

# CHAPTER 6

## WATER SUPPLY AND DISTRIBUTION

### Preamble.

Chapter 6 of the UPC-AD on Water Supply and Distribution presumes that adequate infrastructure exists for the supply of water at suitable pressure for all requirements. The purpose of this preamble is to outline the criteria for determining capacities of storage tanks.

### (A) Preliminary Information.

**A.1** Estimate the quantum of water required per day for the installation. This will be based on the population in the proposed project and proposed use of the building.

**A.2** Identify possible sources that may be (but not limited to) the following to augment the shortfall in public utility water supply:

**A.2.1** Rainwater harvesting.

**A.2.2** Underground source (open well/bore/tube well).

**A.2.3** Recycled/reclaimed water from sewage treatment works.

**A.2.4** Desalinated sea water, or;

**A.2.5** A combination of the above.

### (B) Water Treatment.

**B.1** An analysis of the available water is essential to decide the treatment process to render the water adequate for consumption. The treatment process would depend on the quality of water and the purpose for which it is being treated. Appropriate standards referenced in Chapter 14 or equivalent International Standard(s) approved by the Authority Having Jurisdiction shall be adhered to, for treating the water to a desired quality. Additional treatment may be required in specific cases such as laboratories, pharmaceutical, industrial, and health care.

### (C) Water Storage Tanks.

**C.1** Since continuous availability of water at adequate pressure cannot be ensured, it is essential to have storage facilities. Where the distribution system proposed is by gravity from an elevated tank, the combined capacity of the low level and high level tanks shall be adequate for the duration of anticipated disruption in supply. The tank partitions shall be based on structural considerations, different qualities of water to be stored, and water requirements for fire fighting. Storage tank compartments containing potable and non-potable water shall have adequate sanitary separation. Water storage tanks shall be

constructed of impervious materials, protected against contamination and provided with locked, watertight covers. Any overflow or ventilation openings shall be down-facing and provided with a corrosion resistant screening of not less than No. 24 mesh to prevent the entry of insects and vermin. Water storage tanks shall not have direct connections to sewers.

**C.2** Unless permitted by the Authority Having Jurisdiction, low level tanks shall not be located below ground to avoid contamination by surface water or any other foreign materials. Where tanks are located below ground, the following minimum precautions shall be taken:

**C.2.1** All inspection covers shall be adequately raised above the surrounding ground level.

**C.2.2** Submersible pump(s) shall be installed in suitable sump(s) at the floor of the tank for draining the contents of the tank for cleaning.

**C.2.3** Adequate number of ventilating pipes with insect screens shall be provided and terminated at a suitable location.

### Part I

### Water Supply and Distribution Systems.

#### 601.0 Hot and Cold Water Required.

**601.1** Except where not deemed necessary for safety or sanitation by the Authority Having Jurisdiction, each plumbing fixture shall be provided with an adequate supply of potable running water, piped thereto in an approved manner, so arranged as to flush and keep it in a clean and sanitary condition without danger of backflow or cross-connection.

Water closets and urinals shall be flushed by means of an approved flush tank or flushometer valve.

**Exception:** Listed fixtures that do not require water for their operation and are not connected to the water supply.

In occupancies where plumbing fixtures are installed for private use, hot water shall be required for bathing, washing, laundry, cooking purposes, dishwashing or maintenance. In occupancies where plumbing fixtures are installed for public use, hot water shall be required for bathing and washing purposes. This requirement shall not supersede the requirements for individual temperature control