RESEARCH LABORATORY TECHNICAL REPORT

BARTLETT TREE EXPERTS
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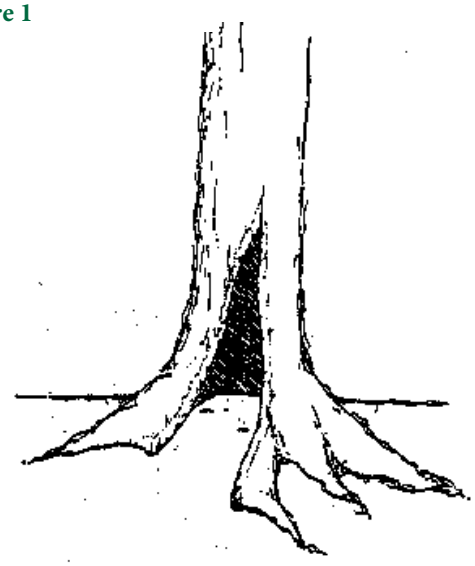
Cavity Filling

E. Thomas Smiley, PhD, Urban Forestry

Years ago, filling tree cavities with concrete, bricks, or mortar was common practice, following the dental practice of removing decay and filling teeth. Aggressive decay removal was found to actually interfere with trees' natural defenses and wound compartmentalization and so has been largely abandoned. There is simply no treatment which can stop wood decay or lessen the effect of wood decay.

Many trees with cavities need to receive a tree risk assessment to determine the extent of the cavities and their contribution to likelihood of failure. In trees of low risk, cavities can be covered or filled to keep wildlife out, to stop the accumulation of water and debris in the cavity, or for aesthetic reasons (Figure 1). If a cavity is to be filled, a coated, expanding foam should be used. Materials and procedure for filling cavities are outlined below.

Figure 1



Materials

Personal protective equipment: goggles, gloves, work clothes and hardhat.

Two-part, quick curing spray, foam polyurethane such as Handi-Foam® II (expanded volumes - #12 = 1 cu. ft., #22 = 1.75 cu. ft., #32 = 2.4 cu. ft.) is the preferred fill material. One part polyurethane will work, but may not be as durable as the two-part foam products.

In addition, the arborist needs an auto body filler, paint (such as black auto undercoating), string, corrugated cardboard, and heavy-duty aluminum foil sponge. Tools that are needed may include a bilge pump or sponge to remove standing water, and a knife or chisel.

Procedures

1. Clean out the cavity removing only loose, decayed wood. Sponge or pump out water. Moist surfaces will not hurt the expansion of the foam but standing water may.

2. Cover the cavity opening with aluminum foil backed corrugated cardboard to provide a non-adhesive backing for the expanding foam. The cardboard should be tied to the tree to keep it from being pushed off. A small opening should be left at the top of the cavity to allow for filling and foam expansion.

3. Wearing protective goggles, gloves and work clothes, fill the cavity about half full using urethane or

polyurethane foam according to the manufacturer's recommendations. The foam should fill the other half of the cavity as it expands. Some foam may be pushed out any opening at the top of the cardboard. Air temperature must be between 65 and 100^0 F for optimum foam expansion. Expansion of the foam typically requires 20 minutes; complete curing of the foam takes 24 hours. Do not disturb uncured foam.

4. After the foam has cured for one or more days, remove the aluminum foil covered cardboard. Using a sharp knife and/or chisel trim away the excess foam to provide a smooth surface across the cavity face. It is best to trim beneath the outer edge of the in-rolling collar so that new growth is directed across the face of the cavity.

5. The foam face may either be covered with paint or auto body filler followed by paint. The body filler will produce a harder, more durable surface. To use the body filler, mix according to label instructions and cover the exposed foam surface with about 1/8" of filler. Allow the filler to cure for 10 to 15 minutes. Remove the excess filler to produce a smooth surface. Not all body fillers are compatible with foam, so a small sample should be tested before applying to the whole surface.

6. Apply the black, rubberized automobile undercoating or similar black or gray paint.

7. Inspect every two to three years for signs of deterioration. Repaint as needed.

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