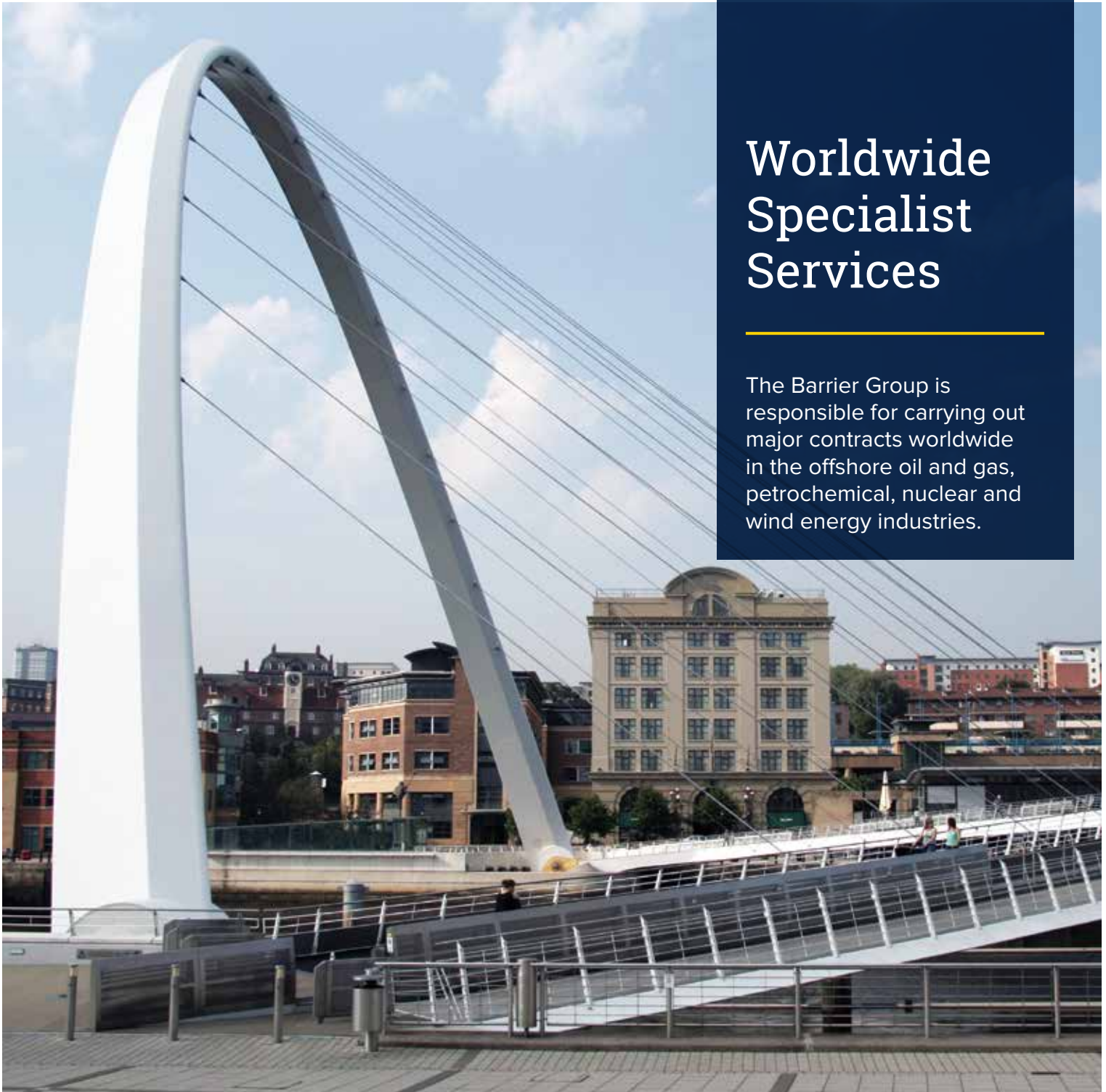


# BARRIER

## Worldwide Specialist Services

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The Barrier Group is responsible for carrying out major contracts worldwide in the offshore oil and gas, petrochemical, nuclear and wind energy industries.





## Barrier Painting and Scaffolding

The company was formed in 1975 to carry out painting of structures to be installed as part of the growing North Sea oil industry. Since then Barrier has carried out contracts totalling millions of square metres of surface protection, working for most major oil companies and on almost all the major projects in the UK sector.



