# Engineers developing bullet proof vests from cement

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Dr. Purnell is actively seeking other researchers, engineers, scientists, designers or even sculptors and artists who also have ideas for new uses for cement. Credit: Simon and Simon Photography

Engineers at the University of Leeds are working on a new type of body armour made from cement.

The new vests will combine super-strong cement with recycled carbon fibre materials to make a material tough enough to withstand most types of bullets.

The cement vest project, still at the early research stage, is being carried out the School of Civil Engineering at the University.

Dr Philip Purnell, who is leading the team, said: "By using cement

instead of alumina we are confident we can deliver a cost-effective level of protection for many people at risk. It should be good enough for people like security guards, reporters and aid workers who are worried about the odd pot shot being taken at them.

Dr. Purnell is actively seeking other researchers, engineers, scientists, designers or even sculptors and artists who also have ideas for new uses for cement. Credit: Simon and Simon Photography

"The fact is many of the armoured vests sold today are over-engineered for the threats they face. Cement based body armour would not only create a whole new market but it would also take some of the pressure off the demand for hi-spec alumina models so that people like soldiers, who really need this kit, can get it."

Currently available hi-spec body armour is constructed with alumina plates - the raw material used to make aluminium - which is heated to 1600 degrees Celsius for up to two weeks in a process called 'sintering' in order to make them ultra hard.

Enhanced combat body armour (ECBA) as supplied to UK troops uses sintered alumina plates. In the past UK and US soldiers serving in Iraq

and Afghanistan have faced shortages of ECBA as production has struggled to keep up with soaring global demand.

Cement vests are just one of a range of novel uses for the 2000 year old material that the Leeds engineers are investigating in a three year project called 'Cementing the future'. Other ideas include cement based pump-less fridges, a new type of catalytic converter, and improved bone replacements.

Source: University of Leeds (news : web)

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