

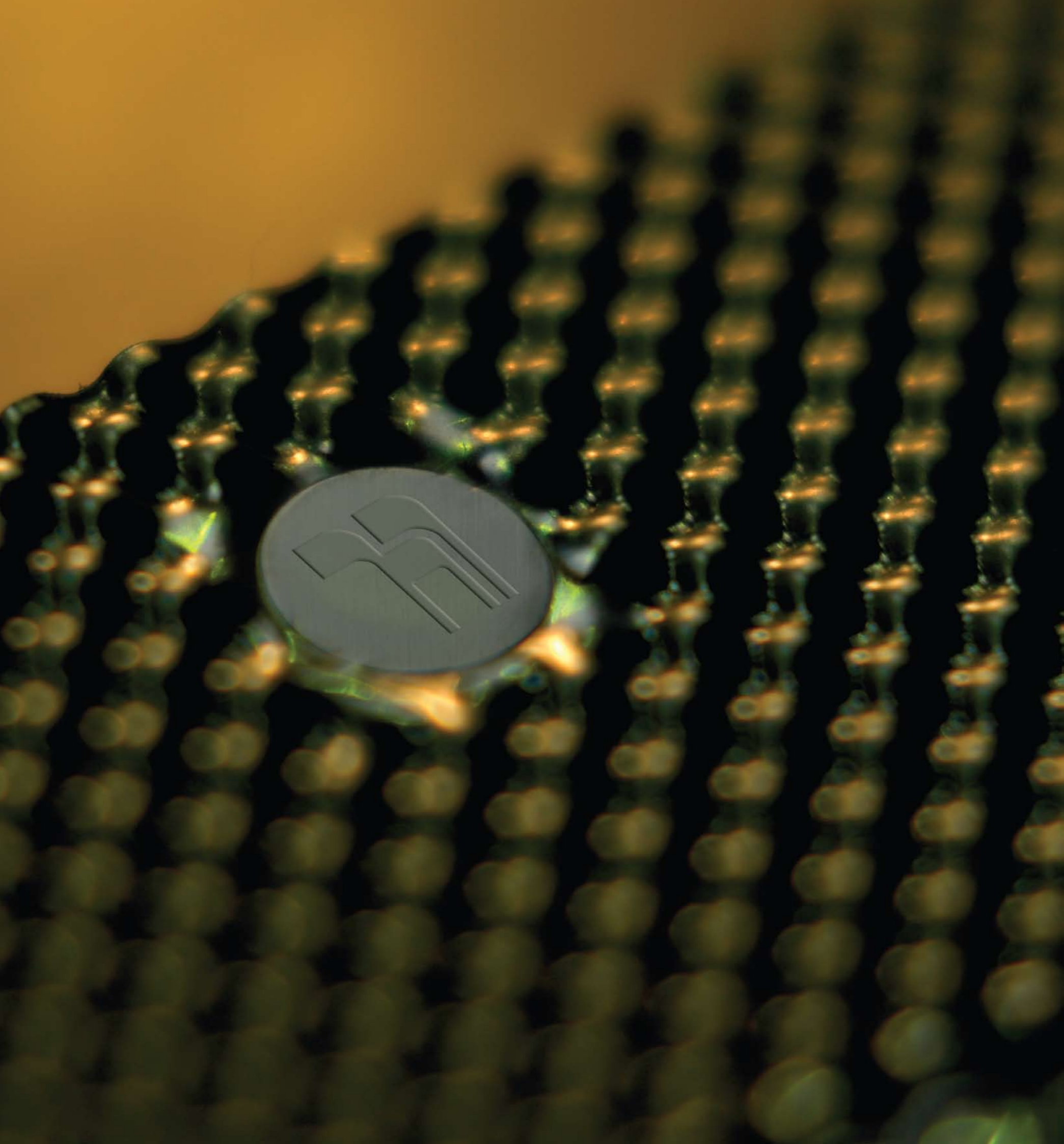


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UltraSTEEL®

Greener by design. Stronger by design.



