

Star Wheels



Manufactured by PolyGlobal

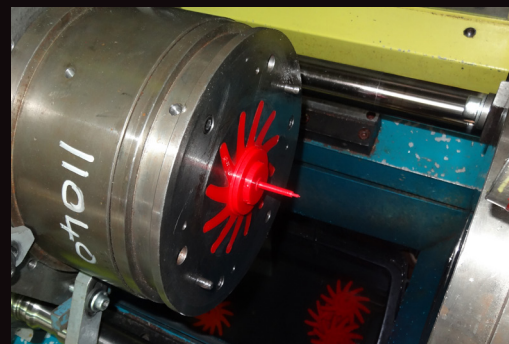
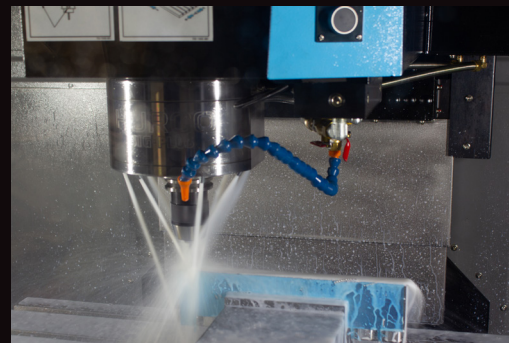
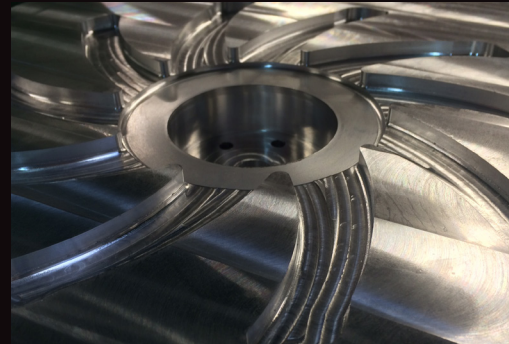
PolyGlobal is an industry-leading manufacturer of bespoke plastic mouldings. As a UK manufacturer, every aspect of manufacturing takes place at their site in Wakefield, West Yorkshire.

With over 35 years of experience and expertise in mould-making, injection and cast moulding, the company offers specialised production options in a wide range of polyurethanes and high end industrial engineering plastics.

Fundamentally focused on engineering applications and environments, PolyGlobal's mission is to provide market-leading moulded components and innovative engineering solutions that facilitate crucial applications in critical industries worldwide.

PolyGlobal's core service is the manufacture of bespoke parts and components to customer designs and concepts, for new and existing applications.

British manufacturing has a strong reputation for the highest quality, with products often achieving a premium rate. PolyGlobal are accredited members of Made in Britain.



Manufactured in Britain
Delivered Globally

'Working to **prepare, refine**
and **transform materials**,
PolyGlobal's components
are utilised across
all our industries'

Bespoke Designs

PolyGlobal supply material processing solutions into a wide range of industries internationally. Polyurethane star wheels are supplied for a number of purposes, and as a world-leading star wheel manufacturer, PolyGlobal manufactures them in a range of shore hardnesses and colours to suit a number of requirements and operations.

Whilst numerous existing designs are utilised across these industries, due to the variety in screened media and changes in customer designs and demand, PolyGlobal's bespoke production options are an essential aspect of its portfolio. PolyGlobal has invested continuously in both its software and machining infrastructure, to ensure it can offer full service production on new designs and modifications, from mould manufacture to component production and delivery.

Applications

Predominantly used in the agriculture, aggregate screening, recycling and waste management industries, star wheels are also referred to as separator wheels, de-stoning wheels, screening wheels or harvesting wheels.

'Our **screening stars** deliver **advanced performance results** in a wide range of applications across the world'



Agriculture

The Agriculture sector demands low cost solutions that perform reliably across the full preparation season, ensuring minimal downtime of soil preparation equipment, throughout the de-stoning process.

PolyGlobal star wheels are also used for crop harvesting and processing. As such, food compliant and softer materials can often be used which still meet the demands of the application but minimise damage to produce.

Recycling

PolyGlobal star wheels are used to sort or separate waste products by size in the Recycling industry, and come into contact with a wide variety of waste media.

