

Harper Corporation of America

Position Statement: Cleaning of Sleeved Rolls

With the advent of quick change anilox rolls for sleeve presses, Harper Corporations Research and Development Division has documented special precautions necessary to maintain the integrity of the ceramic, the integrity of the sleeve base, as well as the laser engraved cell structure.

Because most sleeves have an expandable inner layer allowing them to fit on a steel mandrel in the press, it is necessary to follow a stringent criterion, when cleaning these anilox rolls.

It is our stance that these rolls should not be submersed in any kind of caustic solution, ultrasonic tank, heated tank or any kind of mechanical apparatus of this nature. Due to the physics of thermal expansion of sleeves, a sealed inner layer of the sleeve and bonded end rings on some sleeves, the adverse effects from these types of cleaning can be detrimental to the sleeve and in some cases, cause damage to the sleeve.

Harper Corporation recommends manual cleaning with Ceramclean 11 or a cleaner with similar properties. Baking soda/bead-blasting equipment is unlikely to damage these types of rolls as well.

Several things should be taken into consideration when cleaning the anilox roll. EPA and OSHA issues must be addressed. Second, Material Safety and Data sheets should be reviewed. Third, before using any chemical cleaner, you should consult with your anilox supplier and your ink supplier to determine if these chemicals can have a negative reaction with the ceramic anilox roll or the ink's performance. Fourth, ceramics are porous. Acidic or alkaline chemicals migrate through the ceramic and can attack the ceramics bond to the metal base. When the ceramic is chipped, the chemicals can migrate to the metal base quicker causing the ceramic to blister or delaminate.

It is Harper Corporation's stance that companies first and foremost want to protect the health of their employees. Normal health and safety precautions require the use of safety glasses and rubber gloves when using a chemical cleaner.

Precautions should always be taken into consideration when choosing a specific cleaning solution. More times than not, a roll is damaged because of the pH of the chemical solution. The normal pH of water based inks is between 8.5 and 9.4. When cleaning water based inks or solvent based inks, the pH of the chemical cleaner should never be below 4 and never be above 11. Designed resins in inks are dissolved between 8.5 and 9.5 pH. Although extremely effective, anilox cleaner's outside this pH range can damage ceramics and engravings, if exposure is prolonged.

To summarize, Harper Corporation has developed stringent criteria involving chemical cleaners. There are many variables associated with the use of chemical cleaning. Successful chemical cleaning should be considered a science rather than an easier maintenance procedure. Work closely with your suppliers in this area. We have developed our own chemical cleaner to give us as well as the customer the satisfaction of knowing what they are using is safe.

Should you have any questions or need further information, please do not hesitate to call Harper's Technical Services at (800) 438-3111.