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The Hadley Group

Winner
of the Queens Award
for Innovation



AWARDED TO HADLEY INDUSTRIES PLC
THE QUEEN'S AWARDS FOR ENTERPRISE
INNOVATION 2006

Winner
of the Manufacturing
Excellence Award



The MANUFACTURING
EXCELLENCE Awards



The ultraSTEEL logo is a registered
trade mark of Hadley Industries
Overseas Holdings Limited- 2010

The Hadley Group is one of the world's leading manufacturers of cold rolled sections and products. We operate from purpose built premises in the United Kingdom, Dubai, Germany and Thailand, and are dedicated to the provision of matchless standards of service, quality, innovation and technical expertise.

We carry out business on 5 continents with 36 countries.

Our continued investment in and the development of new roll forming technology has kept us at the forefront of new innovations for the past 40 years. The integration of advanced research and development with in-house tool manufacture and the construction of our own rolling machines has earned the Hadley Group its reputation as a major force in cold roll formed technology.

The latest computer aided design technology and internally developed roll form engineering software is used in the development and production of a wide range of products that define the highest standards of performance and reliability.

We supply many industries from automotive and construction through to aerospace.

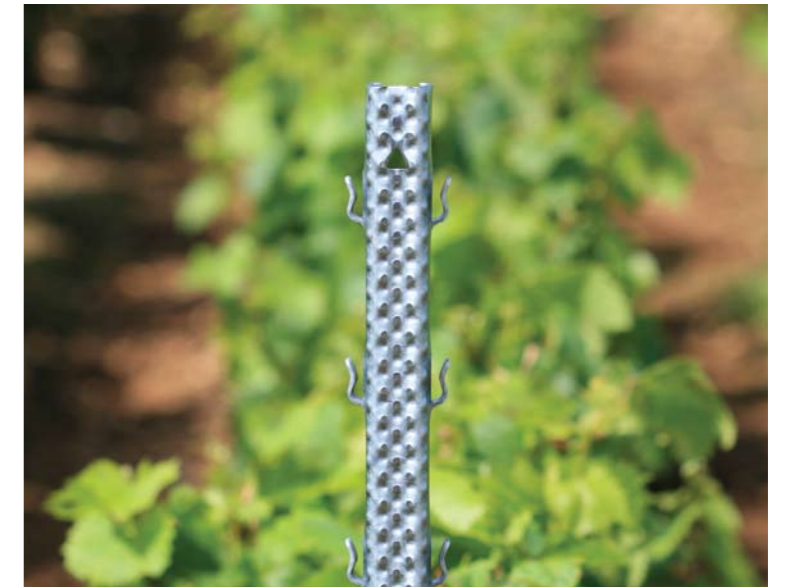
Resulting from over 20 years of extensive R&D investment by the Hadley Group, it is the company's internationally patented **UltraSTEEL**® process that has won the Queen's Award for Enterprise Innovation. It is a major technical innovation, developed for use on virtually any cold rolled formed metal section and has revolutionised the production of rolled metal components around the globe. With international patent protection **UltraSTEEL**® products are manufactured exclusively by Hadley Group companies and our licensees.

Adherence to strict quality assurance processes are central to the Hadley Group design and manufacturing policy that requires all companies to confirm to BS EN ISO 9001:2008.

UltraSTEEL® is

Greener by design

Only through the application of our patented **UltraSTEEL®** process can you truly minimise your effect on the environment.



Products manufactured using the **UltraSTEEL®** process will use less metal, which of course reduces the impact your business has on the environment. It also results in products that are lighter so you can ship more on each load, lowering transport related pollution too.

But, lowering your environmental impact doesn't stop there. We have an unrivalled knowledge of roll form engineering developed over 40 years and on thousands of products, plus internally developed engineering software and the latest product design and test technology.

- Our engineers will develop highly efficient product designs that perform flawlessly, resulting in very economical metal usage.
- State-of-the-art manufacturing plant ensures high accuracy and low waste.
- The **UltraSTEEL®** process can also be applied to recycled metal.

All of this means that when we design and manufacture your product we're helping you to become a greener business.