### Scaffolding and Specialist Access

Scaffolding is supplied as a support service to the other divisions. The company also provides with a workforce of over 100 'Advanced' scaffolders, there are almost no projects too large for us to manage.

The company has a training policy in place, to train local tradesmen wherever we are working.

#### Access

Barrier also provide access equipment, including 'Alimaks' and mobile lifts. The lifts are used where local work to eg an onshore fabrication is required, but a full scaffold would be slow and expensive.

#### Containment

For environmental reasons it is often necessary to totally encapsulate a structure. Barrier has successfully worked in the most difficult situations. Working on nuclear submarines is demanding but has been most successful.

Similarly, working in northern Norway at -32 c painting oil storage tanks required a specialist sheeting system to maintain an environment suitable for painting.

#### Cradles

We use cradles where a full scaffold would be prohibitively expensive. These have been most cost-effective on large tanks where traditional scaffold is too slow and expensive. A good example was our coating of a nuclear test plant at Grenoble in France.

#### Mobile Access

The company also has its own mobile access platforms for work to ships' hulls etc.



# Painting and Coatings



## Powder Coatings

Barrier has a specialist facility comprising of 7,760sq. mtrs of covered area on a 2.05 hectare site dedicated to providing high quality coatings for all aspects of fabricated steelwork, pipework, vessels and tanker linings for offshore and onshore oil, and petrochemical industries.

The Powder Coating plant has a 13 mtrs long oven and can apply industrial powder coatings to CW6 specification on up to 2 mtr dia. pipe bends etc. These coatings include FBE, 3 layer polypropylene and polyethylene, and various flowcoats.

With our new Line Pipe coating plant, we can apply multi-layer FBE to up to 20" pipes.

Barrier is now the leading applicator for FBE in the UK for both onshore Gas lines and Offshore oil and gas.

The company can also provide Syntactic Polyurethane and Epoxy insulation coatings to subsea pipework, plus the on-site Field Joint coating.



## Thermal Spraying Aluminium

As members of the Thermal Sprayers Association, we have approved applicators for many clients and projects. Barrier has a highly trained workforce for the application of anti-corrosion coatings, ie zinc, aluminium, and 'alimags'.

With our TSA coatings still working well after nearly 40 years in the North Sea, we can say we have proved the longevity of these coatings, and our ability to apply them.

In the '90s, having convinced ConocoPhillips of the outstanding performance of TSA, they specified TSA for the whole Judy/Joanne platform (some 70,000m<sup>2</sup> in total). Apart from a few minor repairs, this system is performing well after 20 years, surviving the hostile environment of the North Sea.

Barrier has a large pool of applicators, as the TSA process itself is slow compared with paint spraying. This proved invaluable when we had to apply 7,000m<sup>2</sup> to the cellar deck of Nexen 'Buzzard' platform in 4 weeks. By careful planning, Heerema were able to continue work on 50% of the under-deck with a gap between us and their operatives. This enabled them to take the TSA coating off the critical path.

In addition we can apply powdered aluminium (PTSA) to mechanically prepared surfaces to the same adhesion levels as flame or arc applied TSA. This is a cost-effective way of treating repairs to TSA, and eliminates the need to gritblast around sensitive equipment.

This work has been carried out worldwide, including South Africa, Finland, Germany, Romania, Canada, and elsewhere.



## Glass Flake Lining

Barrier are approved applicators for most glass flake coatings and are experienced in the application of polyesters, vinyl esters and special glass flake polymers to various steel and concrete structures. Products are used extensively in tank lining systems, although various grades are available for refurbishment work and general maintenance.

A recent project was the lining of a low-level nuclear waste water treatment plant at Sellafield. The collection ducting needed treatment, which was carried out remotely using CCTV and extended spray guns.

Glass flake coatings are used where long-life is required, and are often used in place of TSA where a shorter life is acceptable. We have used them on bridges, and transition pieces for experiment offshore windtowers.

## Barrier Fire Protection

Barrier carries out passive fire protection contracts using all the leading and tested products, backed by supporting technical, and installation services from within the Barrier organisation.

Our fire protection systems comprise of both thick and thin film intumescent coatings developed for blast and jet fire resistance specifications. These may be pinned and metal meshed, or glass and carbon fibre cloth reinforced.

Vermiculite and Gunite coatings can be applied to structural steelwork for Petrochemical and Industrial Sites.

The company has also produced many PFP panels where it has not been possible to apply directly to the steel, or the fireproofing needs to be removable. We have also cast the epoxy into moulds to get a smooth, architectural finish.

