

Imagine ...

HIGHWOOD
ORIGINATORS OF SYNTHETIC WOOD



... a product that is truly environmentally friendly,
totally inert and infinitely recyclable.



We use proven technology, coupled with innovative modern design and production techniques, to address the challenges of producing products that have minimum impact on the world's natural resources.





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Imagine a product that is truly environmentally friendly, totally inert and infinitely recyclable.

A product that responds to the needs of forward looking architects and planners who are committed to environmentally friendly design and developments.

There's a real commercial benefit too. Research has repeatedly proven that the lifetime cost of our products is often lower than that when using real timber.

So, commercial specifiers get both an environmental saving AND a cost saving.



Addressing the environmental crisis

Environmental pressure groups recognised long ago that the world has hit a resource crisis; now all governments at the international, national and local level are taking legislative and practical action to preserve and protect the environment for generations to come. And it's critical that they do:

Here's why ...

The world's forests are in crisis. Approximately half of the Earth's original forest cover has been lost forever and, of the half that remains, only around one tenth is protected, and most of this is badly managed. Latest statistics show that an area the size of North Carolina is lost to the hardwood forests each year – and the effect is being seen in dramatic climate and other changes in the world's people and animal populations.

And, whilst much work is being done in the area of recycling, all the authorities recognise that we need to do more – particularly where non bio-degradable materials like plastics and polystyrene are concerned.



How we are helping to protect the environment



What can we do about it?

Imagine ...

A product that looks exactly like any type of wood, metal or plastic ... and is totally made of recycled material. One that requires no painting or priming and is completely maintenance free – throughout its 50+ year life.

- A product that is waterproof and UV stable to the strictest of standards.
- A product that can be manufactured to be stronger than any of the South American hardwoods, but looks exactly like them; or lighter than the lightest of the softwoods, and with a consistency of 'look' that beats both.
- A product that can be formed into almost any shape, and manufactured in any colour and finish – and one that can be nailed, screwed, glued, drilled, welded and sawn using standard woodworking tools.

Our raw materials

We use recycled polystyrene such as waste packaging for electronic goods, waste drinking cups and other similar items that are not biodegradable, and often cause major disposal headaches for local authorities.

We are reducing the depletion of the world's precious hardwood and softwood forests quite simply because our products can be made to look like any natural timber product such as oak, beech, teak and pine – and are stronger, more consistent and last longer.

Synthetic timber is the answer





Our products

All of our products generate no waste during manufacture and are completely recyclable.

They can be manufactured to any shape – the profile limited only by your imagination. And all of our products come with the final finish and are lifetime maintenance-free. However, if chosen, they can be treated with solvent free products such as paint and varnish.

Through a process of continual development we have successfully formulated a range of products that meet many of today's challenges.

This range includes a product tested and certified to achieve Class 1 Spread of Flame for use within the building sector, and products that contain biocides for use in areas demanding high protection against bacterial growth in places like hospitals, canteens and washrooms. We also produce a fungicidal product for use in areas of high humidity.

Our processes

We operate a continual assessment programme covering the way we utilise all our extrusion machinery and, importantly, the methods and materials chosen to manufacture all our product tooling. We have over many years also developed our internal systems to ensure that we reprocess materials wherever possible - even down to adapting our systems to recirculate all cooling water in a closed loop.



Building Sector



Some applications ...

- Cladding
- Flooring
- Skirting boards
- Facias and barge boards
- Flat roofs
- Doors and sills
- Fencing
- Tongue & groove boards
- Mock Tudor beams

We work with some of the major players in the building sector and provide materials that are fully functional, aesthetically pleasing, practical and offer lifetime maintenance-free options.

We recognise the commercial challenges faced by the sector to project manage and achieve value over the lifetime of the installation. We see our responsibility as delivering exactly the right specification, on time, every time – and our products do the job of providing top quality materials that will look great, not deteriorate and will last.





Some applications ...

- Shelving
- Shelf trims
- Panelling
- Ticket rails
- Display stands
- Facia panels

Our end-user clients like Marks & Spencer, Do-It-All and Somerfield tell us that their major challenge is to balance the need for the highest quality image with their business' environmental stance. That means considering real alternatives to wood and other resources. They come to us because we can provide the solution – a product that looks exactly like any type of wood, steel or aluminium, but with no negative environmental impact.

