

## GUIDELINES

# Remedial Measures for Plumbing Systems after COVID-19 and other infections


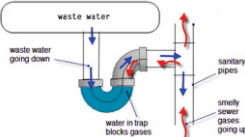

Due to the pandemic created by COVID-19 (Corona virus), many public places including restaurants, clubs, sports facilities, malls, offices etc. have been closed initially for 21 days which may be extended depending upon the prevailing situation.

When these facilities are re-opened, a lot of damage may have taken place to the plumbing system of these facilities. It is critical that agencies involved in maintaining these plumbing systems are made aware of these potential problems and the remedies.

Damage to plumbing can create different types of health problems.



Indian Plumbing Association (IPA) presents a white paper to help service providers and the general public to resolve these issues.

S. No.	PROBLEM	SOLUTION
01	<p><b>Drying of water in floor traps:</b></p> <p>In India, the wash basin drain pipe is connected to the floor trap in the bathroom. When the bathroom is not used for a long time, the water in the trap evaporates. The water in a trap is called a 'trap seal' and is effective in preventing the entry of foul gases in the waste line from entering the bathroom. When the water in the trap has evaporated, foul gases, bacteria, viruses will gain entry into the bathroom.</p> <p><b><i>This phenomenon of a dry trap can create conditions for a SARS-like viral outbreak</i></b></p>   <p style="text-align: center;">Floor trap</p>	<ul style="list-style-type: none"> <li>• If some access to the toilet block / bathroom is available, pour a little water in the floor drain OR if the wash basin outlet is connected to the floor drain, then opening the pillar tap (wash basin tap) for about 10 seconds is an alternate way and will also ensure that the floor trap always remains filled with water.</li> <li>OR</li> <li>• Pour one table spoon of edible oil in the trap. The oil will form a film on the surface of the water in the trap (as oil is lighter than water) and this will slow down the evaporation of water from the trap.</li> </ul>
02	<p><b>Formation of bio-film and sedimentation in supply pipes</b></p> <p>Stagnant water in water supply lines can generate a bio film in the pipe lines. Water supply pipe lines can also get blocked due to sedimentation that will occur when no water is moving through the pipeline for long periods</p> 	<p><b>Explanation:</b> A biofilm is a collective of one or more types of microorganisms (bacteria, fungi and protists) that can grow on pipe surfaces when the water is stagnant. A biofilm will contaminate the water supply and create a health hazard.</p> <ul style="list-style-type: none"> <li>• Shut the main valves and drain the pipe lines if possible.</li> <li>• When the plumbing system must be re-started for use, open the valves and flush the pipe in totality for minimum 15 minutes with clean fresh water.</li> </ul>

S. No.	PROBLEM	SOLUTION
03	<p><b>Damage and Deterioration in pipe quality due to stagnant water</b></p> <p>Water supply pipes will get damaged due to non-use for long periods. The stagnant water may be unfiltered water and the pipe will deteriorate in quality and life of the pipe is greatly reduced.</p>	<p><b>Before closure:</b></p> <ul style="list-style-type: none"> <li>• flush the complete piping system with clean potable water</li> <li>• fill the pipe with water/chlorine solution of 50 parts per million and stand for 24 hours</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• fill the pipe with water/chlorine solution of 200 parts per million and stand for 3 hours</li> <li>• then flush the pipe with clean water</li> </ul>
04	<p><b>Operation of Sewage Treatment Plants</b></p> <p>Problems may be caused to STPs (Sewage Treatment Plant) due to non-maintenance of STP plants in case of long closures</p>	<p>Different types of sewage treatment technologies are being used in our country and there are be specific solutions for each technology.</p> <ul style="list-style-type: none"> <li>• Re-commissioning of the plant must be through the STP vendor or a specialised agency</li> <li>• For an aerobic STP, the blowers which supply air to the aeration tank should be kept working and this will supply air to the collection tank to prevent it from becoming septic.</li> <li>• The STP plant may take 10 to 15 days (sometimes more) to stabilize</li> <li>• All pumps, blowers, oil levels, air diffusers, filter media to be checked by the vendor</li> <li>• In case of MBR (Membrane Bio Reactor) plants, membranes shall be cleaned properly as per manufacturer's guidelines before re-commissioning</li> </ul>
05	<p><b>For Water Supply Agencies</b></p> <p>It is strongly recommended to supply water in supply pipes with 1 ppm residual chlorine dosing. As per ISO 7393, this chemical treatment decomposes the virus in water.</p>	
06	<p><b>For Healthcare Professionals:</b></p> <p>Janitor Sink disinfection using hot air is recommended to inactivate SARS-CoV-2 virus.</p>	

