

Recovering Boiler Systems After a Flood

Due to the recent weather disasters caused by hurricane Ike, the National Board thought it prudent to again run the following article concerning boiler systems and the damage caused by high waters. Although the information is not all-inclusive, it is hoped the items are helpful during clean-up and restoration.

Floods, whether caused by nature or by structural or mechanical failures, can produce deaths, injuries, and severe property damage. The following information is provided to assist in the recovery of boiler systems affected by flooding to help mitigate further risks to public safety and property damage:

- Safety of the personnel performing inspections and repairs is the highest priority. Because flood waters contain many hazardous chemicals and bacteria, personnel safety procedures should be developed and enforced.
- All utilities in the boiler room should be turned off until inspection and necessary repairs of the individual systems allow reactivation.
- A careful visual inspection of the entire boiler system should be made, both internally and externally, with notations of obvious problems and any special equipment or personnel needed to facilitate repairs.
- Keep in mind that some equipment may only be repaired by the original manufacturer or its licensed agents in order to maintain warranties and/or certification.
- The boiler setting or foundation should be examined closely to determine if it has been weakened or undermined. Any movement of the boiler or building will have an adverse effect on piping and other equipment connected to both the boiler and building structure.
- Waterlogged insulation will hasten external corrosion of boilers and pipes. If removal is deemed necessary, remember that asbestos is still present in many boiler rooms and requires handling by specially licensed personnel. If the insulation is left in place and the boiler is fired before thoroughly drying, steam can be generated within the insulation layers, creating the potential for explosive damage to the external lagging.
- Refractory and fire brick should be checked for deterioration or loosening.
- Feedwater and condensate return systems should be thoroughly cleaned of any mud, silt, or debris. After the boiler is put back in operation, the water quality should be checked often for contamination of any kind.
- Pressure relief devices should be checked for corrosion or any damage that would cause binding and failure to operate. Only qualified personnel should perform disassembly or repair of a pressure relief device. Some jurisdictions require this work to be performed by a company holding the National Board "VR" symbol stamp. The outlet and discharge line of the pressure-relieving device should be inspected for blockage.
- All drains and blow-off lines should be inspected to ensure there is no blockage by debris.
- Electric/electronic controls should be evaluated for replacement or repair as needed. Flame safeguard controls, ignition transformers, and safety shutoff valves on the fuel system that have the potential for causing furnace explosions should be replaced. Other fuel system components should be drained and cleaned or replaced as necessary. All work performed on the fuel system and safety devices must comply with jurisdictional requirements.
- All electric motors and wiring should be inspected closely to determine if repair or replacement is necessary. All electrical work must comply with jurisdictional requirements.
- Check to make sure air inlets are clear and chimneys or stacks are open.

These items are not intended to be all-inclusive, as boiler systems and equipment vary in design and operation. However, this list could be used as an outline in developing individual inspection and repair guidelines to fit many systems affected by flooding.