Used as replacement parts in screening machines, the star wheels have to deliver excellent abrasion resistance, high rebound and high load capacity in this extremely aggressive environment. These are all critical characteristics offered by PolyGlobal's range of high performance polyurethanes.

Aggregate Screening

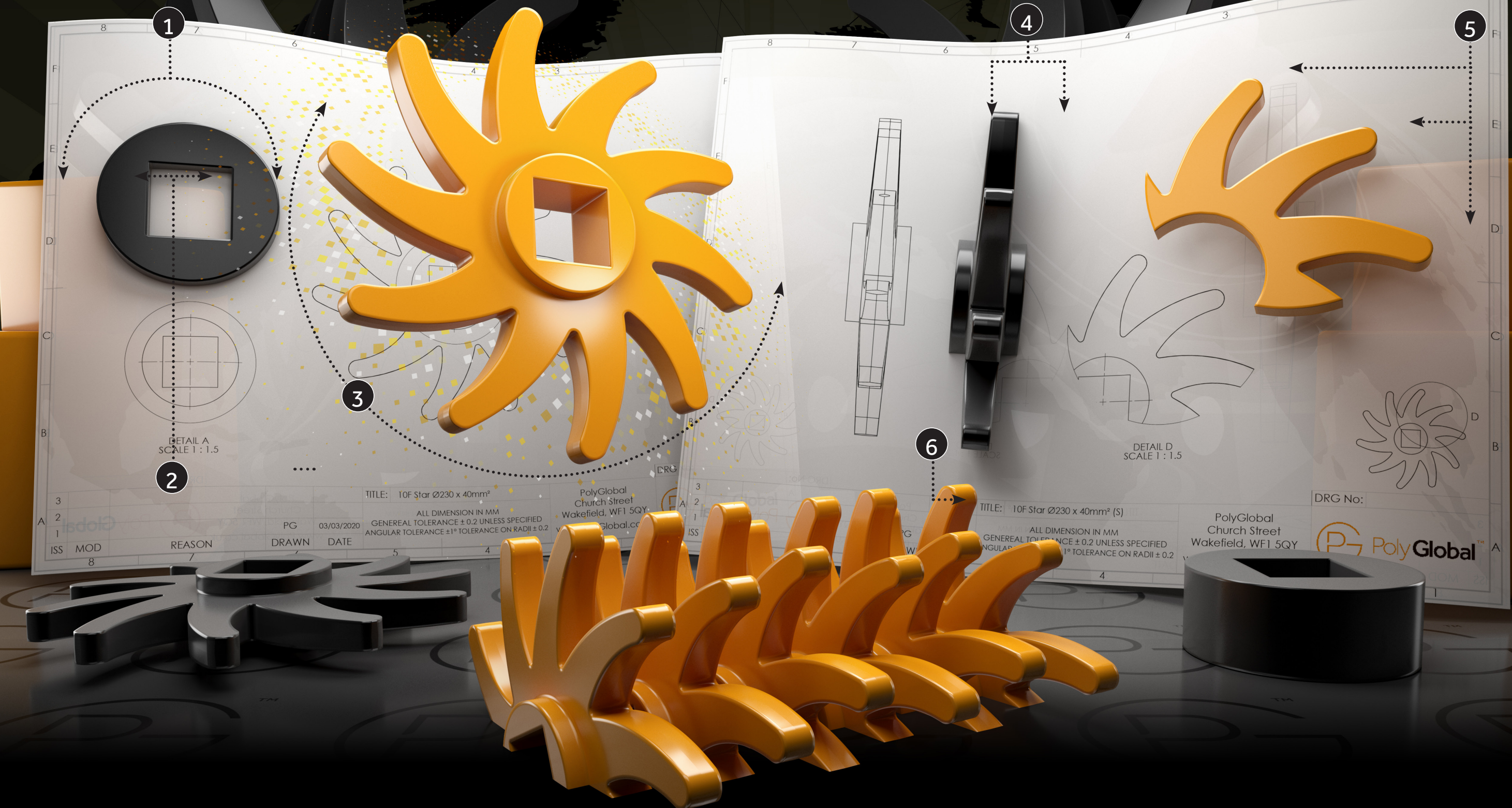
Star wheels used here are primarily involved in the processing of soil and similar materials ,to produce graded substrates such as screened top soil.

