Products Update

New and exciting materials are making a commercial appearance almost every day - and really do have the 'wow factor' potential for design and technology.
Disappointingly, most novel materials are difficult to source at first and prices tend to remain high for a long period. It is therefore pleasing to report that we have been able to source a number of new materials including a revolutionary wood-based product whose properties cross the traditional material boundaries.

Maplex Sheet

TR has just been appointed the UK distributor for this astonishing laserable material – first shown at the 100% Materials exhibition at Earls Court last year. Consisting of only wood fibre, it is compressed with a force equivalent to 15,000 elephants standing on a single sheet! The result is a thin inflexible material with the feel of carbon fibre or steel sheet. It is the perfect medium for general purpose modelling, lightweight constructional work or 'wood engineering'. Like a previous discovery, Polymorph, this has the potential to transform conventional ideas about designing and making things – especially when cut with a laser.

➲ Maplex Sheet
1mm (approx) x 500mm x 750mm – stock code 131-039A – £2.80

[Nb. The sheet is supplied rough sawn but oversize]

And if you use a laser cutter, have you considered using the pre-anodised sheet as a material for engraving? The laser burns away the coloured oxide film to leave the pure aluminium exposed.

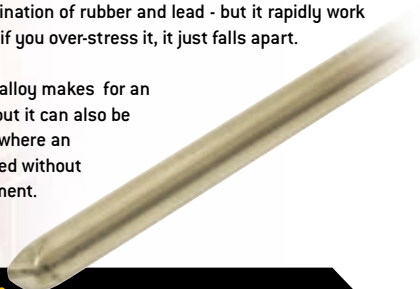
➲ 1mm anodised aluminium sheet (290mm x 290mm)

Colour	Stock Code	Price
Black	TS6 003B	£5.75
Red	TS6 003R	£5.75
Purple	TS6 003P	£5.75
Blue	TS6 003L	£5.75

Strontium Aluminium

Another materials first for TEP results from an industrial gases firm introducing TR to an aluminium alloy normally used for introducing tiny measured amounts of strontium into bulk alloy mixes. We have now sourced this material as 10mm diameter metre-length rods at roughly the same cost as normal aluminium. But don't make the mistake of confusing it with your normal stock! When you bend this material (by hand) it feels like a combination of rubber and lead - but it rapidly work hardens, so much so that if you over-stress it, it just falls apart.

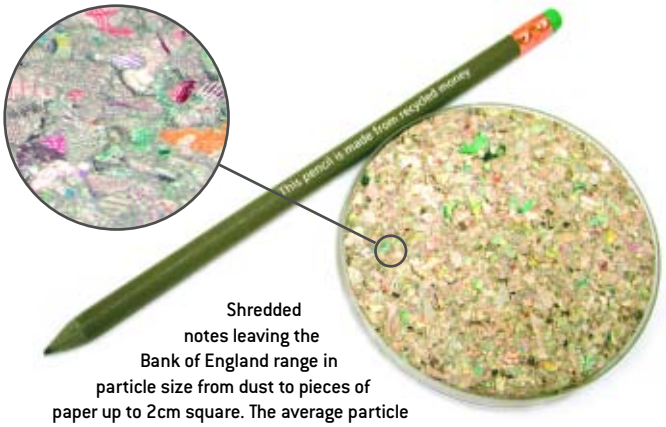
The odd behaviour of this alloy makes for an amazing demonstration, but it can also be usefully employed – e.g., where an angled rod has to be formed without huge forces or heat treatment.



➲ Strontium aluminium
(10mm diameter x 1 metre length) – stock code 131-060 – £2.80

Money, Money, Money!

Perhaps our most unusual new material is money! With the generous support of the Bank of England, we can now supply you with old money destined for scrap. Each year several hundred tons of used bank notes are shredded, but incineration and land-fill are no longer considered acceptable options. The recycling options include pot plant compost, professional craft work, and the production of small products such as pencils. The latter are made using grinding and mixing processes to produce a homogeneous material which is extruded around a pencil core.



Shredded notes leaving the Bank of England range in particle size from dust to pieces of paper up to 2cm square. The average particle size is around 3mm x 3mm which means that most of the pieces can be visually identified as money.