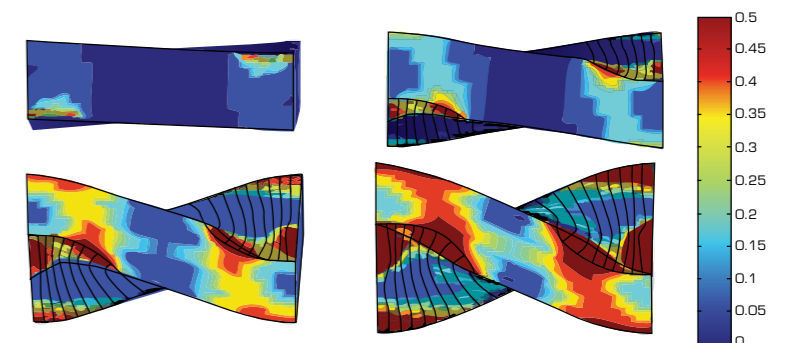
UltraSTEEL™ is

Stronger by design

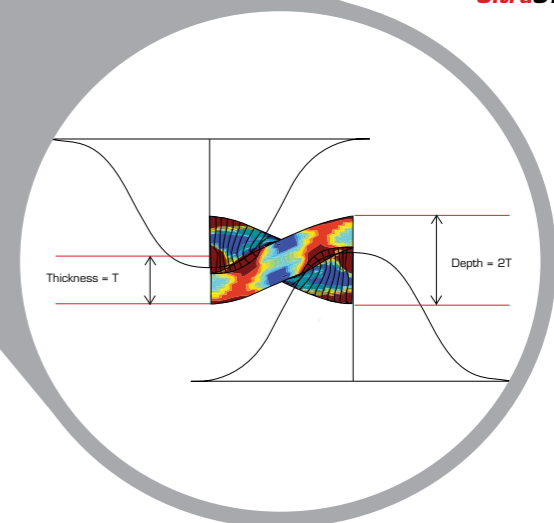
UltraSTEEL® is a cold rolled pre-forming process that locally work hardens the base metal. Because the process is applied to the standard base metal and in-line in the cold rolled forming process, it does not increase manufacturing cost and is ideal for high volumes. In fact, over 1 billion metres of UltraSTEEL® product are manufactured each year by some of the world's most respected brands.

The metal is formed between mating rolls, which produce a dimpled pattern across the surface of the material. During the process, the effective thickness of the material is increased by locally deforming the strip to twice its original gauge. This deformation leads to substantial work hardening thereby making it stronger.

The phenomenon of work hardening has been understood for many years, and its effects have been applied in many applications. However, we have exploited our knowledge of cold rolled forming when developing the UltraSTEEL® process, to control local deformation within the metal's elastic plastic region.



The finite element simulation illustrates the regions of local deformation and resulting plastic strain which occurs during the UltraSTEEL® process.

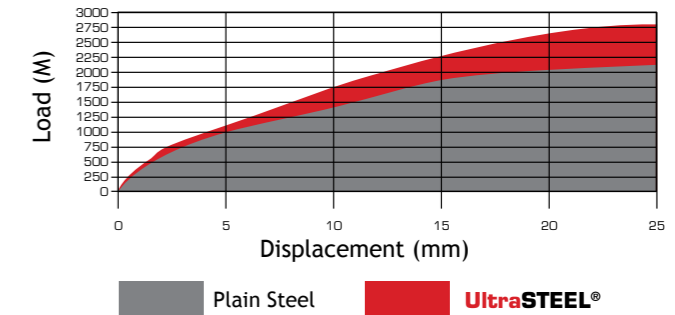


UltraSTEEL® is Stronger by design

By applying the UltraSTEEL® process you will benefit from a significant increase in the strength of base metal, so you can produce stronger, better performing, lighter and more environmentally friendly products. It enhances thousands of products manufactured globally.