Other systems applied include Jackets for valves and actuators, although a more robust method is the Benarx Box system. The box is jet-fire rated and is fully removable. It is easily reassembled onto the valve, unlike the jacket system. Benarx boxes can also be used for flanges and structural steel.

Fire Seals are used between decks on offshore modules, and can be solid or foam. We apply liquid seals (silicon foam), which can be almost any size or complexity.

### Quality

Barrier has been associated with the oil & gas industry for nearly 40 years, and is conversant with the exacting standards of the industry. Barrier Group companies

are registered to BS EN ISO 9001 2000. The company Quality Philosophy is readily available while the full scope of Quality Plans and Procedures are developed for specific projects.

These standards are carried across to our work in the Petrochemical, Marine, and Nuclear markets. All major projects have their own quality documentation, based on group-wide procedures.

The company has trained painting inspectors to NACE Level 3.

### Safety

Barrier Limited maintains a Health, Safety and Environmental Policy to ensure, as far as practicable, the health and safety of persons involved in the work carried out by the Company and to prevent damage to property in accordance with the guidelines laid down by the "Health and Safety at Work Act 1974" and other relevant legislation. The Company Health, Safety and Environmental Policy and Procedures are available to clients, management and employees.

For some processes, additional research into specific problems associated with dust emission, noise and waste handling has been carried out to reduce exposure to personnel and the environment.

All operations including projects will be executed in conformity to the Barrier

Limited Safety Manual which is available for inspection. It is the policy of the company to maintain the highest possible HSE standards, which will be upheld whilst engaged in the work on the project.

### Environmental

Barrier Limited has an excellent track record for working in an environmentally friendly way. The company has almost eliminated the use of expendable blasting grit, and manages its solvent use to keep this to the minimum.

The company works within all existing UK and European legislation. It also complies with any additional requirements of its clients.



## Services



### Epoxy Intumescent Coatings

Barrier Fire Protection uses systems which have been developed for blast and jet-fire resistance and where the thicknesses of coatings are tailored to provide fire resistance to specified failure temperatures with resistance to mechanical damage and long service life.



### Epoxy Precast Panels

Barrier has carried out the casting of epoxy intumescent for passive fire protection for some years and is experienced in panel-making for installation on site without the constraints required when a sprayed operation is used.



### Vermiculite Cement Coatings

Barrier are fully licensed installers of Cement Type systems such as Promat Fendolite & Carbolite Pyrocrete.



### Fire Seals

Fireseals can be mastics, fire pillows. We have extensive experience of all of these in Oil & Gas, Petrochemical and Marine projects.

## CASE STUDY

# Painting & Fireproofing – BP Clair Oil Platform

### PROJECT:

TSA, Painting and Passive Fire Protection

### LOCATION:

Wallsend, Tyne and Wear

### CLIENT:

AMEC

## TSA and Painting

### SCOPE:

Painting of over 100,000m<sup>2</sup> of structural steel.

Thermal Sprayed Aluminium (TSA) applied to 8,000m<sup>2</sup> of structural steel.

## Passive Fire Protection

### SCOPE:

Over 100 tonnes of Passive Fire Protection applied.

### VALUE:

In excess of £6M.



## Barrier Architectural

Barrier Architectural Services Ltd is an established subcontract services company of which was formed by its Commercial Director, Tony Scott and its Operations Director, Graham Fuller.

In August 2012 the company was acquired by the Barrier Group of Companies to complement and expand its existing portfolio of services and areas of expertise.

Barrier Architectural Services Ltd provides modular accommodation solutions, specialist Architectural, Insulation, HVAC Fit Out and Engineering Design Services to supplement the Specialist Coatings, Painting and Fire Protection discipline skills offered by its Parent Company Barrier Group Ltd, in providing a 'Single Point Responsibility' to its customers.

The Company specialises in providing a 'first class' flexible and cost effective fit-out to the ever changing demands of the Offshore Marine and Power Generation Industries in particular by drawing upon the respect and wealth of experience of its Business Unit Management, whom are proud to be associated and successfully managed in excess of £250 million of contracts for much valued customers.



## Services



### Modular Cabins and Products

Barrier Architectural Services's bespoke design and build modular solutions extends to Offshore living quarters, Naval and Cruise vessels as well as commercial buildings.

