

Flexitallic®



innovate / customize / educate

PRODUCTS & SERVICES

International manufacturer
& supplier of specialised
sealing products & services.



www.flexitallic.eu

The *Flexitallic* Group



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FLEXITALLIC

The Flexitallic Group is the international market leader in the manufacture and supply of high quality, high value industrial static sealing products.



About us

As the developer of the spiral wound gasket in 1912, we have built on this legacy of innovation with revolutionary products including Thermiculite[®] and Sigma[®], The Flange Rescue Gasket, and most recently the Change[™] Gasket, set to transform the global sealing industry.

We have a global network of Allied Distributors across 30 countries. This ensures local demand is met quickly, providing a combination of the highest product quality and outstanding customer service.

Our extensive and varied product offering includes spiral wound gaskets, RTJ gaskets, Flexpro[™] Kammpfiles, sheet materials, dynamic and static packings, pipe support and custom rubber products. Drawing upon the group's rich history and present day values of leadership, quality, service and technology, we are at the forefront of developing sealing solutions for industries around the world.

In addition to a wide range of products, we also deliver world-class technical support and Joint Integrity training.



● Allied distributors

Based on sales and geographic reach, the Flexitallic Group has become *the* global supplier of industrial gaskets.

Innovative Product Range

We have a rich history of innovation, which has seen us lead the industry with many new products.

Over the years, our products have gained a reputation for quality, reliability and technology that is second to none.

Customised Engineering Solutions

Our Application Engineering, Production Engineering and R&D teams work closely together to design, develop and manufacture bespoke sealing solutions.

We have been responsible for a number of truly revolutionary products, including Thermiculite®, Sigma® and the Flange Rescue Gasket, which ensure we are able to continually meet the ever more stringent requirements of our customers.

Flexitallic® Safe

Over the last century, our aggressive R&D efforts have helped customers become Flexitallic® Safe. From the first Spiral Wound Gasket in 1912 to the ever evolving applications for Thermiculite®, our goal is to develop materials that push the parameters of heat, pressure and chemical resistance.

Our Commitment to Quality

We place great emphasis on maintaining international quality standards, and are approved to ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007, API 6A and API 17D, to ensure we meet the highest possible standards for all our products and services.

We also invest heavily in test and quality assurance equipment to maintain our reputation for the highest quality products.

Our materials are subjected to a wide range of tests as specified by statutory regulations and customer requirements. These approvals enable our customers to make informed choices as to the suitability of a product for each and every application.

Inside Industry

We pride ourselves on not simply supplying products, but by supporting customers with a detailed knowledge of their industry and applications, so that products and services are tailored to their specific needs.

This unique approach means that we focus on providing more than just a product, but also a complete solution that adds genuine value to our clients.

Global Distribution... Local Support

Our products are distributed through a global network of Allied Distributors.

These carefully selected distribution partners are strategically located within their territory to deliver the best possible service and products to our customers. This approach means our products and know-how are available to the global industries we service.

Allied Distributor



Licensee Manufacturer



CHANGE GASKET

Engineered like
nothing else.
To perform like
nothing else.
What a Change.

chang⊕



When we invented the spiral wound gasket in 1912 there was nothing like it. 100 years of innovation later, we introduce the Change™ gasket. Again, there's nothing like it.

Incredibly robust and resilient, the metal-wound Change™ heat exchanger gasket is designed to deliver the most dynamic seal ever.

The Change gasket is manufactured with proprietary equipment, using a 5-times thicker metal spiral and a unique laser welding process that penetrates completely through the winding, so it requires no inner or outer ring and is easy to handle and install as a double-jacketed gasket. Best of all, it's proven to perform without fail at least 60% longer than any other heat exchanger gasket – spiral wound, double jacketed, corrugated or kammprofile.

Benefits

- Excellent compression and recovery
- High performance in thermal cycle applications
- Robust and versatile design
- Fire-safe (API 6FB)

THE CHANGE GASKET. UNIQUELY MANUFACTURED.

Shape

- Unique wire profile
- 304, 316L & other materials
- Develops a uniquely solid gasket



Laser welded

- Higher unit adhesion
- Pin point accuracy
- Solid construction



THERMICULITE®



Another first for Flexitallic.
Thermiculite® - the
complete sealing solution.