What's more, the product is technically superior, can be manufactured to any given density and can even be self-cleaning; retaining the 'as new' appearance no matter what the customer 'traffic'.



Outdoor



Some applications ...

- Decking
- Garden and leisure furniture
- Gazebos
- Fencing
- Planters
- Trellis
- Commercial outdoor dining

The phenomenal growth of the outdoor and garden market in recent years has been stimulated by the demand created by the range of TV gardening and home improvement programmes. There is also significant recognition amongst suppliers that householders want materials that have a great 'look and feel' to their outdoor products but don't want to spend their precious leisure time on maintenance and replacement tasks.

It's here that our products come into their own. Not only do they not need potentially harmful creosote, varnish or other preservatives to be used to protect and enhance them in any way, they are also longer lasting and maintenance free. They can also be manufactured with anti fungal additives to help keep them looking 'as new'.

In all cases it is almost impossible to differentiate our products from those made of natural products that deplete our environmental resources.





Some applications ...

- Door profiles
- Frames
- Sills and thresholds
- Garage doors
- Window shutters
- Window sills
- Cladding

Strength, hard wearing, durability, variety and good looking ... that's what our trade customers tell us they want when they are buying door profiles and accessories from us – and we can meet their needs.

We provide a range of options that will last a lifetime and will look good from the moment they are fitted. The fact that our products require minimum maintenance other than the occasional wash down every now and then is a major plus point. Our customers, like Thermatru, Lindman and IG, know that the integrity of the material will not let them or their end user down.



Government and Local Authorities



Some applications ...

- Doors
- Gates
- Fencing
- Sheds
- Acoustic barriers
- Motorway noise barriers
- Cladding

Our Government and Local Authority clients tell us that their main challenges are to meet increasing demands for them to bring their 'green' policies to life by using 'environmentally friendly' solutions to new and replacement projects.

Whether it is providing external doors and gates for a housing development 'makeover' project, replacement fencing for schools or parks, or more specialised applications like aesthetically pleasing sound barriers to protect residents from excessive motorway traffic noise, our products have proven themselves.

We've also worked with sound experts to produce baffled acoustic wall cladding for Civic theatres and concert halls specifically aimed to enhance sound quality.





Some applications ...

- Furniture
- Cladding
 - Internal
 - external
- Work surfaces
- Internal fittings
 - Skirting
 - Architrave
 - Fascias

Gone are the days when it was acceptable for modular accommodation – caravans, mobile homes, temporary offices, classrooms and student housing – to be ‘second class’ in terms of finished quality.

Now people expect the quality they would find in permanent fixtures ... and we can help.

Our cladding provides a good looking and more permanent ‘feel’ to the accommodation, but there are many more benefits to using our material internally too.

The challenge for those providing mobile office and student accommodation, for example, is that when traditional materials such as MDF or chipboard with ‘wood-look’ veneers are used, once they are chipped the material quickly looks worn and ‘shabby’. Contrast that with our products, which have the same colour and material consistency throughout ... so if it gets scratched or chipped, you can hardly tell. Indeed, small scratches can easily be ‘rubbed out’.

The benefit? Longer lasting interiors, with better ‘wearability’, leading to fewer repairs and replacement, and better long-term property value.



Spas and fitness studios



Some applications ...

- Outdoor Garden spas
- Indoor home spas
- Leisure club facilities

The increasing prosperity of the population coupled with the trend towards making the most of leisure time has driven the demand for the health giving and relaxing properties of spas. Once classed as a 'luxury' item, we are now seeing increased demand for spas in home and leisure club settings.

The benefits of using our products in their construction are obvious – our materials are both strong and flexible, totally waterproof and come in a variety of finishes to suit any environment. They are also maintenance and infestation-free and can be manufactured to contain anti-fungicidal and anti-bacterial additives.





Visit us at ...
www.highwood.uk.com
to find out how you
could commercially
benefit from being
involved in creating
an international
environmentally friendly
future with us

Highwood has, over many years, developed strong working relationships with numerous companies around the world.

