Learning about the disease would help solve these problems or at least reduce the losses and worthless efforts would be avoided. This is only the beginning of a long list of problems that can occur to trees. I thin, in many cases, golf courses could well afford to retain a consultant to work with the superintendent on special problems. It is true that the University has extension personnel who could be of assistance, yet if there is a disease or diseases of considerable concern, extension personnel are limited in what they can do to help. News releases, brochures, and bulletins help but it has been my experience that direct attention by a qualified person is far more effective in solving problems.

Incidentally, oak wilt can be confused with anthracnose, a disease of little consequence, with chemical injury, and with other factors. There are also disease problems on conifers that can kill many trees. Occasionally Dothistroma blight can be a major problem but can be eliminated. Black knot of Canada red cherry is another disease which has been a problem on some golf courses but can rather easily be effectively eliminated. Rather than eliminate this attractive tree it would be better to eliminate the disease. All trees have problems and we should not avoid tree species because they have diseases. It's far more logical to effectively deal with the problems and maintain a wider range of tree species.

Ash yellows is now in Minnesota and although there is no substantive reason to assume that all ash will be killed, it is a disease that should be quickly identified and diseased trees removed.

As we educate more urban foresters we will have people available to assist golf courses with their tree problems. These people can also recommend what trees to plant and be sure these trees are cared for properly. Sometimes tree pruning has caused far more problems than it has solved; it is another area in which this new generation of urban foresters can be of value.

On occasion golf courses need to decide what trees to plant where, and again, a consultant may be of assistance in more wisely selecting the best tree species. They can also help in procuring quality trees and advising on how they should be planted.





# COMPLIANCE AUDIT KIT

*The GCSAA/Hall-Kimbrell Compliance Assistance Program: Guidance and Direction in a Complex World of Environmental Regulations.*

President George Bush has been emphatic in challenging his newly appointed environmental leaders to "chart a course of environmental activism". Bush indicated recently that he was not only interested in pressing civil suits, but that criminal prosecutions would be a part of his drive to lean up the environment.

Every industry must carefully analyze its practices to assure strict adherence to guidelines and demonstrate "moral" responsibility in protecting workers and the environment.

Golf course superintendents, as a group, have long recognized the seriousness of the health and environmental issues associated with modern golf course operations. The Golf course Superintendents Association of America, however, has recognized the need to take aggressive measure to stay ahead of the wave of environmental concern.

With that in mind, GCSAA recently introduced a member

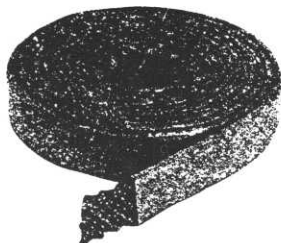
benefit program with Hall-Kimbrell Environmental Services, Inc., one of the nation's leading environmental engineering and analytical firms, to help superintendents respond. The GCSAA/Hall-Kimbrell Environmental Compliance Assistance Program provides golf course superintendents a means to identify areas of operations affected by environmental regulations and identify changes that should be implemented to achieve compliance.

"This is an important program for every golf course in American because no course can afford NOT to assess every area of its operations." said Dennis D. Lyon, CGCS, GCSAA president. "Our main goal is for superintendents to develop a high degree of industry involvement, but there's also a very real payoff in dollars that superintendents will realize in improved management efficiency and reduced liability exposure." Lyon added that one fine or incident would vastly overshadow the nominal cost of the self audit.

The self-audit package gives superintendents a unique opportunity to act on their own. If a regulatory agency was to evaluate the same issues, violations would be reported and dealt with through legal channels. The self audit allows superintendents to evaluate their practices on their own and make modifications accordingly.

The Hall-Kimbrell/GCSAA Self-Audit Package consists of a 30-minute videotape program that outlines eight com-

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mon areas of regulation and the regulatory self audit.

The self audit is a book containing more than 500 questions that allows the superintendent to easily and concisely report his practices in an answer booklet.

Completion of the self audit generally requires about eight hours of a superintendent's time. Most have found it better to split the time over a week or so rather than attempt to move through it from start to finish in one session.

The answer booklet is forwarded to Hall-Kimbrell, where it is scanned by a computer to summarize and sort the data provided by the superintendent.

Hall-Kimbrell scientists and environmental experts then review the data and compile a detailed report on the course's practices and how well they meet the applicable regulations. The report also contains concise overviews of regulations, phone numbers and addresses for federal and state agencies that issue and enforce the regulations and information on state programs that vary significantly from federal requirements.

The response report not only tells superintendents if they are in compliance, it also helps them evaluate procedures and management practices.

