

expansil™

*Silicone*  
Engineering Ltd



## Our expanSil™ range – previously known as SE5xx – is designed and developed specifically for the manufacture of extruded silicone products.

Our continuous production process means we can provide much longer expanSil™ coil lengths, which can help significantly reduce set-up and changeover times, and increase your operational efficiency and competitive advantage. However, we still use conventional methods where appropriate, to ensure each product matches your unique requirements and specifications.

expanSil™ is available in several densities – from 10 (soft) to 33 (hard) – and in standard colours white, red and grey. We also offer a colour-matching service for special requirements.

expanSil™ GP materials offer all the resilience and versatility of silicone rubber, and are ideal for industries where adverse temperatures are an issue – or where an inert, robust polymer is required. Specialist grades also comply with a range of industry standards, such as those of the Food and Drug Administration (FDA), and the Water Regulations Advisory Scheme (WRAS).

As well as the expanSil™ GP range, we offer specialist products for more demanding or unusual environments. Over 50 years, we have continuously developed, refined and improved an impressive range of silicone formulations to comply with new legislation and specifications, and to meet ever-changing customer needs.



### Some of our most popular specialist expanSil grades include:

- expanSil™ FR** flame retardant and self-extinguishing
- expanSil™ THT** for higher temperature resistance
- expanSil™ LCH** low smoke and low toxicity silicone, developed for public safety
- expanSil™ UL** UL94v0 approved sponge material

If you don't see an expanSil™ product here that meets your specific needs, get in touch and tell us more. We can arrange a site visit to discuss your requirements, develop samples and quickly provide a rigorously tested, industry-compliant product that matches them.

## Wide-ranging Applications

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expanSil™ is used extensively in a wide range of industries. For example, expanSil™ profiles and sections are often used in the manufacture of seals and gaskets that require good compression set, and its soft foam characteristics ensure excellent seals, even on rough, uneven surfaces. It is used for oven door gaskets, street lighting seals and domestic heating systems, and has further uses when extruded as tubing. Its impressive insulation properties and temperature tolerance also make it popular for various uses in construction, and in fire protection applications that require a silicone polymer's heat resistance and fire retardant characteristics.

We also have facilities to manufacture fully fabricated products, including jointed rings, mitred or moulded corner seals, and using our two Hawkes presses can provide a high volume punching service for washers and gaskets.

The expanSil™ range meets an extremely wide range of needs. With our depth of knowledge, breadth of experience and industry-leading technical facilities, we provide tried and tested products to a large portfolio of customers across many sectors.



## Product Availability



### Formulations

### Products

#### Sponge Silicone (expansil™)

	Extrusions	Tubing	Gaskets
GP – General Purpose	●	●	●
FR – Flame Retardant	●	●	●
THT – High Temperature	●	●	●
FDA – Food & Drink	●	●	●
LCH – Low Smoke & Toxicity	●	●	●
UL – UL94v0 Rated	●	●	●
AFS / AMS	●	●	●

### Special Grades

metectSil	●	●	●
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Just to put the scale of our expanSil™ compounding and extrusion manufacturing facilities into perspective take a look at the summarised asset inventory of machinery used in the production of these products.

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Our onsite mixing facility consist of

- Banbury Mixer ●
- Winkworth Mixers ●●●
- Mixing Mills ●●●
- Barwell Pre-Formers ●●

Sponge extrusion lines consist of

- Compound Extruder ●●●
- Pre-Cure Belt/Oven ●●●
- Winding Unit ●
- Post-Cure Oven ●

