



TREE CARE INDUSTRY established 1938 Association

3 Perimeter Road, Unit 1
Manchester, NH 03103

Tel: (603) 314-5380; 1-800-733-2622
Fax: (603) 314-5386

E-mail: tcia@treecareindustry.org
Web site: www.treecareindustry.org

Contact: Peter Gerstenberger
E-mail: Peter@treecareindustry.org

For immediate release

Cracks Can Cause Hazards in Trees

As winter approaches, homeowners and property managers are advised that tree failure is a major cause of property damage. An ice storm or high wind can cause a cracked tree to fail under its own weight.

"Homeowners worried about trees falling and damaging property should call a professional arborist in for an inspection," advises Peter Gerstenberger, senior advisor for safety, standards and compliance with the Tree Care Industry Association.

Gerstenberger notes that trees are designed to withstand storms, but all trees can fail – and defective trees fail sooner than healthy trees. A sound tree becomes potentially dangerous when the tree's woody structure is weakened by one or more defects. During storms, pre-existing defects predispose trees to failure.

"To a professional arborist," notes Gerstenberger, "defects are detectable signs that a tree has an increased potential to fail."

One of the major warning signs of tree failure is a visible crack. Cracks form when the load exceeds the capacity of the stem to withstand the load. The vast majority of cracks are caused by improper closure of wounds, by the splitting of weak branch unions, or by flush-cut pruning. Cracks can occur in branches, stems or roots. The wood behind the crack may be sound, decayed, or missing (cavity). Several types of cracks can be found in trees and, like other defects, the severity of cracks ranges across a spectrum. Vertical cracks run with the wood grain, along the length of the tree and may appear as shear cracks, inrolled cracks, or ribbed cracks. Horizontal cracks run across the wood grain.

Shear cracks, a type of vertical crack, become hazardous when they go completely through the stem and separate the stem into two halves. As the tree bends and sways in the wind, one half of the stem slides over the other, elongating the crack. Eventually the enlarging crack causes the two halves of the stem to shear apart. A shear crack always has a high risk of failure.

An **inrolled crack**, also called a ram's horn, has margins that curl inward on each of its sides and forms inrolled bark and wood. An inrolled crack is formed when a wound does not close properly. Serious decay is always associated with an inrolled crack because the crack margins rework the tree each year allowing decay to spread rapidly. Inrolled cracks often generate other cracks in the same stem segment. Trees with an inrolled crack, advanced decay, and another crack all in the same stem segment have a high risk of failure.

A professional arborist can determine the potential for failure by measuring the shell thickness in a few locations around the tree's circumference, determining the width of the crack opening, and looking for the presence of any other type of crack.

Ribbed cracks are created as the tree attempts to seal over a wound. Margins of the crack meet and mesh but are reopened due to tree movement or extremely cold temperatures. Thicker annual rings are created in order to stabilize the developing crack at the location of the crack. This forms the ribbed appearance over a period of many years. A ribbed crack has a high risk of failure when associated with another crack or with extensive advanced decay.

Horizontal cracks run across the grain of the wood and are formed when loading in the tree's crown pulls wood fibers apart. They are rarely found because they develop just before the trees fail. Horizontal cracks are a sign of imminent failure in leaning trees.

What can you do?

Cracks are hazardous when they compromise the structure of the tree by splitting the stem in two or when another defect, such as internal decay and a crack, do not provide enough sound wood in the outer shell to support the tree. The presence of multiple cracks and decay indicates a very defective tree.

Homeowners who would like a professional arborist to assess their trees should contact the Tree Care Industry Association (TCIA), a 67-year-old public and professional resource on trees and arboriculture. TCIA has more than 2,000 member companies who recognize stringent safety and performance standards, and are required to carry liability insurance. An easy way to find a tree care service provider in your area is to use the "Locate Your Local TCIA Member Companies" program. You can use this service by calling 1-800-733-2622 or by doing a ZIP code search on the TCIA Web site, www.treecareindustry.org.

Editors: If you would like additional information or digital photos, please contact Garvin@treecareindustry.org.