The self audit is not a fault-finding tool, but rather a fact-finding tool, explains Hall-Kimbrell Project Manager Steve Wharton. "People may have natural tendency to provide what they expect are the 'desired responses' rather than the honest answers. The value of the package is in the superintendent's review of the resulting reports based on actual situations."

The self-audit and regulatory compliance efforts are not a "one-shot" effort. Existing regulations are often modified and stress periodic review of management practices as new regulations continue to be introduced.

One of GCSAA's considerations in selecting Hall-Kimbrell was the firm's commitment to an ongoing effort. The self audit serves as a prerequisite for follow-up services that include annual update procedures. By periodically updating the audit, it becomes a dynamic management tool for continual evaluation of practices, taking into account new products, regulations and training requirements.

The entire program and its follow-up mechanisms designed to help superintendents become better managers. For more information or details on ordering the self-audit package, contact the GCSAA Membership Department.

## THE EXTENSION LINE

*Hole Notes welcomes the addition of Bob Mugaas of the University of Minnesota Extension Service as a regular contributor. As Hennepin County Extension Agent, Mr. Mugaas will compile various articles related to the golf field for our information. Bob is an excellent source for answers to many questions on horticultural problems. He may be reached at 542-1420. Written requests should be sent to:*

**Bob Mugaas**  
**Minnesota Extension Service-Hennepin County**  
**701 Decatur Ave. N.**  
**Suite 105**  
**Minneapolis, MN 55427**

This month's articles cover Tree Fertilization, Rhizosphaera Needlecast, Lyme Disease and other offers from the Extension Service.

## RHIZOSPHAERA NEEDLECAST CAN BE CONFUSED WITH ENVIRONMENTAL PROBLEMS

by **Cynthia L. Ash**  
**Assistant Extension Specialist, Plant Pathology**  
**Minnesota Extension Service**

Rhizosphaera needlecast, caused by the fungus Rhizosphaera kalkhoffii, can seriously damage spruce trees. The needle discoloration caused by this disease can be confused with the discoloration caused by adverse environmental conditions.

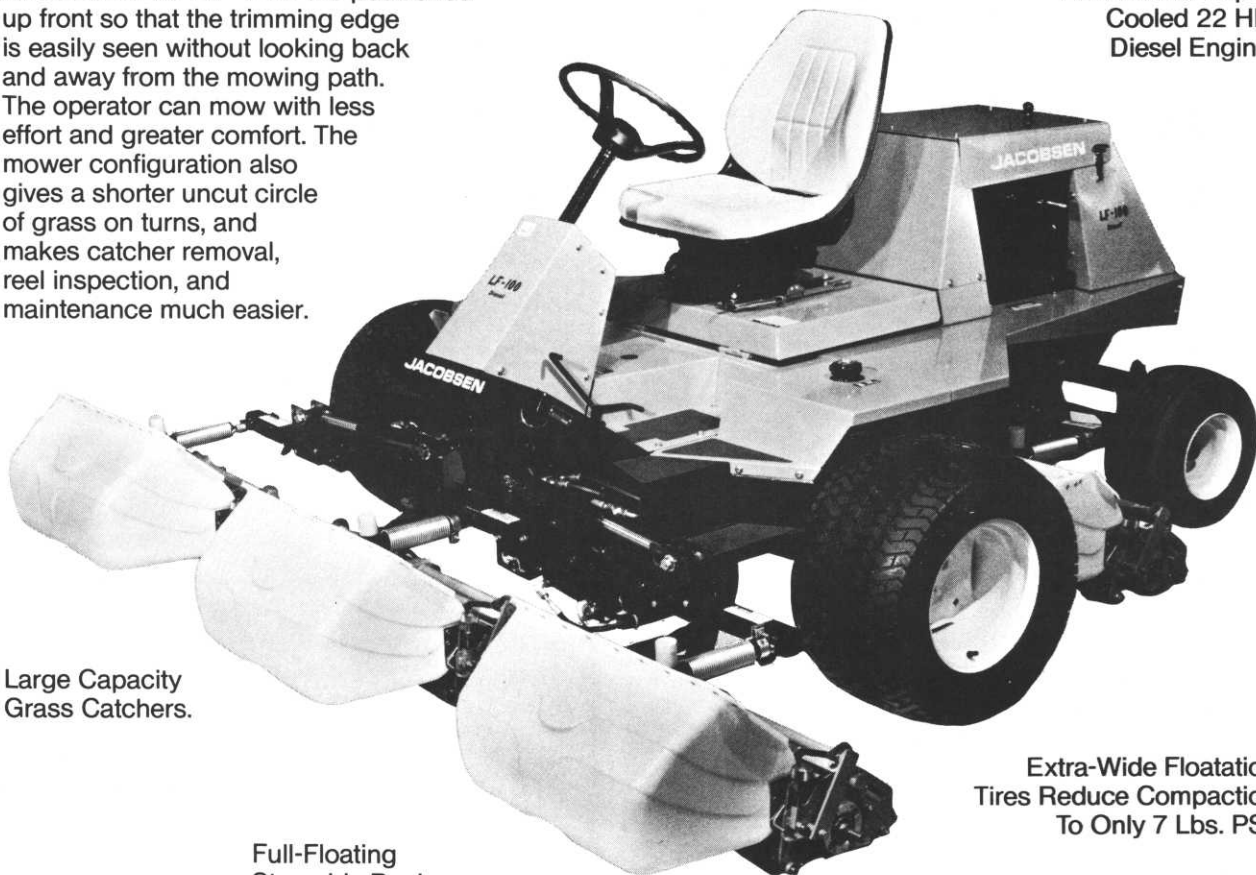
First let's talk about Rhizosphaera needlecast, a fungus attacking individual needles and turning them a reddish-brown. Newly developing needles are susceptible and become infected in May and June but do not discolor until the next June. The fungus produces reproductive structures on infected needles and visible under a magnifying glass or hand lens. These structures are black and fuzzy and replace the white stomata (tiny spores) on the needles. These structures will help to distinguish this from other problems.