Thermiculite®
innovative. versatile. complete.

Thermiculite® is specified by name where critical sealing matters. Applications include Petro chemicals, Fertilisers, OEM and Oil & Gas applications, where process conditions are extreme.

Our experienced engineers use the versatility of Thermiculite® to create bespoke sealing configurations in equipment and piping systems to increase operational up-time for our customers. This truly remarkable product has proven itself as an effective long-term sealing solution in over 600 of the most demanding industrial sealing applications.

Thermiculite® is a patented product with amazing versatility. Not only can it withstand high temperatures and corrosive environments, due to our unique formulation, we are able to offer Thermiculite® as a stand alone sheet material, as a filler for SWG's, as a facing for Kammprofiles and also in many of our other product lines.

We have also developed a range of valve stem packings, using Thermiculite® technology, for use in the most arduous service.

Products

- 700-800 Series - sheet grade
- 866 - specialist grade (SOFC)
- 896 - aerospace
- Kammprofiles
- SWG
- Static and Dynamic Packings
- I-Flex Isolation Kits
- FRG

Benefits

- Engineered and Manufactured in the UK
- Fire-safe (API 6FB)
- Wide temperature range – cryogenic to 1000°C
- TA Luft approved
- Wide availability of styles of gaskets
- Free from oxidation
- Excellent chemical compatibility
- Electrical and thermal insulation
- Universal
- Replaces graphite, PTFE, non-asbestos materials

PROVEN TRACK RECORD IN THE FOLLOWING INDUSTRIES

- | | |
|-------------------------------|---|
| • Power Generation | • Automotive |
| • Fertiliser (Agro-Chemicals) | • Aerospace |
| • Oil Exploration | • Oil Refining |
| • Industrial Chemicals | • Emerging Technologies (Solid Oxide Fuel Cell) |

SPIRAL WOUND GASKETS

Driven by the industry's need for safe, effective sealing solutions for increasingly demanding applications, Flexitallic invented the spiral wound gasket in 1912.



Not satisfied with inventing the iconic spiral wound gasket, we have continued to innovate by developing world leading materials.

Thermiculite® is often used as a filler material to provide resistance to temperature, chemical attack and corrosion.

Through precision engineering, the spiral wound gasket, available in unlimited configurations of high quality metals and materials, is individually tailored to meet the demands of each application.

Globally acknowledged to provide a superior seal in the most exacting of conditions, its flexibility and recovery gives it a unique ability to cope with the effects of high pressure, wide temperature fluctuations and bolt relaxation.

Spiral wound gaskets are found in a host of applications across the world, from small diameter turbine gaskets, to HP heat exchangers.

Product Range

- Standard Gaskets – Available to a range of international standards including ASME / EN
- Low stress sealing element
- Heat exchangers
- Carrier rings
- OEM
- Application specific designs

Benefits

- Engineered and Manufactured in the UK
- 24/7 manufacturing capability for specialist requirements
- Significant stock holding of standard gaskets
- Flexibility to manufacture and supply gaskets with a combination of inner and / or outer guide rings
- Wide range of machinery that enables us to manufacture any size gasket
- UK centre of excellence supported by global distribution manufacturing
- Custom designs available
- World-class testing and development centre
- Support from our team of Application Engineers

LEAK-FREE START UP

“By using custom designed heat exchanger spiral wound gaskets, we achieved a leak free start up – a first in 15 years.”

Chief Engineer
Leading UK Refinery

FLEXPRO™ KAMMPROFILES



Flexpro™ - The versatile gasket with three key features: compressibility, low stress, convenience.



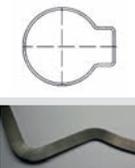
The FLEXPRO™ Kammprofile gasket has three key features: the compressibility of a sheet gasket; the sealability of a spiral wound gasket and the ease of handling a solid metal gasket.

FLEXPRO™ Kammprofile gaskets are the ideal product choice for standard pipeline and heat exchanger applications. They provide a high level of sealing integrity but with the ability to seal at seating stresses normally associated with sheet materials. Kammprofiles are able to cope with high temperatures and pressures making them suitable for heat exchanger service. The product can also be used time and again when correctly refurbished.

