National Plasterers Council
Technical Bulletin #1
Testing Fill Water

I. Introduction:

A. It has been a long held recommendation in the swimming pool industry to test the tap or fill water of a swimming pool (regardless of the interior finish) prior to filling a new pool. Now the National Plasterers Council is stressing the need to test the fill water on ALL new pools and ALL pools that have been drained for remodeling, renovation or simple repair and then refilled.

II. Summary:

A. Recently, many pools of the United States have undergone significant changes in the potable water delivered from local municipalities to the homes and businesses in their water district. Some of the changes have been brought about by drought conditions and the need to find alternative water sources. Population growth in certain areas has also created the need for alternative sources of new and often waters with a different chemical make-up than existing sources.

B. Whatever the reason, the need to test fill water must no longer be an option or a recommendation but a requirement or mandate to prevent interior finish issues whether a new pool, remodeled pool or supply a pool that is being drained due to the high mineral composition of older pool water.

C. There are a variety of problems that may arise from these fill water factors. These factors are as follows:

1. **Tap or fill water that is potentially aggressive due to low PH, low calcium hardness or low carbonate or total alkalinity.**
2. **Tap or fill water that has high PH, high calcium hardness or high total alkalinity contents.**
3. **Some fill waters may have dissolved metals in them. The most common are copper and iron, and sometimes manganese.**

D. Low levels of calcium hardness, total alkalinity and low PH can lead to etching of surfaces, dissolution of grout and attaches to the pool equipment. These problems can be visible in the pool as surface discolorations issues, colored water and deteriorated metals in pumps, heaters, valves and other metal compounds.

E. High calcium levels, high total alkalinity and high PH may lead to such problems as scaled pool surfaces, staining discoloration, cloudy water and equipment issues such as plugged filters and heaters, along with poor circulation.

F. Dissolved metals in tap water can lead to colored pool water and staining discoloration of surfaces and grouts.

G. The best method to prevent problems from these two factors is to obtain good commercially available test kits and test the tap water for PH, total alkalinity and calcium hardness.

H. Specialty kits are also available to test for common metals. Anyone doing start-ups of new pools or newly remodeled pools should purchase one of the test kits that are capable of testing the fill water for these three factors. These include:

1. **Plasterers**
2. **Builders**
3. **Remodelers**
4. **Service companies**

I. For those who do minor pool repairs where draining a pool is required (regardless of age) should also always test the water prior to fill day. If you have a consumer(s) who insists on starting up their pool then provide them a copy of this bulletin or your own generated bulletin advising them of this requirement.

III. Conclusions:

A. Preventing pool interior finish problems and other swimming pool issues are often best accomplished before the fact, not after a problem has developed. Through the purchase of good commercially available test kits and establishing a regimen of pre-fill by testing, many problems can be averted.

B. In February 2008, the NPC released its Swimming Pool Start-Up Procedures which can be obtained from the NPC website at www.npconline.org. This stresses the requirement to test fill water, record the results and then to act upon those results regardless of the type of surface. Even if you elect to develop your unique start-up procedure, make fill or tap water testing a mandate at every start-up.