TECHNICAL TUESDAYS

TOPIC: Colour Soiling In Textile Printing

REF: TT/ AUG 2016/ WK 3

Definition of textile printing:

Textile printing can be defined as the localized incorporation of required colours on the textile fabric by means of different application techniques. A number of desired colour ways can be produced per design as per the requirement and during the process of doing so there exists many common points of importance that have to be over looked to ensure an effective and reproducible print. One of the major interest area in multi-colour rotary printing is the effect of colour soiling during the continuous process. A brief about colour soiling and its effects, along with some of the common terminologies used in textile printing operations are described below.

Colour soiling in printing operations:

Colour soiling is a term associated with multi-colour printing machines which defines as the uncontrolled "migration" of dye from the printing trough on to other printing paste containers. This results with the affected dye to soon reach such a concentration that it soils other printing pastes, causing it to change the shade of the printed fabric, which, at high fabric speeds, can easily reduce the value of large quantities of fabric.

Colour soiling can occur in multi-colour roller printing when the rollers of the second, third and subsequent Printing rotations pick up small quantities of moist printing paste on areas which have not been engraved but have already been printed upon by preceding rollers. This paste migrates onto the dye paste via the dye paste applicator rollers.

Remedial measures that can be taken to prevent colour soiling:
a) Fixing a counter doctor
b) Attaching a water roller in sequence
c) Adding chemicals in the dye paste which dissolve the dyestuff drawn into the trough, but not the base dye that is contained in it

In addition the principle of roller printing should also apply: "The smallest dye (in terms of lightness and cover) should be in the first printing roller."

Associated terminology and tests:

Colour soiling test - Methylene blue method.

Colour specks -Specky print pastes.

Colour splashes - Colour splashes due to the rapid lifting of a printing screen doctored with excessive printing Paste. This results in screen or fabric sticking and the local splashing of printing paste on pulling loose mechanism.

Colour wedge -In flat-screen or rotary screen printing, a wedge of print paste is built up by the action of the squeegee (Squeegee contact angle). The squeegee pressure is essential in the control of the push through of the colour wedge.

Colour yield - Quantity of dye fixed on the textile substrate by percentage of weight of the quantity of dye used.

Combi-squeegee – Consists of a combination of a magnetic pressure-application doctor roller and a print paste blade similar to a doctor knife, where the blade is attached to the print paste feed pipe. The combi-squeegee combines the advantages of both doctor types: effective nip and deep penetration.

Cone mill – Cone mill is a dye kitchen device used for mixing mill printing thickeners and prepared printing pastes.

Copying lamp – Copying lamps are exposure units for the production of printing screens. Various light sources such as xenon, mercury vapour, halogen and fluorescent lamps can be used.

Wishing you a great week ahead!