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Image Solutions (UK) Ltd.
expertise in scientific imaging

Image Solutions
Digital Camera Technology
Key to Coating Quality

Diagnostic Instruments' SPOT RT3 digital camera, supplied by Preston-based Image Solutions (UK) Ltd. is ensuring that one of Europe's leading industrial coatings manufacturer meets the high quality standards demanded by its customers.

The camera is being used by Becker Industrial Coatings at its Speke site on Merseyside in order to assure that a quality product and service is delivered. This can be done through, the accurate determination of film thickness, the use in product design and development, the making of an electronic record of panels during exposure tests and the identification of the occasional defect in a coated product from their customers. Becker is the largest coil coating supplier in Europe and the second largest in the world. Its typical coatings include polyesters, polyurethanes, PVDF and Plastisols.

The Speke site is home to four laboratories and a paint production unit that develop and supply coatings for customers in a wide range of sectors, including building, transport, domestic appliance, agricultural and telecommunications.

The SPOT RT3 is mounted on an Olympus microscope and/or copy stand to image products that are being inspected. The cross sectioning of painted steel panels is used as the definitive arbitrator of film thickness for each individual coating applied. This is particularly important when determining the cost per square metre for the coating. The orientation of effect pigments is important for obtaining an attractive aspect. Beckers have used the microscope/camera combination to successfully develop coatings in which the pigment particles are engineered to lie in the "correct" direction to achieve the desired aspect. Occasionally defects need in-depth investigation, followed by careful presentation, using the high quality images from the Spot RT3 digital camera. Once defects have been examined and identified, it is possible to investigate the 'hows' and 'whys' of their occurrence and to ensure that they do not happen again. The high quality images can easily be shared electronically via E-mails with customers allowing rapid effective response to requests for images all around the globe.

Image Solution's SPOT RT3 digital camera boasts a range of class leading performance features, including a 20-fold reduction in dark current, 25% lower read noise, high sensitivity and a greater dynamic range acquisition speed than its competitors.

Becker also uses SPOT software supplied by Image Solutions. This seamlessly integrates the camera and microscope and optimises their use. Capturing images is as easy as selecting a microscope technique, viewing the image in real time, and then taking a vibrant high-resolution colour image. Once captured, technicians at Becker can make any enhancements to the image that may be needed, while circling, annotating and adding measurements to any of the images produced. The images and their notes are then stored in a database.

"We were one of Image Solution's first customers and we have had extremely good service over the last eight or nine years," said Alan Butchart, Instrument Coordinator with Becker's Long-Term Development (LTD) department. "They've sold us good equipment that does exactly what we want it to do." he added.

In fact, so impressed is the company with SPOT technology that the Becker are considering buying a SPOT Insight digital camera from Image Solutions to replace an existing analogue video camera specifically for photographing panels from weathering and exposure tests.

"That laboratory uses accelerated weathering techniques to carry out corrosion testing on customers' products. Part of the process involves taking images over time and sending them to the customers. The SPOT Insight will be ideal for this because it has good resolution, but at two mega pixels won't fill up our database with images," added Mr. Butchart.

The images show how a formulation can be cleverly manipulated to change the appearance and tactility of a coating.

Fig 1: Pigment not flat:- Darker, more contrast, lower gloss, less sparkly and rough to the touch.

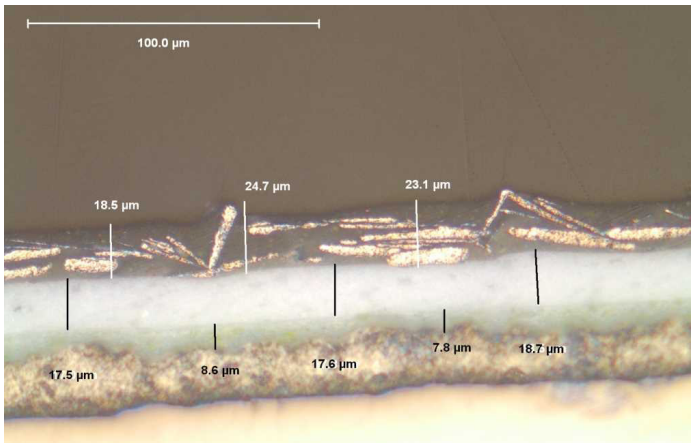

Fig 2: Pigment lying flat:- Lighter, less contrast, higher gloss, more sparkly and smooth to the touch.