

BLAST CURTAINS

Auxetic Blast Protection Textiles - An EPSRC Crime Feasibility Study

A research team led by the University of Exeter is working on an innovative new project to create curtains made from a 'smart' material that could minimize the injuries inflicted by a terrorist attack. The team, led by Professor Ken Evans in conjunction with spin-out company Auxetix Ltd, hopes to use special auxetic materials to create blast curtains that could catch glass fragments and debris blown through windows by an explosion.

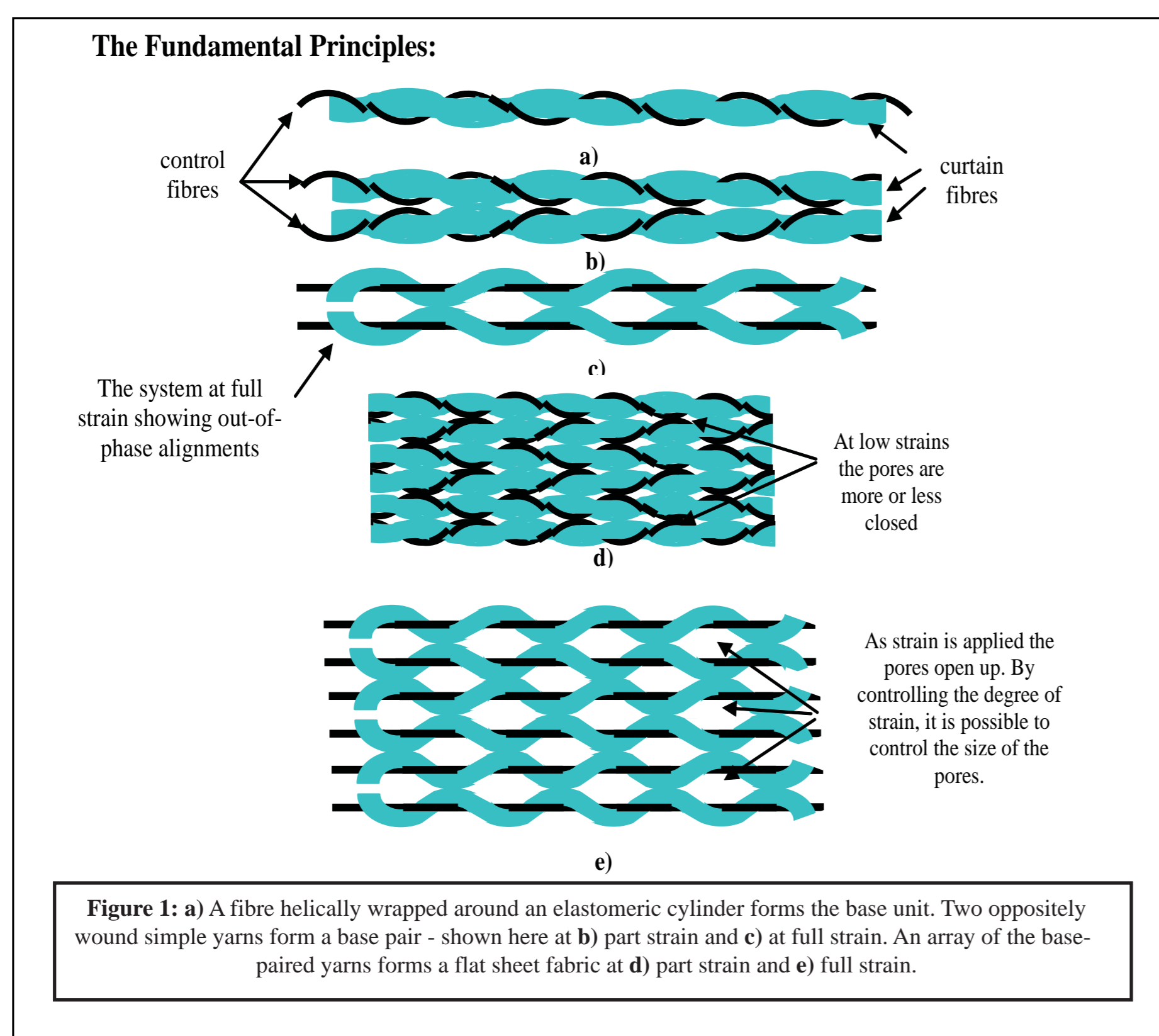
A bomb blast causes damage by generating a pressure shockwave which shatters windows in its path. The majority of those injured in an attack are injured by the flying glass that results. The fibres in conventional blast curtains stretch and tear, which stops them catching debris. However when auxetic materials stretch they show a unique property – they get fatter rather than thinner. This means that under tension a large number of pores open up across the surface of the material allowing the shock wave through leaving it intact to catch glass and other debris.



Thousands of windows were shattered by the Bishopsgate bomb, planted in London by the IRA in 1993.



The effects of blast damage can be clearly seen on these windows at a UK explosives research facility.



John Heathcoat & Co Ltd, based in Tiverton, Devon, will help develop the prototype fabric which will then be further tested by the Home Office Scientific Development Branch (HOSDB). There the material will be put into a test chamber behind glass panels and subjected to an explosive blast to test its ability to minimise the penetration of glass into the chamber.

For more information about Blast Curtains please contact Julian Wright: j.r.wright@exeter.ac.uk

Blast Curtains is funded by the

EPSRC

Engineering and Physical Sciences
Research Council