

Technical note on Salt Water Flooding – clean up and drying phase

This advisory bulletin is not a standard or regulation, and it creates no new legal obligations. The bulletin is advisory in nature, informational in content, and is intended to assist drying contractors and other professionals (e.g., loss adjusters, insurers, and surveyors) who respond to salt water flooding events.

Introduction and general advice

Salt suspended in water can quickly penetrate a variety of building materials. This is bad news because salt can be extremely corrosive, especially when concentrated, which can be exasperated during the drying process if correct procedures are not followed.

Disaster Restoration technicians should be able to undertake a **chloride test** which can be used to assess if the property has been tainted with excess 'salt' and specify the clean-up and repair required accordingly.

See http://en.wikipedia.org/wiki/Bresle_method for a measurement method of assessing if a material has been significantly affected by accumulation of salt.

The first step to reduce the risk of corrosion is to **flush the 'flooded' area with fresh water to pull out and dilute the salt, and then extract and pump away.**

Pay particular care when **electrical components** have been exposed to salt, the metal can corrode, which can lead to shorts and other problems. When a home has been flooded with salty or brackish water, the electrical systems need to be flushed with freshwater and then inspected to determine if any or all of the wiring needs to be replaced.

Like any flood damage, inappropriate drying activity can lead to mould growth and secondary damage if the damage is not handled appropriately. After flooding, each property should be thoroughly dried out in accordance with advice given in **BSi PAS 64:2013 Mitigation and recovery of water damaged buildings – code of practice.**

Classification of the loss

Sea water flooding is generally classified as a category 3 or black water flood. However, this does not immediately assume that all structural materials should be stripped-out. Each property should be assessed on its merits during the loss assessment phase, and a process of flushing with clean water as stated above, prior to a chloride test and then an assessment of the cleanliness of the property based on all the available evidence, prior to stripping-out decisions being made.

Use of moisture meters

Chlorides found in salt are conductors of electricity. Therefore high concentrations of salt can produce 'high' moisture readings when using an electrical moisture meter in 'search' or 'relative' mode. Beware of making decisions on the stripping out and repair of the building without first confirming the presence/absence of chlorides and not before a flushing out with clean, fresh water has been undertaken.

Moisture readings using the ERH scale (Equilibrium Relative Humidity) are likely to be more consistent and representative of the material in proven 'salt' contaminated samples (See BSI PAS64:2013 annex E.3. *Page 24-26.*).

If you suspect the presence of Chlorides and require a definitive site based sample analysis please call the **National Flood School on 01252 821185** and we can advise on the most appropriate technique for your situation.

Garden and plant damage

Chloride in salt water can get taken up into plants and carried along with the transpiration stream. Chlorides can then accumulate in volume at the edges of leaves and tips of twigs, resulting in edge and tip burn on leaves and dead growing tips on twigs.

The longer the water stands around the roots, the more desiccation and the worse the damage is likely to be. **The salt can be rinsed out of the soil with repeated irrigation with fresh water. This is best done immediately after the flood recedes, but should be done as soon as possible.**

The most recent flooding has taken place after most plants had gone dormant for winter. This should mean less damage than if plants were actively growing although it may take until Spring before the true extent is realised.

If the plant does survive, don't over-prune. The plant will need all the leaves it can grow to produce food to recover from the damage. Wait until Spring before deciding to prune/replace.

Lawn grasses are fairly salt tolerant and may survive with little damage. Rinse mud and debris off the lawn and irrigate to flush the soil.

If soil replacement is required, do not fertilise the replacement soil as fertilisers contain salts. Use a high leaf-content soil/additive.

Contents items

If the item can be wet cleaned, then it is likely to be salvageable. Cleaning activity needs to happen **before** the item is 'dried' as the accumulation of salt deposits can cause staining and tide marks when water is removed without the salt being removed at the same time.

As detailed above, pay particular attention to assessment of electrical items as chloride can cause failure or promote corrosion which in turn may cause electrical malfunction which may increase the risk of shock/fire.

For further advice on any aspect of this note, please contact the National Flood School on 0044 (0) 1252 821185 or via email information@nationalfloodschool.co.uk