Benefits

- Engineered and Manufactured in the UK
- Wide stock of raw materials
- Adherence to the tightest global specifications
- Inspection equipment allowing exact measurement of machined profiles
- TADU machine for very large diameter gaskets
- Thermiculite® technology for high temperature applications
- Custom shapes
- Wide range of machinery
- World class testing and development centre
- Support from our team of Application Engineers

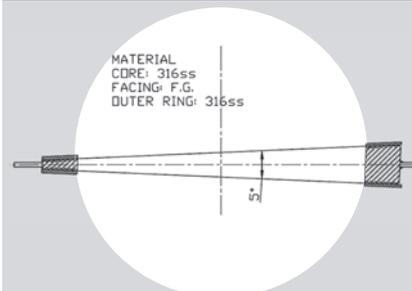
Product Range

	STYLE PN – serrated profile used in confined locations eg heat exchanges
	STYLE ZA – serrated profile with loose outer ring
	STYLE ZG – serrated profile with integral outer ring
	CUSTOM SHAPES – We have developed specialist manufacturing techniques, enabling us to produce FLEXPRO™ Kammprofile gaskets in a wide range of non-circular shapes and sizes.

These are particularly useful for applications that need the narrow sealing element and low stress seating of a kammprofile, but traditionally have had to use lower grade products such as jacketed or metal reinforced gaskets. Applications include oval, obround and square manway and boiler door joints and large rectangle gaskets for fin-fan header boxes.

Contact our Application Engineering Team to discuss specific requirements.

CASE STUDY: WEDGE KAMMPROFILE



We were contacted late one Friday with the problem, by Sunday the product had arrived on site in Nigeria. The issue was the misalignment of the mating component which meant a standard gasket could not be used, a bespoke Kammprofile was the perfect fit. This highlights our capability to turn a customer problem into a innovative solution.

“This novel solution certainly solved a problem that looked like it might prevent the successful start up after shutdown.”

Site Shutdown
Co-ordination Engineer

RING TYPE JOINTS



The metallic Ring Type Joint is used in the petroleum industry, where high pressure applications necessitate the need for a high integrity seal.

Every RTJ that leaves our manufacturing facility is identified with key product information to give you the confidence that our products meet stringent application requirements.

In addition, every material that enters our factory is checked using the latest Positive Material Identification (PMI) technology, which combined with our material database, ensures we have full product traceability.

RTJ's were initially developed for use in the upstream petroleum industry and are also commonly used on valves and pipework assemblies, and high integrity pressure vessels.

Product Range

- Style R – oval/octagonal to API/ASME
- Style RX
- Style BX
- Subsea
We are able to supply subsea variants in accordance with API 17D
- OEM design

Benefits

- Engineered and Manufactured in the UK
- API 6A and 17D approvals
- Specialist coatings available including xylan, silver and zinc
- Wide stock of raw materials
- Wide range of CNC machines
- The latest inspection technology – CNC/CMM
- Custom designs available
- World-class testing and development centre
- Support from our team of Application Engineers

PRODUCT FOCUS: RTJ-KAMM



The RTJ-Kamm gasket combines the high pressure seal of an RTJ with the low stress sealing of a Kamm. The sealing faces are serrated and faced which means this style is ideal for use with damaged flange grooves or in low load applications.

ISOLATION KITS

Flexitallic isolation system, an insulation gasket to provide electrical and thermal insulation using Sigma® and Thermiculite® technology.



I-FLEX

We provide a complete product range to limit corrosion in pipeline systems, using modified PTFE material Sigma® and our unique high temperature material Thermiculite® - both giving unrivalled performance.

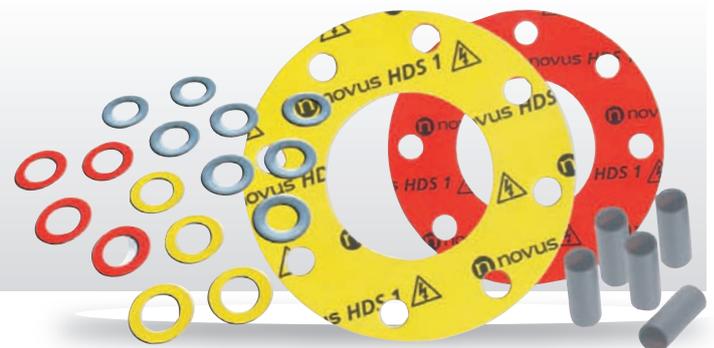
The insulating sets are designed to electrically isolate flanges and bolts in cathodically protected piping systems or whatever dissimilar metals are present.