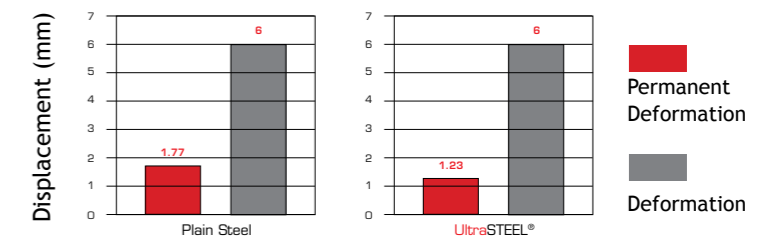
Load carrying performance

This graph illustrates the load carrying performance of two identically dimensioned products, one produced using the UltraSTEEL® process in a reduced gauge and one plain. The UltraSTEEL® product not only carries a higher load, but is also stiffer.



Improved memory and spring tension characteristics

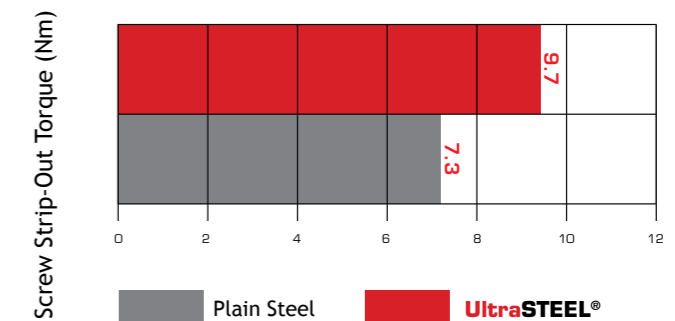
Sections manufacturing using the UltraSTEEL® process have a greater ability to return their original form after loading.



A comparison between two samples from the same original coil indicates a 31% reduction in permanent deformation.

Enhanced screw retention

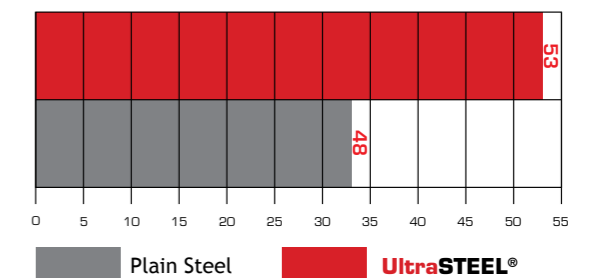
The UltraSTEEL® cross-section ensures that every screw is in contact with a material thickness greater than the nominal gauge of the steel, resulting in a significant increase in the torque required to strip-out the screw.



Light gauge UltraSTEEL® in studded wall application

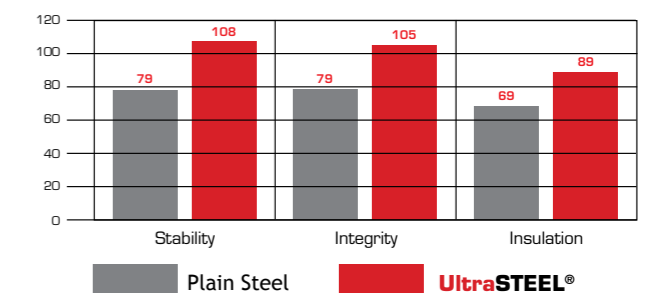
Reduced noise transmission

The dimpled surface can reduce the transmission of noise.



