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Do Lightning Rods Protect?

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Do Lightning Rods Protect?

Lightning destroys millions of dollars worth of property every year, kills thousands of head of live stock and hundreds of people. Practically all of this loss is sustained by farmers, as city property, being protected by the proximity of power, light and telephone wires, is nearly immune from damage by lightning. Lightning is not confined to certain localities but may strike anywhere. The only safe way of preventing damage by lightning is to protect each building by a properly installed system of lightning rods.

RODDED BUILDINGS ARE BETTER RISKS. Insurance companies are vitally interested in any device that will prevent loss by fire. Many companies have taken data over a period of years to determine the value of lightning rods. In localities where about 50% of the risks were rodded, it was found that where one rodded building was struck by lightning eighteen unrodded buildings were destroyed or badly damaged. It was also noted that the rodded buildings that were struck were not "fired" and very little damage was done.

INSURANCE CHEAPER FOR RODDED BUILDINGS. Many farmers' mutual insurance companies accept only rodded risks. They find their loss so small that they are required to make only a small assessment on their risks. This small assessment has compelled competitors, insuring both rodded and unrodded risks, to name a lower rate on the rodded risks. For example, the Patrons Mutual of Michigan, which insures both rodded and unrodded risks of only 60% as much per $1000 as the assessment on their unrodded risks. This saving on insurance represents a good annual dividend on a lightning rod system. The security of the life of the family, if the buildings are protected, is another benefit which can not be measured by money.

WHAT IS LIGHTNING? Scientists tell us that each tiny parti cle of vapor that passes from the earth to the clouds carries with it a small amount of electrical energy. When these vapor particles condense to form rain drops, the electrical energy accumulates and the cloud becomes charged with positive electricity.

The presence of this postive charge induces a negative charge to accumulate on the earth's surface directly below. The intervening air acts as an insulator to prevent the two charges from combining. When sufficiently heavy charges have accumulated, the air is ruptured and the charges unite. The result is called lightning. Substances as metal, bodies of animals, water, wood and masonry are better conductors of electricity than air. As lightning always chooses the easiest route, it will select these substances for part of it's path and objects of these materials are said to be "struck by lightning". The resistance offered by most of these materials develops considerable heat. Wood is often heated to a temperature sufficient to ignite it ,and the building burns as a result.

LIGHTNING RODS PREVENT LIGHTNING. They allow for the gradual dissipation of electrical energy from the points at the ridge of a building and prevent lightning strokes. The charge of negative electricity is not permitted to accumulate in the earth and hence there is nothing to attract the positive charge from the sky. That is why insurance companies prefer to insure rodded buildings.

LIGHTNING RODS ARE WORTHLESS UNLESS PROPERLY INSTALLED. Good materials and a knowledge of the principles involved will secure good results. Be sure to have the work done under the supervision of an honest, experienced workman.

Ground Connections should be put down to permanent moisture in a hole about 10 feet deep and filled with earth. If this is impossible because of rock near the surface, the cable may be fastened to a copper plate and the plate buried as deeply as possible. It is well in this case to surround the plate with a bed of charcoal as this tends to retain moisture and provide a moist ground connection.

A shallow ground or loose cable connection makes many lightning rods worthless. These defects are hard to detect except while the work is being done. The hole should not be filled until a good connection is certain.

All cables should be connected in a continuous circuit. A cable attached to the ridge will connect all points along the ridge to a ground at either end. The number of cables that should be grounded depends on the shape of the building. An oblong building requires at least two; an L or T shaped building three; and a U shaped building four. The cable is fastened to the building by metal staples or clips. All metal parts of the building such as gutters, downspouts, water and gas pipes, hay carrier track, etc., should be connected to

the cables or grounded at two points. In making all connections avoid sharp turns so as to prevent side flashes. Copper, aluminum or heavily galvanized iron cable of 3, 2½ or 5 ounce to the foot, respectively, may be used. Unless well galvanized, iron should not be used because it rusts.

Points should be placed near each end of the building, at each cupola or chimney and at intervals along the ridge not greater than 20 feet. Each point should extend from three to five feet above the ridge of the roof with its base firmly attached to the cable. The shape of the point is not important providing its tips are sharp.

PROTECT THE LIVESTOCK. As a storm approaches live stock start for shelter and huddle along the first fence they reach. Wire fences are frequently struck by lightning which may be carried for a considerable distance on one of the wires. Animal bodies near the fence offer an easy path to the ground and an entire herd may be killed by side flashes from the wire fence. Ground connections of No. 9 wire placed at every twenty rods along the fence prevent side flashes and injury to live stock near the fence. The ground wire should extend at last four feet below the surface of the ground and be firmly fastened to each fence wire.

LIGHTNING RODS ARE DURABLE. When made of good material they furnish protection for many years and require but little repair. The system should be inspected every spring to see that no loose connections or other defects have developed. With this attention the owner can rest assured that his family, livestock and buildings are immune from injury by lightning. Do not trust to luck. Your local dealer and banker stand ready to advise and assist you.