The specially engineered materials used in the I-Flex isolation system are also able to extend traditional operating temperature pressures and chemical compatibility, seen with current insulation technology.

Benefits

- Engineered in the UK and manufactured in all Flexitallic facilities
- Available as individual gaskets and full isolation set
- Widest possible temperature range -200°C to 1000°C
- Service pressure range from vacuum, to class 2500
- Fire-safe
- Can be used on all types of flanges
- Used for both cathodic and galvanic corrosion

HDS1



The sets are designed to electrically isolate flanges and bolts in lower pressure and lower temperature systems.

Insulation Kits also eliminate static charge transfer in discharge and loading operations at quayside and oil storage terminals.

Insulation Kits are available for every type of flange and in a range of materials to suit the application, including our unique electrically insulating material HDS-1.

SIGMA®

For applications where chemical resistance is paramount, SIGMA® is the only option.



Utilising a unique manufacturing process exclusive to Flexitallic, SIGMA® represents the latest generation of biaxially orientated PTFE materials.

All components in the SIGMA® range are FDA compliant. The material's clean nature makes it ideal for use where product contamination is of concern, such as food, pharmaceuticals and electronics.

The chemical resistance and dimensional stability of the material ensures total sealing reliability and minimises fugitive emissions.

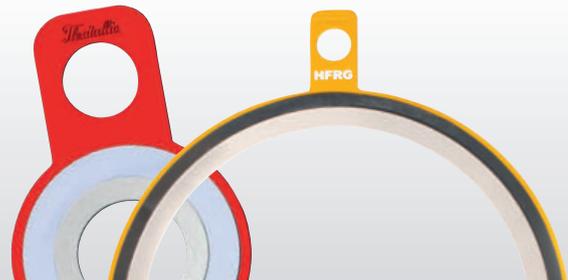
Products

500 511 533 588 600

Benefits

- Engineered and Manufactured in the UK
- Cryogenic to 260°C
- Outstanding chemical resistance across pH range
- Suitable for low bolt load applications
- Materials available in a range of different sheet sizes and thicknesses
- FDA compliant
- Available for oxygen service
- Easy to handle and cut

FLANGE RESCUE GASKETS



Winner of the 2013 NACE Corrosion Innovation of the Year Award.



The FRG range of high performance sealing solutions is the latest innovation for challenging, corrosive environments. Developed in direct response to the oil and gas industry's requirement for effective closure on damaged flange faces, with additional corrosion inhibiting properties, it is now helping to mitigate corrosion problems throughout industry.

The fight against corrosion is a constant battle. Internal corrosion and damaged flange faces are responsible for a significant proportion of hydrocarbon releases and can have a major impact on operating costs, particularly on ageing assets.

The FRG can be used to seal on damaged flange faces where previously only very costly or time consuming options existed.

By using the FRG range it helps you to fight the corrosion battle head on.

Benefits

- Engineered and Manufactured in the UK
- Significant cost savings
- Speeds up maintenance downtime
- Fire-safe to API 6FB
- Topside/subsea variants
- Bespoke designs available

For more information visit www.flangerescuegasket.com

SHEET JOINTING

The Flexitallic range of Compressed Fibre Jointing is designed for a wide range of industrial and original equipment applications, where sealing performance and specification is essential.



A comprehensive range of grades are available covering a wide spectrum of applications.

In addition, the materials can be supplied in private brand and colour formats to ensure your company or customer is accorded recognition.

The jointing can be supplied as sheet or as cut gaskets, either to standard or non-standard dimensions.

Products

Novus 10
Novus 30
Novus 34
Novus 45
Novus 49 (Graftec)

Novus 26, 28, 29, 40, 48 (Acid), HDS1

Flexitallic SF1630, SF24/2800, SF3300, SF5001, AF2100



Benefits

- Engineered and Manufactured in the UK
- Wide range of service applications
- Easy to handle and cut
- Good bolt torque retention
- Reliable for general service chemicals

GRAPHITE

Exfoliated graphite products are designed for demanding, general industry applications typical of the petrochemical and refining industries.