Needlecast develops first on the lower branches of the tree and works its way up the tree. The tips of the branches are almost always green. Yet, environmental desiccation (winter injury, sunscald, drought, etc.) affects the most exposed portions of the tree, that is the tips of the branches and the needles on the top side of the branch. Needles in this area of the tree turn brown and fall off. When conditions are severe the branch will be killed. You can check for this by bending the branch, if it snaps easily it's dead. Rhizosphaera needlecast does

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not kill the branch. However, after several years of needle infection and needle loss the branch may die on its own.

To control *Rhizosphaera* needlecast, apply chlorothalonil or bordeaux mixture when the new needles are 1/2 to 2 inches long and again in three to four weeks. To minimize the impact of adverse environmental conditions on spruce trees, keep the trees well watered during dry periods and do not plant young trees too close together.

*Note: An excellent color brochure on "How to Identify and Control Rhizosphaera Needlecast" can be obtained by writing to: North central Forest Experiment Station, 1992 Folwell Avenue, St. Paul, MN 55108.*

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## DEER TICK / LYME DISEASE SEASON DRAWS NEAR

by **Jeffrey D. Hahn**  
Extension Educator, Entomology  
Minnesota Extension Service

Memorial weekend marks the beginning of the high risk season for Lyme disease which is vectored by the deer tick. Although infected ticks are present from April through November, most Lyme disease reports come in June or July.

The deer tick is small with a brownish body and black legs. The tick is found in tall grass and underbrush and can be readily picked up by campers and hunters. The adults feed from March to June and August to November, while the nymphs feed from June to August.

Avoid heavily wooded areas when you can. If this is not possible, take these appropriate safety precautions. Wear protective clothing, such as long-sleeved shirts and pants tucked into heavy socks. Apply repellents to clothing for further protection. A new, effective repellent, called Permanone will be available to homeowners this summer. Check yourself carefully after returning from areas when deer ticks may be present. Nymphal deer ticks are very small and can be difficult to detect.

See a doctor immediately if you believe that you have been bitten by a tick carrying Lyme disease. The first sign of Lyme disease is a red skin lesion accompanied by flu-like symptoms, although there are other indications. Save the tick that bit you as an expert can identify it. correct identification of the tick is very important for a proper diagnosis of lyme disease.

## TREE FERTILIZATION

by **Bert T. Swanson and Carl Rosen**  
Horticulture Science and Landscape Architecture  
Minnesota Extension Service

*The following article was excerpted from a newly revised Extension Folder entitled "Tree Fertilization" AG-FO-2421 by Bert T. Swanson and Carl Rosen. This publication is now available from your local County Extension Office.*

Most trees in Minnesota have a single flush of growth in the spring and spring is the time when trees have the greatest need for nutrients. Early spring, consequently, is the time when nutrients must be available. Fall application is the easiest and probably the most effective, because the ground is easier to work and the nutrients will be available to the tree very early in the spring when growth begins. Fertilizer may be applied from late September until about mid-November. Spring applications may be made as soon as the ground is workable until late April or early May. if soil conditions are extremely dry, water the soil prior to and after fertilization. Nitrogen should be applied to sandy soils only in the spring or much of it can be leached out in the late fall and early spring.

