



Making Casts of Fire Ant Mounds

How to Make an Imported Fire Ant Mound Cast Using Plaster of Paris

By David Gaylor and Fudd Graham

Materials

Plaster of Paris that sets in 2 to 3 hours
Bucket or large bowl for mixing
Cup for measuring plaster and water
Wire whisk
Shovel

Procedure

Since most fire ants tunnels are below the ground, small diameter mounds usually work best. A large mound goes deep and uses too much plaster. Mounds that are built above the surface of the ground are the easiest to dig up. The mound should have as little vegetation as possible. A few weeds are acceptable, but mounds built in turf are difficult to remove without breaking. Make sure the mound is solid. Don't pour the cast directly after a rain. The tunnels won't be solid enough for the plaster to flow in and the mound will collapse.

Once a mound has been selected, flake off the top to expose as many tunnels as possible (at least three). Caution should be taken during the following steps. Although not necessary, an insecticide such as Orthene® may be applied several days before to reduce the risk of stings. Latex gloves with a coat of talcum powder will prevent ants from crawling up your hands and/or protect your hands from being contaminated with Orthene® residue, if used.

Mix three parts water into five parts plaster using a wire whisk. Make sure all of the plaster is incorporated. Any lumps in the mixture will block the tunnels. If the mixture doesn't flow into the tunnel easily, add one additional part water and continue pouring.

Very slowly pour the mixture into one hole at a time. The mixture will run off the side of the mound and not down the tunnel if the mixture is too thick. If this happens, add another part water to the plaster mix. Fill each tunnel completely. If solid tubes are not formed, the cast will be too brittle and will break when removed.



Leave the cast in the ground for at least two days. The longer the cast remains, the easier it will be to remove.

When removing the cast, carefully dig away from the mound. Digging towards the mound will shift the dirt and break the fragile tunnels. Leave a layer of soil around the cast for protection. Dig down at least a foot. Most mounds will have tunnels up to several feet below the surface of the ground. A cast much larger than one foot will be heavy when removed and will tend to break due to the weight of the soil.

To remove the soil from the cast, lightly spray with water.

Making a Fire Ant Mound Cast

by Doug Petty, Miller County Staff Chairman

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A cast of a red imported fire ant mound is an excellent demonstration tool to show the complex tunnel designs of the fire ant mound. Although the lead cast has greater durability than the wax, it is much heavier (at least ten times) and is not well suited for transporting. Wax casts are easier to make due to the lower melting point of wax. Also, when using lead on clay soils, the high temperature cooks the clay and makes it hard to clean out the cast.

Method for Wax Casts

The type of wax used in constructing a wax mound is the type of wax used in sealing wine bottles. I have used Bottle Seal (trade name), which may be purchased at a hobby store for around \$7 per pound. A minimum of 2 pounds of wax is required to make a small 6-inch cast. The more wax used, the larger the casts.

The wax may be melted on site using a propane burner. The wax will melt at about 212 F , but makes a better cast at 230 to 250 F. Caution: The wax may combust at temperatures over 300 F. Also, higher temperatures may produce steam in damp soils, causing the cast to be porous and weak. Use a 2 quart or larger pan to melt the wax. Best results are obtained when using a pot that distributes the heat evenly and has a lip for pouring.

Caution should be taken during the following steps. Latex gloves with a coat of talcum powder will prevent ants from crawling up your hands.

Locate a mound and flake off a 1- to 2-inch area at the top of the mound exposing at least five tunnels. Pour the molten wax slowly down the tunnels until the tunnels are filled or you have the size cast you desire. Allow the wax to cool to a solid. Carefully dig up the cast, leaving a layer of soil around the cast for protection from damage. Place the cast and soil surrounding it in a bucket of warm soapy water. Allow the cast to soak for at least one hour and gently wash the cast with warm water to remove the soil from between the tunnels. The cast temperature should be kept above 80 , cooler temperatures will make the cast more brittle and increase the chance of damage.

Method for Lead Casts

Lead used in constructing a cast can be purchased at most hardware stores or salvage yards, or used lead wheel weights can be purchased from a local tire dealer. The purity of the lead is not extremely important, since impurities such as steel, and dirt will separate when the lead is melted. A minimum of 10 pounds of lead is needed to make a small mound about 6 inches in diameter. Larger quantities can be used for larger casts.

The lead can be melted on site using a propane burner. Extreme caution should be used when melting lead since temperatures of over 650 F are required. A cast iron pot with a lid can be used to melt the lead. The lid helps hold in the heat. Fifteen minutes or more may be required before any lead is observed melting. After the lead begins to melt; additional lead can be added. Caution: Do not add wet lead to molten lead. This will cause violent popping and splattering of the molten lead. Impurities such as dirt or steel will float to the surface and can easily be skimmed off.

Caution should be used in completing the following steps. Latex gloves with a coat of talcum powder will help prevent ants from crawling up your arms.

Locate a mound and remove a 1- to 2-inch area from the top of the mound, exposing a minimum of five tunnels. Carefully pour the molten lead down the tunnels until the tunnels are filled or you have the size cast you desire. A smaller metal pot with a pouring lip is helpful in pouring, due to the weight of large amounts of lead. If using a smaller pot or ladle to dip the lead, preheat the pot or ladle to avoid the lead sticking to the container. Pour molten lead in a steady stream as fast as you can without causing it to overflow. Allow the cast to cool enough to be handled safely and then dig up the cast and place it in a bucket of soapy water to loosen the soil and drown any remaining ants. Allow the cast to soak at least 15 minutes and then wash the cast with a high pressure washer to remove any excess soil. If grass and other foreign materials are lodged in a cast, they may normally be removed with needle-nosed pliers.