Manufactured from high purity exfoliated graphite, our products are available with a variety of metallic inserts and combinations of thickness.

Ultra high purity graphite is available for the nuclear industry, and high pressure grades are also available.

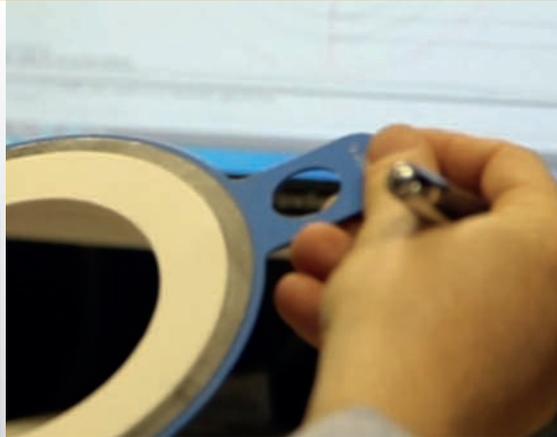
Products

RGS1 RGS3 RGS4

Benefits

- Wide chemical resistance
- Good compressibility
- Resistent to thermal shock
- Excellent stress retention

TECHNICAL SERVICES



“Flexitallic engineers provide value for money, engineered solutions to customers on a global basis, giving advice on gasket selection, gasket usage and trouble shooting on those difficult applications.

With over 7000 documented solutions accessible on our Global Engineering database the list of satisfied customers continues to grow.”

Russ Currie
Head of Engineering

Custom Design

We have a world-class capability to supply bespoke solutions for all applications. Our Application Engineers have a wide range of experience in different industries and applications to enable us to provide a comprehensive design service.

In many instances, special and bespoke designs are required, and because we have a dedicated Application Engineering Team, R&D, and comprehensive manufacturing facility, we are able to manufacture various sizes and styles of gaskets in a variety of materials.

We have a proven track record for designing and manufacturing custom solutions from 'cradle to grave'.

For more details please contact our Application Engineering Team.

Chat with us **LIVE**

Live Support

▶▶ **ONLINE**

Do you need help with an application?

Our Application Engineering team have many years of experience and are on hand via our live chat link to answer any questions you have relating to troublesome applications, training our shutdown support.

Research and Development

We continue to make significant investments in technology, in order to support future development of materials and to set new industry benchmarks for the evaluation of existing products.

Our World Class testing centre, based in West Yorkshire, UK ensures we remain at the forefront of innovation in the supply of sealing solutions for industries around the world.

We utilise state-of-the-art rigs, including the AMTEC and a 3MN gasket test rig.

Our test capabilities include:

- Gas Leakage
- Liquid Leakage
- Tensile Strength
- Creep Relaxation
- Stress Retention
- Compression and Recovery
- Flexibility
- Immersion Tests
- Shell Thermal Cycle Test
- EN1591
- EN13555

SHUTDOWN SUPPORT



During shutdown periods, time is the most valuable commodity, making good planning a must. To this end Flexitallic offer a complete shutdown support service.

“Our core philosophy is to not only supply the product, but also a complete solution, from design through to manufacture, supply, installation and on-site support.”

Phil Kelshaw
Managing Director

Shutdown Support

Major maintenance events require not just the supply of good quality products, but also practical support before, during, and after the shutdown.

We have developed a range of services, designed to support major refinery and process customers during shutdown periods.

These services include:

- Gasket specification review
- Pre-service assessment
- Dedicated team of Field Engineers able to visit site and offer design recommendations and solutions
- Access to web-based **Turnaround Manager™**, resulting in quicker turnarounds and cost savings
- Rapid response mobile service unit
- 24/7 manufacturing capability to produce an extensive range of gasket types
- Experienced Field Engineers available 24 hours
- Training available via The Academy of Joint Integrity to ensure correct gasket installation

For further information please contact enquiries@flexitallic.eu

CASE STUDY: ROMANIA



OMV Petrom Romania site required our assistance to install a critical gasket during a major shutdown.