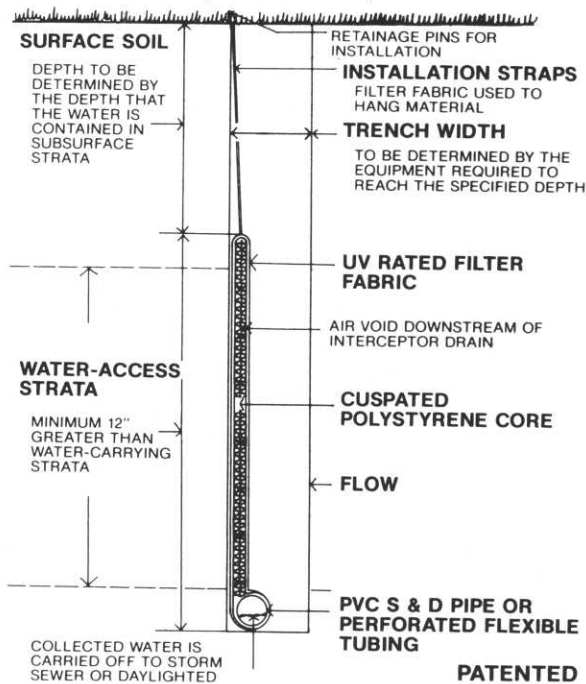
If a tree is showing symptoms of deficiency, fertilizer may be applied at any time during the growing season to correct the problem. Care must be taken, however, to provide sufficient water for absorption of the nutrients by the plant and prevent fertilizer burn of the roots. During periods of hot, dry weather, two to three inches of water should be applied every two to three weeks to wet the top 12 to 18 inches of an average soil. Heavy clay soils require more water at less frequent intervals while light, sandy soils require less water at more frequent intervals. Do not apply fertilizer in late August as plants may force a new flush of growth in early September. Likewise do not allow plants to go into the winter under a nutrient stress as this will also increase winter injury.

Fertilizers require moisture and oxygen to dissolve and be absorbed by the plant. If excess moisture or lack of oxygen exists, nutrient uptake cannot take place even with adequate nutrients available. Continued fertilization under such conditions will result in excess fertilizer levels. Then as the soil dries or becomes aerated, excess uptake may occur. Excess uptake will stimulate excessive succulent growth that is structurally weak, less likely to produce flowers, and more susceptible to disease and insects, such as fire blight or aphids. The high soluble salt concentrations of excessive fertilizer may also damage the tree causing root or leaf burn. Newly planted trees generally should be fertilized at planting time, providing that certain precautions are followed. Fertilization at this time allows deep placement of phosphorus and potassium. Because these nutrients do not move readily in the



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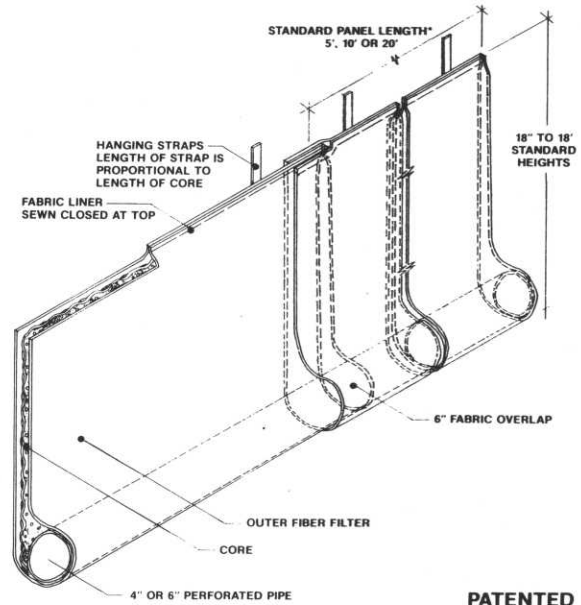
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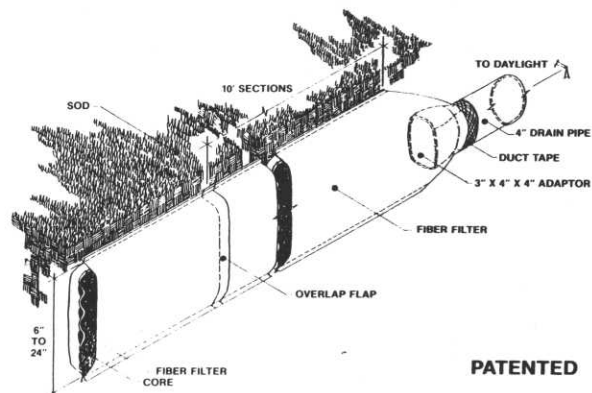


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