These relationships have, in many cases, involved creating licensed manufacturing facilities and successfully transferring the manufacturing process and technology involved in producing the unique range of Highwood products.

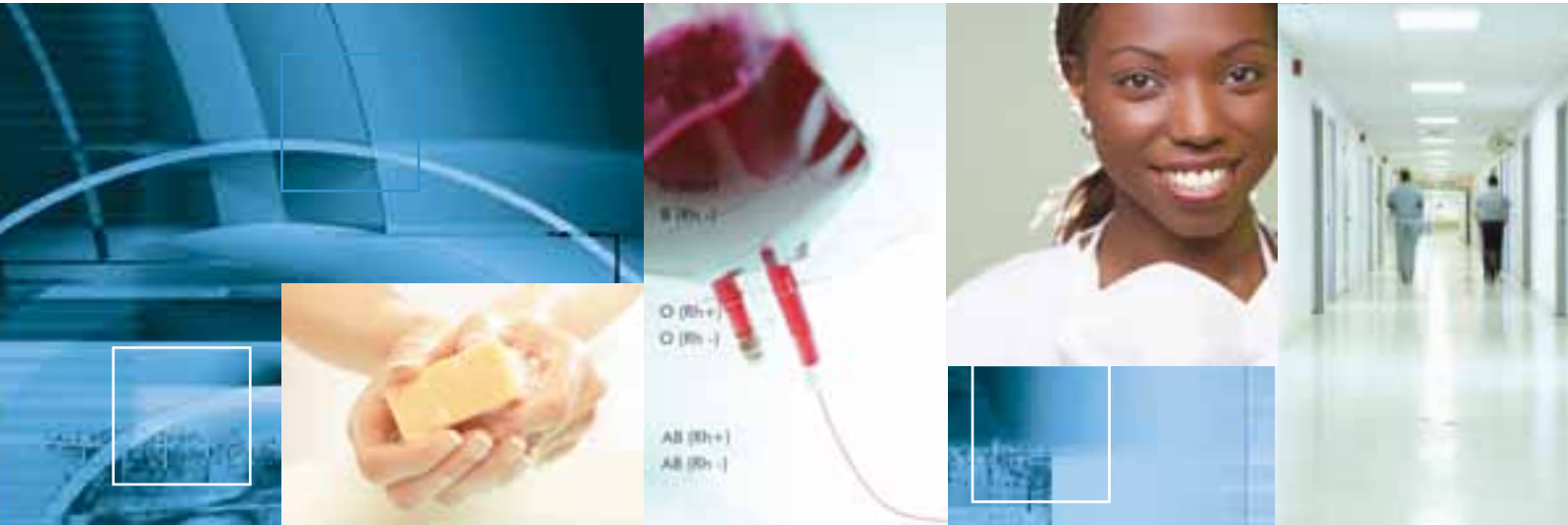
Operations in the USA, China, India and Kuwait have all benefited significantly from introducing the ability to manufacture structural styrene foam products for use as synthetic timber profiles.

Highwood is constantly looking to identify suitable opportunities to expand its licensed operations and has a range of packages to suit many different customers and product requirements.

The use of our products is set to grow exponentially over the next decade, driven by environmental sustainability demands. Our tried and tested technology is being constantly adapted for new and sophisticated uses by those who recognise its wide applications and the future worldwide demand. Potential partners in Iran, France, Australia and Portugal are exploring opportunities for working with us right now, for example.



The future...



The applications of our products at present are already wide ranging, but their future uses are only limited by our imagination.

