

## DILUTION OF LIQUID TOILET SOAP

### 1. GENERAL

1.01 The 15 per cent. concentration of Bell System liquid soap should be used for all valves and dispensers delivering the soap in liquid form. A concentration of approximately 7 per cent. should be used for valves and dispensers delivering the soap in lather form.

1.02 Bell System liquid soap is available in 15 and 40 per cent. concentrations and in general the 40 per cent. grade should be purchased for dilution with water on the premises for all excepting the smaller buildings having a monthly usage of one gallon or less. The 15 per cent. grade is used as received for all equipment delivering the soap to the user in liquid form.

1.03 Since soap is susceptible to becoming rancid under some conditions, such as contamination with older soap or other substances and being stored for long periods where it is warm, stocks should ordinarily be limited to not more than one month's supply.

1.04 Tap water is ordinarily satisfactory for diluting liquid soap but it often produces a cloudiness when mixed with the soap which is caused by certain chemicals present in the water commonly known as hardness. The flocculent particles causing the cloudiness will settle to the bottom of the container on standing and all diluted soap which is not clear immediately following dilution should not be introduced into dispensers or supply lines until the cloudy particles have settled out. The remaining supernatant clear soap solution is the only portion to be used in dispensing equipment.

1.05 The container in which the liquid soap is to be settled should have a spigot located about one inch from the bottom for each foot of depth so that the supernatant clear diluted soap may be drawn off without disturbing the settled sediment. If the container is of such size as not to be easily lifted for emptying out the dregs, it should have another outlet at the lowest point for withdrawal of the portion to be discarded.

### 2. EQUIPMENT AND MATERIALS

2.01 Drum, barrel, keg or other suitable container.  
Stirring paddle.  
Water.

### 3. PROCEDURE

3.01 To prepare the 40 per cent. soap for use in liquid dispensing units mix it with two parts of tap water. A convenient manner of measuring the water is to fill the container from which the soap was poured twice with water. Stir, to thoroughly mix the water and soap and permit to stand without further agitation for three to six days or longer if necessary for the upper portion of the liquid to become clear. Soap may then be withdrawn through the spigot located some inches from the bottom of the settling container for use in dispensers or tanks or introduced directly into soap supply lines. Do not stir or agitate the mixture of soap after it has settled. Aside from the hardness chemicals which separate and settle out when the soap is initially mixed with water no further separation takes place thus any further stirring of the settled soap is superfluous. When all of the clear soap has been withdrawn discard the remaining soap containing the precipitated particles and thoroughly clean the container as described in paragraph 4.01.

3.02 To prepare the 40 per cent. soap for use in lather dispensing units mix it with four parts of water and stir, then permit it to stand as described in paragraph 3.01.

3.03 To prepare the 15 per cent. soap for use in lather dispensing units mix it with equal parts of water, then stir and permit it to stand as described in paragraph 3.01.

3.04 There is no need for settling of the 15 per cent. soap which is to be placed in dispensers or tanks without dilution.

### 4. CARE OF SETTLING CONTAINERS

4.01 It is important that containers used for settling liquid soap and water mixtures be thoroughly cleaned following each use to avoid possibility of contaminating succeeding batches. This is done by scrubbing the interiors with plain hot water using a toilet bowl brush that is kept exclusively for this purpose followed by a thorough flushing with hot water. The container should be free from foreign odor after cleaning.