Accommodation can be provided in either a modular internal cabin or self-sufficient steel containerised unit. Cabins / units are complete with internal floor and final floor finishes, ducting in each module and can be accessible externally to passageways and come complete with lighting, small power, safety communication and data systems.



### Outfitting Services

Barrier Architectural Services provides subcontract Architectural, Insulation and HVAC Outfitting Services to the Defence, Offshore and Marine Industries. The company also specialises in the provision of Modular Accommodation and External Cladding systems, serving industrial and commercial sectors.

A multi-disciplinary approach enables the company to offer bespoke solutions to suit individual needs and requirements resulting in efficient, cost-effective systems.



### Engineering Design

Barrier Architectural Services Ltd engineering personnel have an established track record in the provision of design & engineering services to the Oil & Gas, Power Generation, Cruise Ship and Naval Shipbuilding industries.

In addition to our architectural engineering services, we also offer engineering management services covering the coordination of electrical & instrumentation, structural, piping and HVAC engineering to the previously mentioned industries.



### CASE STUDY

## Scaffolding and Passive Fire Protection – Sonatrac Gas Processing Plant

**PROJECT:** Scaffolding and Passive Fire Protection to Plant

**LOCATION:** Hassi Berkinie, Algeria

**CLIENT:** Brown & Root

### Scaffolding

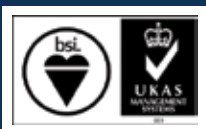
**SCOPE:**

Provided 6 advanced scaffolders to supervise local labour for duration of project. To work to UK standards in the Petrochemical Industry.

### Passive Fire Protection

**SCOPE:**

In excess of 12,000m<sup>2</sup> of Epoxy Intumescent Coating applied to steelwork.





## UK Total Solutions

Painting

Blasting

Pipe-Work Inspection

NDT/NDE

Welding and fabrication

Rigging and lifting

Insulation

CUI

Building Maintenance

Electrical Installation

Plumbing & Piping

Confined space work

General maintenance

Surveys and inspections

Safety systems

Fire Protection

Bolt Torque Testing

**Providing onshore and offshore services to the Oil & Gas, Petrochemical, Utilities, Construction, Facilities Management and Heavy Industries. We solve access problems through the application of teamwork and the considerable practical experience of our management.**

We are the rope access company of choice due to our expertise, capability and extensive industry knowledge. Our quality of work and close working relationship with our clients has ensured that our reputation is the best in the region.

As a member of the Industrial Rope Access Trade Association (IRATA) and having achieved the ISO 9001:2008 quality standard, we prove our commitment to both safety and quality.

### Why Total Solutions?

No other company has our experience, resources or capabilities

We have a vast amount of experience working throughout the UK and the Middle East providing a vast array of services to the major Oil & Gas companies.

Our success is underpinned by our robust management infrastructure, that is made up of highly experienced and professional individuals, and our practical approach to each project.

### Specialist Services

We provide unique solutions in the region. Our skilled technicians are deployed on a vast array of different jobs.

We undertake confined space, tank, flare stack, communication tower, overhead crane, offshore rig and under jetty works.

Our core skill is providing operational support and services both externally and internally, from cleaning to fabrication to application of products.

We pride ourselves on our quality outputs and value engineering capabilities that are inherent in everything we do.

We boast a client base that is second to none and have undertaken outstanding projects within the Middle East.

Total Solutions provides solutions and services in UK, Malaysia, Vietnam, Iran, Egypt, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.



## Services



### Painting & Blasting

Our rope access technicians carry out painting and blasting projects for the region's biggest companies.

Using rope access, we are able to access areas that cannot be reached by traditional methods. Our rope access technicians are skilled and experienced tradesmen, ensuring the works we undertake are to the highest quality standards.



### NDT and Inspections

Working on large scale projects for major clients, Total Solutions has a reputation second to none.

Our qualified rope access NDT technicians use the latest tools and technologies to provide our clients with rapid and accurate testing results.

We provide inspection services both onshore and offshore, servicing the Oil & Gas, Petrochemical, Utilities, Shipping and Heavy industries.



### Industrial Cleaning

Our staff are trained in the use of different cleaning methods, tools and equipment to ensure all our jobs are completed and completed properly.

Total Solutions undertakes the largest rope access industrial cleaning projects in the Middle East / UK.

Our value add to clients is our ability to provide a vast array of additional services that support the various maintenance needs of our clients.



### Maintenance & Repairs

Total Solutions has a pool of qualified and experienced tradesmen to undertake all your maintenance requirements.