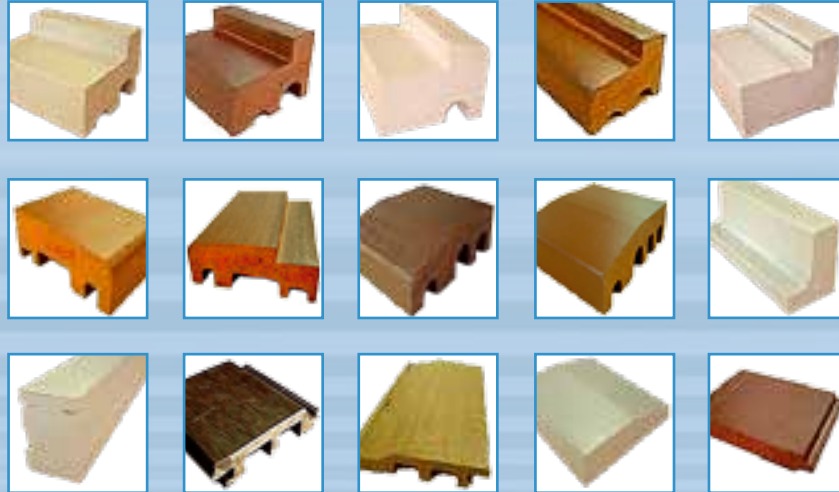
There is no doubt that the world will be driven to become more environmentally aware. We cannot continue as we have done in the past. Substitutes for natural resources are now needed more than ever – but these products must be seen to be beneficial as well as environmentally friendly.

Society needs products that will last longer and serve us better. We believe that our synthetic timber profiles and their vast range of uses provide opportunities to meet all types of need.

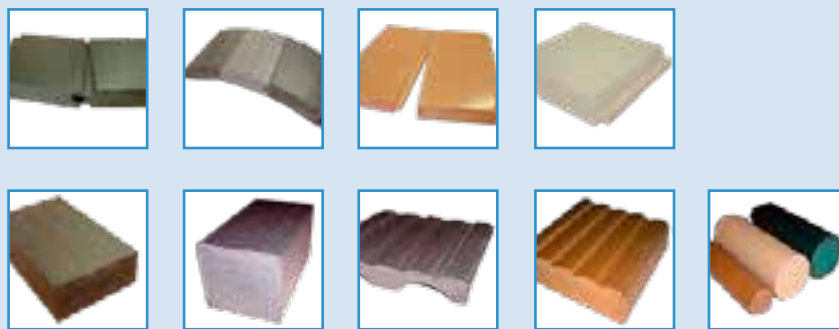
For us, the research goes on. For example, we are now investigating a range of products specifically designed for hospitals and other areas that require high levels of hygiene that not only self-clean, but also kill bacteria. The benefits will be enormous, both for the hospitals and the people they serve.



Building profiles



Horticultural profiles



Shopfitting profiles



Fencing



Technical and Mechanical properties of styrene structural foam

Properties	Test method	Results	Remarks
Tensile strength MPa	ISO 527	30.0	
Elongation at break %	ISO 527	2.5	
Modulus of rupture MPa	BS 373	59.8	3 point bending
Modulus of elasticity MPa	BS 373	2430.0	
Stress at proportional limit MPa	BS 373	50.5	
Compression strength parallel to gain MPa	BS 373	56.7	
Compression strength perpendicular to gain MPa	BS 373	20.7	
Screw retention kN	BS6984	2.5	1.5 inch No 6 screw 22mm depth
Nail retention kN	BS 6948	0.88	2.5 x 38mm wire nail, 22mm depth
Impact strength kj/m ²	BS 373	0.85	3 point bending
Impact height M	BS 373	0.66	For 20 x 20, span 280mm, tup 3.3 lb
Impact height M	BS 373	0.38	For 24 x 28, span 280mm, tup 4.4kg
Water absorption %	ISO 82	0.14	40 x 40 x 7.5
Coefficient of thermal expansion 1/°C	DIN 62-53491	5 x 10 ⁻⁵	
Toxic Gas Factor Only two detected from eight tested	SNES 714 CO ₂ , CO, HCl, HCN, H ₂ S SO ₂ , NO _x , Ammonia	0.7 2.6	Carbon dioxide Carbon monoxide 0 - 3 low toxicity
Classification of flame spread	BS 476	Class 1	
UV stability	ASTM E383-B	Good	No change in mechanical strength 375MJ/m ²
Vicat softening point	ISO 306	91°C	
Density g/cc		0.56	



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**It is our responsibility to manage the World's resources and beauty
and to secure a renewable future for our children**



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