

IGT Testing Systems

Research, development and production of testing equipment for the printing and allied industries

Application Story of IGT Hydroscope

Color (Guangzhou) Ink Co., Ltd. is a local ink company in China, focusing on product quality as its core competitiveness, insisting on scientific research and development, data management in production, and constantly exploring advanced equipment from international markets to assist in producing high quality inks.

With regard to the problem of unpredictable ink/water balance in printing ink, Mr. Ma (managing director) of Color (Guangzhou) Ink Co., Ltd. confirmed the purchase of the IGT Hydroscope without much hesitation.

“I believe that by using the IGT Hydroscope, a more detailed and scientific test data can be obtained on ink emulsification performance” – Mr. Ma said

During the printing process, emulsification between the ink and the fountain solution is inevitable. Excessive emulsification and difficulty in emulsification will cause printing failure. The IGT Hydroscope is a perfect laboratory tester to simulate this printing ink issue on press. The IGT Hydroscope records and quantifies the thixotropy of the ink through a torque sensor together with the degree of change (torque value). As a result, ink companies can effectively quantify the emulsification phenomenon of inks, record data in real time, and display graphs under the condition of a complete simulated printing press production.



Mr. Sander, IGT HQ Technical Manager and Mr. Teo, IGT Asia Regional Manager have both visited Color Ink (Guangzhou) Co., Ltd during the initial setup of the Hydroscope, to ensure proper transfer of relevant tests methods and also to share their experience from other users worldwide.

Color (Guangzhou) Ink Co., Ltd., have developed an in-house standard test procedure with the Hydroscope as detailed below:

1. Product Development

In the process of developing a printable ink that matches the customer's printing requirement, it is inevitable that the ink emulsification test is involved.

Saturation point of emulsification

The ink is evenly dispersed by the ink roller and the ink film is evenly dispersed. In the process of adding the fountain solution, emulsification occurs until the ink no longer absorbs the fountain solution, and visible water droplets appear on the surface of the ink film. Record the amount of fountain solution used at this time, which is the amount of fountain solution used at the emulsified saturation point of the ink



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Ink recovery

After the ink reaches the emulsification saturation point, stop adding the fountain solution, and the ink roller keeps running. Observe whether the torque value change caused by the thixotropy of the ink can be restored to the ideal state. You can compare values or curves.

2. Routine Quality Inspection

In order to avoid uncertainty in production, new ink formula will be tested by Hydroscope in laboratory. Each batch of ink tested to ensure the amount of fountain solution used for the ink emulsification saturation point is lower than our target value before it can be shipped to customers. By using IGT Hydroscope, we can quantify the ink emulsification data and effectively control the ink to maintain a stable ink-water balance during the printing process

3. Incoming Material inspection

In the production of ink, different types of raw materials are used, all the incoming materials will be tested by IGT Hydroscope to ensure stability of each material. In the past this can only be done manually based on experience. Using IGT Hydroscope can clearly record the influence of each material on the emulsification performance of the ink, and after quantification, the technical engineer will improve efficiency, reduce waste and reduce risk based on reliable data while ensuring ink stability.

With the increasing level of printing technology, there are higher requirements for the quality of materials. By using IGT Hydroscope, we have improved the efficiency of ink research and development, and effectively ensured the quality and stability of the ink, providing better inks for the printing industry