Improved fire test performance

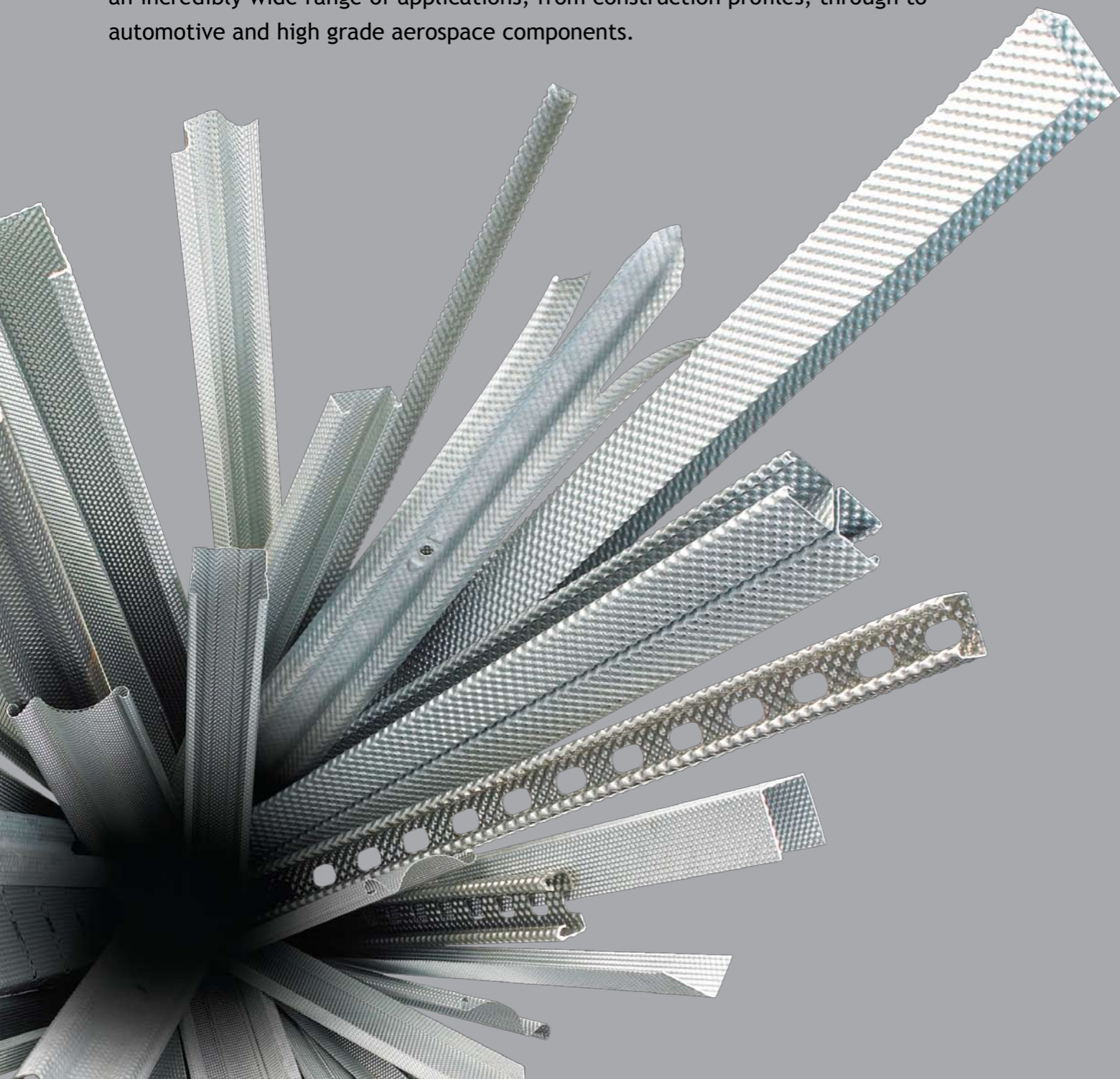
Fire test performance in a studded wall application shows that UltraSTEEL® performs significantly better in both Stability, Integrity and Insulation.



Apply the UltraSTEEL® process to your product.

Typical applications for **UltraSTEEL**[®]

The simplicity and flexibility of the **UltraSTEEL**[®] process make it suitable for an incredibly wide range of applications, from construction profiles, through to automotive and high grade aerospace components.



If you are interested in applying the **UltraSTEEL**[®] process please contact us by phone or e-mail.

Tel: +44 (0) 121 555 1300

E-mail: ask.hadley@hadleygroup.co.uk

Could you please provide the following information so that we can discuss your application in detail:

- Name
- Contact details
- Company name
- Product dimensions and or detailed drawings
- Material required
- Production volume (estimated)
- End user market and geographic location

Apply the **UltraSTEEL**[®] process to your product.

Global Patent Protection

Worldwide Manufacturing

The **UltraSTEEL®** process is protected by global patents and is manufactured around the world by licensee holders and Hadley Group companies.

