

Date: 1/17/12

Re: Evidence of notch piling failure caused by Katrina storm surge

The purpose of this report is to bring forth vital information which will substantiate the need and merits of incorporating the security boot into structures that are built on elevated foundations whether they be treated pilings or concrete when the fitting is reviewed by architects and structural engineers.

Hurricane Katrina struck the Mississippi Gulf Coast on August 24th, 2005. Over six years have now past since this historical storm destroyed thousands of homes either by the force of its winds or the tidal surges that exceeded 20 ft and more in some areas. Homes which represented the dreams and major investments of families that had chosen to live in the High Velocity Hurricane Zone along the Mississippi Sound.

There still remains plenty of storm damage to view in towns and communities along the Gulf Coast. A reminder to all who see it of the awesome power of Mother Nature in her greatest fury. During my time there rebuilding and installing emergency housing, I witnessed evidence left by Katrina of piling failure, more specifically with regards to the practice of notching the top of pilings in order to attach the structure being built. After seeing forest of pilings where once they secured the homes and prized possessions of the families that lived there, I was left with two questions in every case. Why and how? The why I readily knew the answer to, the how, that is to say how do we prevent this from happening again was perplexing my thought process.

This type of foundation failure is what prompted me to develop the Security Boot. I and my team searched for the perfect example of notched piling failure and there we found it. And fortunately for this review, twenty 8 inch round pressure treated poles remained intact at #52 Poindexter Dr. They are the only remnants left on this site after Katrina passed through this community leaving 80% of all residential dwellings either completely destroyed or uninhabitable without major renovation to the structure. The top of each pole tells the story of the forces that led to the demise of the structure that was the home of the family that once lived at #52 Poindexter Dr.

Fortunately for this review, (twenty) 8" round poles remain at #52 Poindexter Dr. They are the only items left on site after Katrina passed through the town leaving 80% of all residential dwellings either completely destroyed or uninhabitable. All of the 8" diameter poles are approximately 7' tall. The top of each pole tells a story of the forces that lead to the demise of the house that was once #52 Poindexter Dr.

The address 52 Poindexter Dr. is located 30.316046 deg. north latitude -89.27814 west longitude the surface elevation is -1 foot below mean sea level. The Mississippi sound is 3000' to the south and the bay of St. Louis is due west less than 3000'. This address is

located squarely in the High Velocity Hurricane Zone.

A visual inspection of the poles shows no breaking or splintering midway of the 7' length. The poles themselves obviously withstood the hurricane force winds and rising storm surge that inundated with complete devastation Past Christian. The fact that in 95% of all cases, the pilings remained intact and ready to accept a new home with the exception that the tops were either completely gone or splintered and many with their bolts still in place but pointing upwards toward the sky. Thereby rendering the foundation useless. This type of damage is the typical result of water and wave action caused from rising tidal surges beating against the structure and creating a buoyancy force the stress of which began to cause the attachment point of the structure to fail. the structure was doomed to destruction as the notched tops of the pillings began to splinter and snap off completely. And as is evidenced by the remaining bolts that the sill plate of the home itself gave way. As evidence by the bolts that were bent skyward, illustrating the amount of force that the buying c exerted against the structure as the house began to float up and away from the foundation.

Recorded information reveals storm surge levels passing over #52 Poindexter reached a height of 27.8'. Though it is obvious that the structure would have been completely submerged had it remained attached to the foundational pole system. It is also very obvious that had the pilings been installed with the Security Boot incorporated into the foundation #52 Poindexter on August 24th, 2005 would have remained in its place and in most probability been in a condition where by it could have been salvaged. That is to say that the structural integrity, as well as the main components exterior walls, floor, and roof would have remained intact. And therefore the Photos taken today would be very different. And the amount of loss both emotionally and financially would have been greatly reduced for the family of #52 Poindexter. The top of the piling's would have withstood the buoyant forces of Katrina's wave action. The steel fabrication of the Security Boot construction would have prevented notch breaking and splitting and the bolts that were used to secure the structure would have been able to resist fatiguing. Maintaining sub floor framing due to being held steadfast, sandwiched between the steel plating and the Security Boot .

We feel that the damage of this type goes beyond the financial scope of the loss. For many lose not only their homes, but also family heirlooms, pictures of their past, memories and memento's of their heritage that cannot be replaced. And in some cases loss of life, for there are those who will not abandon their homes and belongings. The Security Boot in many cases would have given those individuals that extra that was needed to keep their homes attached to its foundation and for those that left when they returned they would have had much more to come home to.

Obviously due to renewed thinking in the areas of building construction there are now in place stronger codes and stronger more resistant materials , materials much improved over the types that existed seven years ago. Which makes the Security Boot a much needed addition to the construction of any structure in these High Velocity Hurricane

areas what good would a structure built to withstand 125mph plus winds do if it can be blown off its foundation or floated away due to high water surges from these catastrophic storms?

There is no way to predict the damage outcome of an impending Hurricane. It is simple to see that houses built on any elevated piling construction be it wood or concrete will be “more secure” with the Security Boot incorporated into their design. The installation is extremely cost efficient and adds a very low additional cost including labor and materials and can be installed at various intervals during the installation of the foundation requiring no special tools for the contractor be they owners or commercial contractors.