We are able to undertake all your at height maintenance requirements, including painting, welding, cladding, electrical and plumbing works.

Having a proven track record for delivering on the largest projects in the Middle East, our reputation speaks for itself.



### Dedicated Training

Training is vitally important to Total Solutions. Training not only provides our staff with the skills they need, it also ensures quality of work for our clients and supports our needs as a business to continuously instill safety as our number one priority.



### Unique Solutions

Total Solutions has developed access solutions, providing clients with another choice.

Our temporary working platform is unique method of accessing large underside locations.

Installed rapidly by rope access methods, we can provide you with easy and safe access to the undersides of piers, jetties and bridges.



**“Quality and safety are our highest priorities, which we demonstrate through our ISO9001:2008 accreditation and IRATA Membership”.**

## Aquaseal Rubber

Aquaseal Rubber Ltd is a family run company which was formed in 1972 originally under the name Argus Rubber Engineering, initially manufacturing gaskets and strip rubber for the Keilder Dam project as well as the ship building and ship repair industries in Tyne & Wear.

Having gained knowledge and experience in the rubber manufacturing industry, we have over time expanded into the manufacture of all types of Natural Rubbers as well as Synthetic Elastomers i.e. Neoprene, Nitrile EPDM, Silicone etc.

We pride ourselves in the extensive range of products which we manufacture in house. Whatever your requirements in rubber or synthetic materials, ranging from cut gaskets to special fabrications, mouldings, extrusions and mandrel built hoses to suit all applications, we can make it.

Whether you are engaged in marine, defence, automotive, manufacturing, agricultural or food industries, we are confident we will have a solution for you.

The Aquaseal promise is for swift replies to all enquiries, providing maximum information on materials, and realistic lead times.

### Why use Aquaseal?

We are based in the North East of England where we offer a one stop shop for all your rubber, sponge and polymer component requirements.

Our reputation within the industry & our vision for quality, value and customer service is second to none.

Aquaseal Rubber Ltd offers solutions to all your requirements no matter how large or small.

Our policy of reinvestment in the latest machinery, techniques and materials has allowed us to remain at the top of our industry.

We offer full production facilities here in our Longbenton factory including sponge & rubber extrusions, pressing, kiss-cutting, sheet splitting, adhesive backing, mouldings, ship hatch and door seals.

All our products are available in wide range of materials suitable for any environment.

### Rubber we use

- Natural Rubber
- Neoprene
- Ethylene Propylene Diene Monomer (EPDM) Rubber
- Styrene Butadiene Rubber (SBR)
- Butyl Rubber
- VITON® Rubber
- Fluoroelastomers
- Silicone
- Buna N Rubber

## Our Products

Aquaseal have a vast and varied product range covering products of many materials, shapes and sizes for many different types of applications.

Our products are not just limited to the items within these pages. If you are interested in any type of product which is not listed, please feel free to contact us and we will be more than happy to discuss your exact requirements.



### Marine

Aquaseal Rubber Ltd has been manufacturing rubber hatch cover seals for more than 35 years for leading hatch cover suppliers world-wide.



### Hose And Tubing

Custom built, specially made to order rubber hose and assemblies.



### Gasket

If you need custom gaskets you have come to the right place. Aquaseal Rubber can manufacture almost any kind of gasket from your sample gasket or drawing, in quantities from one to more than one thousand.



### Extrusions

Extruded Rubber products are available in the following materials: Viton Rubber, Silicone Rubber, Fluorosilicone, Neoprene, EPDM, Hypalon, Butyl, Nitrile, SBR and Natural Rubber.



### Fabrications

Whatever your rubber fabrication needs, Aquaseal Rubber has the capability and professional expertise to solve the problem and fill the need.



### Polyurethane

Polyurethane is a tough but gentle alternative to rubbers, plastic and in many cases metals, where extra life is required in arduous applications.



### CASE STUDY

## Hand held scanner bumper cover

We were asked by INDIGO Software Ltd to attend a meeting about a rubber bumper they were looking at having made.

Initial quantities were 500 per year so we had the meeting and talked over the requirements. We pulled a price together for a new mould tool & item price based on the design.

The Customer was happy with our price & just a few design changes later we had the first sample off the machine.

The customer was very happy with the quality & product, The MD of the company took a few over to a conference in USA and the scanner manufacturer loved the rubber bumper. They commissioned a new tool to make the bumper for their US & European markets.

Since that day in 2009 we have made over 36,000 parts from the original tool.



# BARRIER

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