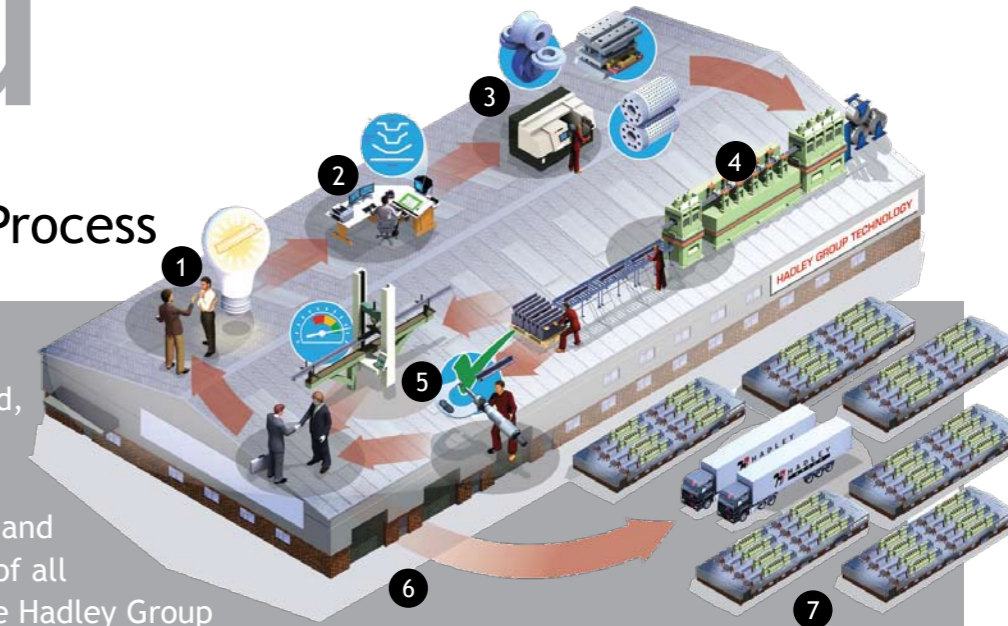
Global Production Statistics

- Over 1 Billion metres produced each year
- Over 40,000 tonnes produced each year
- Manufactured on over 300 mills worldwide

Helping you

apply the
UltraSTEEL® Process

Hadley Group Technology (HGT) is unique in the world, a centre of excellence in cold roll-forming technology, product design and manufacture. It is the hub of all technical knowledge for the Hadley Group and our customers, and provides the vital services that ensure our customers have world beating products.



We usually work with our customers from an initial design consultation through a rigorous 9001 compliant process including the design, manufacture and commissioning of tooling, sample testing and approval and the transition in to high volume manufacturing.

1 Design Consultancy

Using a combination of experience and our unique internally developed sectional properties software we can help you to design a product to best suit your application.

2 Tooling Design

Our team of expert tooling designers will develop the bespoke roll tooling and press tooling which will be used to manufacture your product. This design work is created using our in-house CAD-CAM system and evaluated with custom geometrical analysis software.

3 Tooling Manufacture

The tooling designs are issued to the Hadley Group Technology workshop, where state-of-the-art CNC machinery is used to manufacture the roll and press tooling.

4 Tooling Commission

Before the tooling is delivered to Hadley Group manufacturing facilities it is commissioned on one of Hadley Group Technology's two fully functioning roll-forming lines. All tooling is fully tested to ensure it meets the exacting standards specified by our customers.

5 Sample Approval

Product samples manufactured during tooling commissioning are provided for approval, to ensure every feature of the initial specification has been achieved, or more often surpassed! We also provide material and product testing facilities and conduct physical tests where necessary. We encourage you to come on site to approve our processes and we are happy to adopt specific inspection requirements such as PPAP's, SPC's and capability studies before we release samples for approval.

6 Tooling Approval

Prior to full scale production the project is fully closed off internally through a 360° review. Here lessons learned reports, post tooling meetings and tooling feedback reports are input into our knowledge base and project approval documents are signed off. The tooling is now ready for efficient mass manufacture by the appropriate Hadley Group manufacturing facility.

7 Hadley Group Manufacturing

Full scale production is carried out at one of the Hadley Group Companies. With over 40 rolling mills and a wide range of complementary manufacturing capabilities such as in-line laser welding we can provide both the high volumes and specialist manufacturing solutions.