Transducer aids testing adhesives on computerized rig

According to the Sangamo Division of Solatron Transducers, UK, the task of selecting an adhesive for use in attaching protective coatings to pipes used for carrying hot oil was made simpler by using their long stroke linear displacement transducers and a System 16 transducer/computer interface on the test rig. After selecting candidate adhesives on an empirical basis from available formulations, the final selection was made by comparing the adhesives under test conditions.

The rig that was devised for this test is shown schematically in Fig. 2. It comprises two hot plates, each with six test stations. A sample of the adhesive, measuring 50 × 50 × 3 mm, was applied to the hot plate at each station. A weight was then placed on top of the adhesive with a cable attached to the weight passing over a pulley and a load attached so that the weight remained attached to the adhesive in the cold. As the hot plate was heated up, the flow characteristics of the adhesive changed and the weight moved sideways under the load. The distance moved by the weight was measured by the linear displacement transducer and the information fed into an HP85 computer. A sensor measured the temperature at each station and this information was also fed into the computer.

A Sangamo System 16 transducer/computer interface was used to transfer the information from the 12 test stations to the computer. This interface can accept signals simultaneously from up to 16 transducers, automatically conditioning these signals and providing measured outputs directly to the computer via a built-in IEEE 488/RS 232 selective interface. Thus the comparative adhesive tests could be carried out unattended over comparatively long periods of time.

The selected adhesive was required for attaching to a strip fabric which was then wrapped around the pipe as a continuous coating, essentially to protect it from the effects of the environment. Thus the adhesive had to have sufficient grab to ensure that the coating went on smoothly, without any trapped air pockets, but it had to retain its adhesive properties as the pipe became hotter.

Using the computerized rig, adhesives could be compared under the same test conditions. The point at which the adhesive failed to meet the required performance could also be detected.

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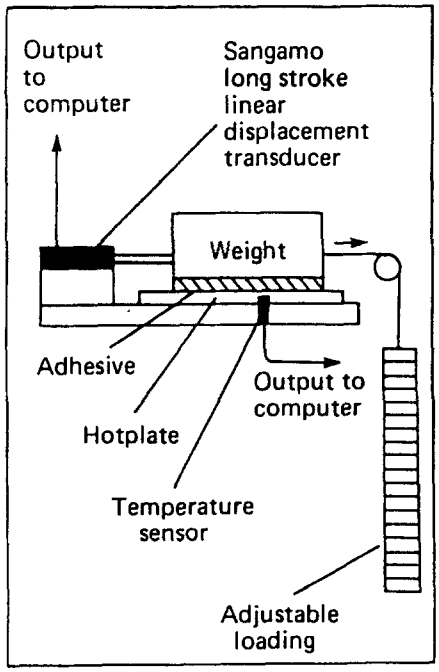

Fig. 2 Rig devised to compare the response of different adhesives to variations in temperature, other conditions remaining the same

Company increases capacity for high resin development

Initiated by increased demands for high quality, speciality resins for formulating hot-melt adhesives, sealants and pressure-sensitive adhesives, a 50% capacity expansion for Escorez 5000 resins has recently been completed at the Essochem Notre Dame de Gravenchon plant in France. The Escorez 5000 series of hydrogenated water-white resins are said to be particularly appreciated in applications where good colour characteristics and ultra-violet resistance are essential.

Following this expansion, Exxon Chemical Americas has announced plans to build a similar plant in Baton Rouge, LA, USA, which is expected to be on stream during the second half of the year. Both plants rely on technology proprietary to Exxon Chemical.

It is expected that the plant in France will be sufficient to supply present customers' needs but, should the demand escalate, the plant has the capability to effectively double its current capacity.

Esso Chemical Limited, Arundel Towers, Portland Terrace, Southampton, SO9 2GW, England.

Method of portioning chemicals may be of use for adhesives

A system said to be particularly applicable to portioning chemicals, adhesives, paints and drugs has recently been made available by Sacol Powerline Limited, Southampton, UK. Accurate portioning is achieved by means of electronically controlled hydraulic actuator delivery. By providing instant set-up of delivery by push-button control, and accuracy of portioning, the system can increase production capability and achieve savings which