Our engineer supervised the entire installation of a specially designed Thermiculite® Kammprofile on the main reactor flange, resulting in a leak free start up on a critical vessel during a major shutdown, which enabled the site to meet industry best practice according to ASME PCC-1-2010.

PROJECTS TEAM



Operating on a global basis and combining the resources of the Flexitallic Group, Flexitallic Projects offers a dedicated service to the worldwide engineering & construction industry.

Flexitallic
PROJECTS

Our specialist team offers a comprehensive service from initial tendering through to final product delivery. Drawing on the vast manufacturing capabilities within the Flexitallic Group, we are able to offer a wide range of high quality sealing products as well as first class technical support & advice.

Either working directly with EPC contractors or via our Allied Distributors, we are involved in a wide range of Projects across the world, including LNG and Gas Reception Plants, Petrochemical Refineries, Power Stations, Renewable Energy, GTL Plants, FPSO's and Chemicals Plants amongst many others. With our unrivalled global reach we are also able to offer local manufacturing and after sales support for further requirements once projects are operational.

Our global experience includes work on the following projects:

Suncor Energy – Firebag Project (Canada)
Shell Scotford Upgrade 1 (Canada)
Conoco Philips Surmont 2 (Canada)
Imperial Oil Kearl Lake (Canada)
In Amenas Gas Project (Algeria)
Shah Deniz (Azerbaijan)
Jamnagar Refinery & Petrochemical Complex (India)
Tengiz SGP/FGP (Kazakhstan)
Escravos GTL (Nigeria)
Sohar Refinery Project (Oman)
PNG LNG Project (Papua New Guinea)
Ras Laffan (Qatar)
Sadara Project (Saudi Arabia)
Rabigh Integrated Refinery & Petrochemical Complex (Saudi Arabia)
Yanbu Export Refinery (Saudi Arabia)

Flexitallic Projects can be contacted on: projects@flexitallic.eu or Tel: +44 (0) 1274 300 221

THE ACADEMY OF JOINT INTEGRITY



Flexitallic can offer speciality training and consultancy via The Academy of Joint Integrity.



“Fundamental to successful joint integrity is the training of the personnel involved in the process of inspection, assembly and tightening of bolted connections.

The Academy provides a range of cost effective tailored training courses to suit the needs of the client or contractor.”

Gary Milne
Technical Training Manager

Training Courses

The Academy of Joint Integrity offers Accredited and Awareness Training Courses to all personnel who are involved in the assembly and tightening of flanged bolted connections. Mentoring and assessment programmes also complement the training provision. All our training courses are given by industry professionals who themselves have current and relevant industry-based experience.

The Academy is a member of the Energy Institute and has contributed to the latest UK Oil and Gas best practice guidelines, specific to Joint Integrity Management. The Academy is also an active member of an ASME sub-committee, developing new initiatives for Pressure Boundary Bolted Flange Joint Assembly.

Academy training courses incorporate ECITB Mechanical Joint Integrity MJ110, MJ118, MJ119, Energy Institute, European (EN1591 part 4) and ASME PCC-1-2010 methods and procedures.

Location

The Academy has dedicated facilities in Aberdeen, Teesside, Humberside and West Yorkshire.

Training is also offered within our overseas operations.

Courses

Training can be delivered in a variety of ways:

- At the Academy, utilising our purpose built training centres
- At the clients premises, utilising mobile training rigs and equipment
- Via 'Blended Training' using a web based learning portal with a unique E-Learning programme.

Benefits

- Legislation compliance
- Motivated workforce with best practice skills
- Reduced costs with increased asset integrity
- Access to the latest technical standards and procedures
- Sealing and integrity modules providing greater knowledge
- Alliance and structured support from a world class technical / training team

For further information on the range of courses available visit www.academyofjointintegrity.com or call +44 (0)1274 860795



The Academy of Joint Integrity™



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About The Flexitallic Group

The Flexitallic Group is a global leader in specialised sealing solutions and products serving the oil and gas, power generation, chemical and petrochemical industries in emerging and developed markets. Focused on the upstream, downstream and power generation sectors, it has operations in France, the United States, Canada, Mexico, the United Kingdom, Germany, the United Arab Emirates, Saudi Arabia, Kazakhstan and China plus a network of worldwide licensing partners and distributors.

www.theflexitallicgroup.com