Schools pilot work has shown that the use of this material has high motivational impact and can inspire design and make tasks based on the very topical theme of recycling. It can be used, or example, in the context of mini-enterprise where the shredded material is encapsulated in small products – e.g., containers or personal organiser sleeves. It can also be combined with recycled paper in papier mache or re-formed paper. Other types of paper are increasingly being recycled like this to make egg boxes (the traditional use), packaging pieces (replacing expanded polystyrene) and even furniture.

By arrangement, the Bank of England shredded notes are free but a nominal packing and handling charge is added. To cover overall order processing costs, the bags are only available as part of a minimum goods order of £25 (including the shredded money at £2.00) – or separately with a special £5 order processing cost plus delivery charge. At the moment, the maximum that we can supply for each order transaction is 1kg.

➲ Shredded Money: 1kg bag – stock code 131-051 – £2.00

Fog Galore!

Many colleagues have been searching for the source of the device used to produce dry-ice type mist around small pools and fountains. It is in fact a peizo-generator capable of breaking up water into fine mist droplets. The hovering mist is immediate and astonishing – and now available at low cost. The mist machine is already being used in science as a replacement for dry ice and can be used in design and making for a number of applications. These include: special effects and climate control (e.g., humidification).

➲ Mist machine
(including low-voltage power supply unit) – stock code 211-015 – £14.80

Impossible joints in plastic!

The frustration of not being able to glue dissimilar plastics or indeed heat weld similar ones is familiar to most of us. So here is the good news: it's actually quite simple. While attempting to make permanent boxes out of the slotted construction system, TR discovered that the parts could be bonded by light spot welding with the tip of a fine soldering iron. We tried other plastics, and it worked very well. Only a few 'spots' between dissimilar plastic parts are needed to make a very strong joint. The technique calls out for a simple jigging system to align the parts and so we have on offer here a simple low-cost system using a combination of magnets and steel sections.

WARNING: this kind of spot welding will generate fumes and particulate matter and so it should only be carried out after a risk assessment where good extraction and/or filtering is available.

➲ Spot Welding Jig Set (Comprising 1 x steel sheet base plate, 2 x square bars, 4 x magnets)
Stock code 322-079 – £7.50

➲ http://www.mutr.co.uk

The NEW Teaching Resources website has a vast selection of products for all types of projects and classroom experiments. Categorised into different product sections, items can easily be found, or you can perform a simple site search. Secure online ordering and special low prices for schools.

NEW BOOKS

The range of TR Books increases with each issue of News and Views. This issue the new books include:

Presentation Techniques by Dick Powell

Despite the computer graphics revolution, drawing and rendering are still vital design skills for externalising and representing ideas. This book is a timely revision of what is widely regarded as the handbook of graphic technique.

➲ Presentation Techniques – stock code BB6 270 – £21.99

Exploding Disk Cannons by Neil Downey

Neil Downey's latest gadget book Exploding Disk Cannons completes a remarkable trilogy of publications – all of which are still in print and sought after. The three books stem from activities developed for a Saturday science and technology club which Neil has run for some years in Guildford, and for many design and technology teachers, the books have become a rich source of ideas and inspiration for pupils..

➲ Exploding Disk Cannons – stock code BB6 263 – £19.99

And, finally, Polymorph's 10th Anniversary

As it celebrates its 10th year, Polymorph has become the material of choice for those prototyping tasks that seem almost impossible to achieve by any other means. Professional designers, inventors and engineers are using this material in applications that range from bespoke Formula 1 crash helmets to musical instrument parts.

In the classroom or workshop, Polymorph has proved to be a real problem solver whether it is simple handles that contract over metal parts, special extensions to tools and appliances, 'organic' joints for other materials – or body shells for robots.

Quite recently, the biomimetics work of Rob Knight has caught the public imagination and he is now creating incredibly life-like robotic fish visitor attractions and other robots based on organic originals. His website at **www.therobotstudio.com** is well worth a visit.

Despite wild price fluctuations,
Polymorph remains available as follows:

➲ Polymorph

Quantity	Code	Price
100g	PL1 004A	£2.62
250g	PL1 004B	£6.39
500g	PL1 004	£11.35
1Kg	PL1 003	£21.25
4Kg	PL1 005	£70.84

The 2007 TR/TEP catalogue contains some great extracts and ideas for projects from previous News and Views articles as well as a wealth of supporting information on individual items. If you have not received yours please contact:

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