Flame Treating of Plastic Substrates

The plastic to be treated should be clean and free of dirt and oil prior to treatment. For most effective flame treating, the tip of the outer blue envelope of flame should just touch the surface of the material being treated. (The yellow and red inner cones of the flame contain products of incomplete combustion and do not treat as effectively as the outer tip.)

Most processors use burners designed to provide a continuous “ribbon of flame,” either straight or curved, depending upon the shape of the object to be treated. This does not preclude the use of a series of small burners to accomplish the same result.

Time of exposure to the treating flame may be very short. In many cases, exposures to the flame of one second are adequate if all other factors are correct. Flame treating operations that overexpose the plastic tend to deform or soften it, which can induce problems; i.e., flame treating is NOT heat treating.

After treating, do not touch the surface before applying the decal or sheeting. To check for proper treatment, a “water wetting” test can be performed by pouring water on the treated surface. If the water “beads up” into droplets, the surface is not adequately treated. If the surface has been properly treated, the water should “wet” the surface with a film of water.