Fabrication cell consist of

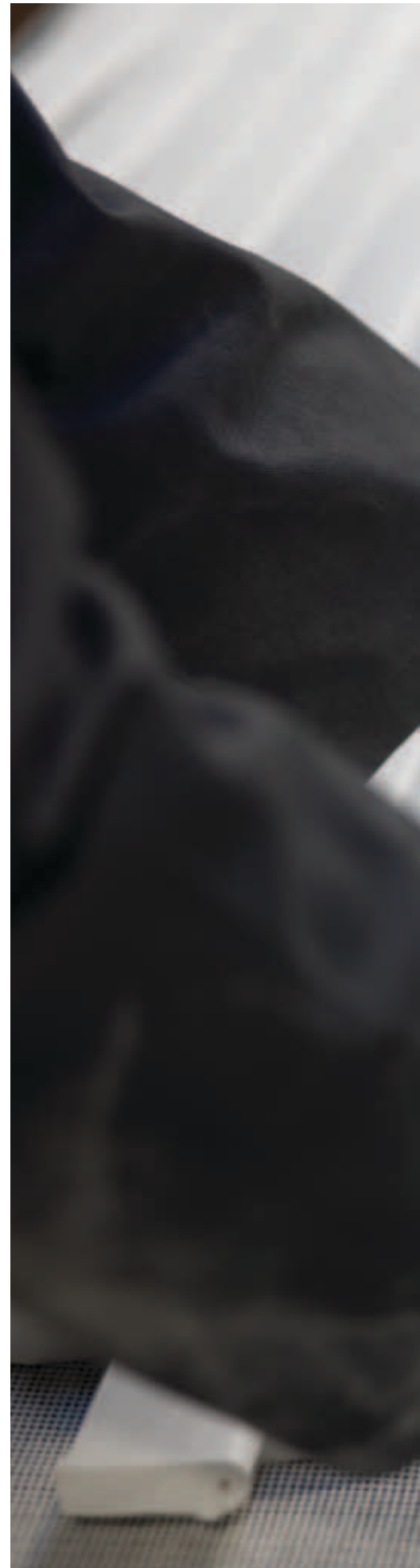
- Clicking Press ●
- Jointing Machine ●●●●●●
- Heat Applied Roller Unit ●
- Autogill Cutting Machine ●●
- Corner Moulding Press ●●●●
- Heavy Duty Hawkes Punching Presses ●●
- Fixed Polish Machine ●
- Optical Testing Machine ●
- Manual Cut & Clip Assembly Station ●

● = Number of Assets

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Image Right

*Every step is quality checked throughout production...*







## Expertise for all sectors and industries

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Silicone Engineering has designed and manufactured over 2,000 products and materials to address a wide range of issues – for many customers, across many sectors and industries. We also have our own test laboratories, with the latest technology and equipment, which support the many innovative products and services we provide.

### Extensive in-house capabilities

Because we design and test our own products, our customers have added faith in our processes and services. In other words, our focus on research and development means our customers know what we provide will meet their needs. Our in-house testing procedures include:

- rheology: the study of how liquids and 'soft solids' flow
- physical behaviour under stress and fatigue
- fatigue through exposure to extremes of temperature
- fire rating
- toxicology
- spectrum control
- density, hardness and volume evaluations

As an example of how we use our testing facilities, we can assess compounding material from 1kg laboratory trials up to 2,000kg production mixes, produced in one of our 'D' chamber mixers or one of our five 'Z' blade mixers. Or we can mill-mix batches from one of our six mills. We test each mix for quality control conformance and shore hardness verification, so every batch we provide meets the highest standards and defined specifications.

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### Image Right

*Sponge extrusion*







#### [Support for planning and compliance](#)

Once compound materials are approved, they are logged on our enterprise resource planning (ERP) system, to help with compliance management and planning control. We then process them on our calender sheeting or extrusion lines in accordance with ISO9001:2008 quality management processes.

We monitor, process and batch-test vulcanised materials to our own strict international standards for tensile strength, stress strain, tear strength, elongation, heat age conditioning and compression. And on request, we can send documented test results for each batch of vulcanised materials we deliver. Our delivery lead times are world-class.

#### [Continuous development and improvement](#)

Our significant investment in technology and equipment for research, development and production means we can quickly and effectively meet a wide range of requirements. With some of the best-equipped testing and manufacturing facilities in the industry, we can design, manufacture and verify the most suitable silicone products for almost any application. This also means we can continually look at ways to improve our products and services, and offer unrivalled after-sales support.

## The latest innovations

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**At Silicone Engineering, we always aim to be at the forefront of silicone technology innovation. This is the only way we can be sure to keep providing you with the products that meet your specific needs – whatever industry you're in, and no matter how rapidly it's changing. Using more than 50 years' experience, and with unrivalled technical resources, we'll work with you, closely and confidentially, to develop cost-effective solutions to any silicone challenge.**

### [In the laboratory](#)

With one of the best-equipped laboratories in the industry, we can develop and introduce new materials to very tight deadlines. But that doesn't mean cutting corners: we formulate, test and certify all our material developments to the relevant standards before going to market. Using our comprehensive mixing and compounding facilities, we currently process more than 1,200 tonnes of silicone each year, and maintain full quality control and material integrity at every stage.

### [More than materials](#)

Innovative materials often need new processing methods to ensure their properties are maintained, or even enhanced, when they're used in manufacturing. So our creative approach doesn't stop once we've developed a new material: we also use our manufacturing expertise to prototype, refine and keep improving the processes in which our materials are used. This means continually investing in equipment – to ensure your new products give you the performance you need, at the right price.

## On a mission to innovate

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Many businesses claim to be innovative – but for us, it's a matter of survival.

To keep our customers coming back to us, we have to keep developing new ways of using silicone. So innovation is central to our business.

**Silicone Engineering Ltd.**

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