



Co-sponsored by The Rubber in
Engineering Group of The Institute of
Materials, Minerals and Mining

The Engineering Integrity Society



The Theory & Practice of Developing Rubber Products with Good Fatigue Life

Star Hydraulics,
Tewkesbury
6 October 2016



What Engineers Need to Know and How to Avoid the Pitfalls

The Theory & Practice of Developing Rubber Products with Good Fatigue Life

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The aim of the course is to give those who design, make and use rubber products an understanding of underlying principles about the ways the materials deform and factors that affect fatigue life. The course will explain the structure of rubbers and how the different parts of the mixture can affect the fatigue life. The effect of different types of loading such as the effect of minimum strain and the differences between uniaxial and biaxial loading will be discussed for different types of rubbers.

Fatigue of rubbers is complex but the course provides a foundation of knowledge so that improvements in fatigue life can be planned and executed. The course provides the basis of knowledge needed for further courses that will cover some specific aspects of fatigue in more detail.

The course will be led By Dave Boast FIMechE of DB Engineering. Dave has over 35 years of experience of a wide range of elastomer products in many industries in demanding applications. He has organised many events for the Rubber in Engineering Committee of The Institute of Materials, Minerals and Mining to promote the understanding and science of rubber manufacturing and products

Programme

- 9.00am Registration, Tea and Coffee
- 9.30am Introduction - Norman Thornton, EIS
- 9.35am The structure of rubber and how the different ingredients in the rubber affect the mechanical properties and fatigue life of products. Aspects and analysis of the stresses and strains in products that undergo deformation will also be discussed. Understanding material specifications and how to specify the mechanical properties.
- 11.00am Tea and Coffee
- 11.30am Understanding of stress and strain in the product, failure criteria and fatigue.
- 12.30pm Lunch
- 1.30pm Common sources of product variability in products from design, in the materials and processing of the materials and the environment the products are used in. Relating real loads to product and material testing and failure criteria.
- 3.00pm Tea and Coffee
- 3.30pm Hands-on session testing rubber to highlight the topics discussed today.
Review of key points.
- 4.30pm Closing Comments

Booking Form

	EIS Member	Non EIS Member
Delegate	£100+VAT	£125+VAT
Student/ Apprentice	£25+VAT	
	UK	Rest of the World
Personal Membership of the EIS	£25 per year	£30 per year
I enclose a cheque for £_____ made payable to the Engineering Integrity Society. Payment can also be made by BACS.		
Name:		
Company:		
Address:		
Telephone:		
Email:		
Any Special Dietary Requirements		

Please return completed forms to info@e-i-s.org.uk or send to the following address:
Engineering Integrity Society, 17 Harrier Close, Cottessmore, Rutland, LE15 7BT, UK
Telephone: +44(0)1572 811315 Email: info@e-i-s.org.uk

I do not wish to receive any further information from the EIS

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The annual subscription rates are £25 for UK residents and £30 for non-UK residents. Upon joining the Society you will also have the additional advantages of preferential attendance rates at EIS events, together with selected events held by some of the associated organisations. In addition you will have access to CDs containing archived copies of EIS presentations.

About Star Hydraulics

Star Hydraulics design and manufacture high quality Electro-hydraulic Servo Valves and ancillary equipment, which are used in a wide variety of market sectors. In addition to the supply of new servo valves and electronic equipment the company repairs and can upgrade, other makes of servo valves.

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