Polarising Film

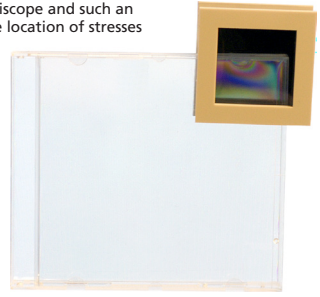
CS6 020G

IMAGINE | CREATE | LEARN™

This film produces plain polarised light by filtering out all 'wave' movement except at a single angle of orientation. If a second film is placed in front of the first, but turned through 90', the effect is to cut out all light. Under these conditions, if certain materials (e.g., clear acrylics, cast resins) are interposed between the two films, bright spectra bands of colour can be seen as a result of optical interference. These colour bands indicate stresses within the interposed material.

Applications

An arrangement of two polaroid filters is called a polariscope and such an instrument can be used, for example, used to reveal the location of stresses in polymer models of engineered components. This process is called photoelastic stress analysis. It has been used to examine stresses in things ranging from small mechanical fastenings to buildings such as medieval cathedrals. Computer modelling is now used in many contexts where previously photoelastic stress analysis was the only option for visual analysis. Nevertheless, the technique has enduring value.



Applications in education

The filters can be used in science education for standard experiments illustrating optical phenomena. (The filter material supplied is much cheaper than many standard plain polaroid filters.) The filters can also be used in design and technology to show the principle of the polariscope and to look at stresses 'locked' into some moulded plastic products. (Not all plastics reveal stresses. Generally speaking look for crystal clear hard plastics such as small moulded jewellery boxes and pens.) Crumpled cellophane and shrink wrap covering both have the potential to produce optical pyrotechnics ! If the polaroid filters are properly supported, these films can be stretched to show stresses arising.

Designed, manufactured and supplied by:

Mindsets (UK) Ltd
Unit 10, The I.O. Centre
Waltham Cross, Herts
EN9 1AS

01992 716 052
www.mindsetsonline.co.uk

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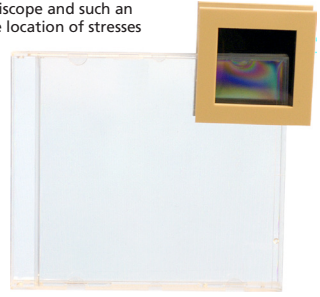

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