The stars are exposed to a variety of weather conditions, including temperature and humidity changes, and these must be factored into the material choices. Rapid turnaround of replacement and spare parts is also essential.

Bespoke Designs

Although many of PolyGlobal's star wheels are standard designs, that can be used as replacements for existing parts, there are sometimes requirements for non-standard designs or individual modifications to suit specific applications or environments.

Examples include: addition of cleaning fingers, changes to bore sizes, finger design, engravings and identification marks.



- 1** Boss Diameter

Typically, this is often a less critical measurement and is normally linked to the bore size. On a 40mm² bore, for example, the boss diameter will usually be around 70mm. It is important when considering the use of spacers and collars together with the star.
- 2** Bore Size

Screening stars are fitted to metal shafts. These are connected to a powered drive chain which rotates the shafts when in use. The bore size is usually square and dictated by the size of the shaft on which it is to be fitted (typically 32, 40 and 50mm).
- 3** Overall Diameter

This is normally taken as a nominal measurement from the tips of the fingers or the centre of the finger radii. Smaller stars could be around Ø160mm, with common aggregate screening stars usually in the range of Ø230-260mm.

- 4** Overall Thickness

This is the measurement from one face of the boss to the other, not the thickness of the finger and is usually around 40mm. Some users may require a + or - tolerance to enable the stars to fit the parent machine.
- 5** Finger Radius

The curved tips of the fingers are the most exposed area of the star and the radius helps maximise durability. The size of the radius will vary from star to star and some designs even carry an elongated tip.
- 6** No. of Fingers

This is the actual number of fingers a star has. This can range from 4 or 6 through to 14 or 18. Some designs may also include a number of elongated fingers designed for cleaning.

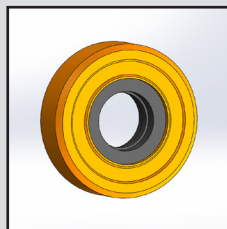
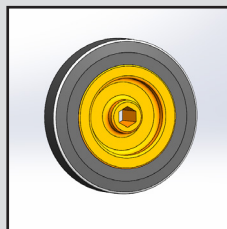
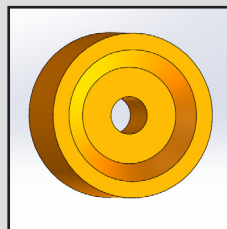
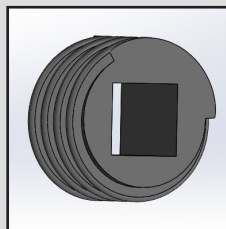
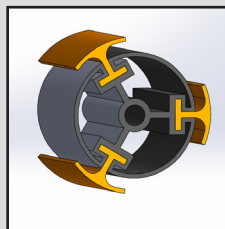
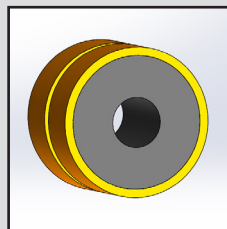
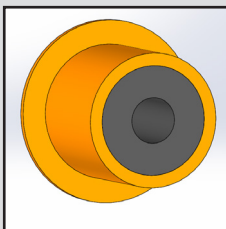
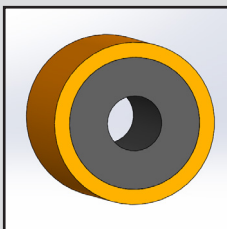
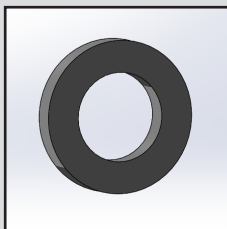
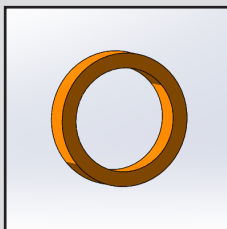
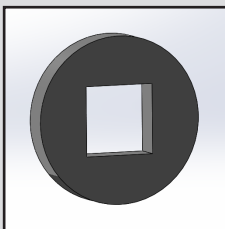
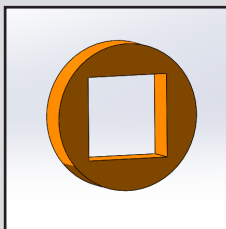
Additional Components

PolyGlobal manufacture a range of additional components to support the function of their star wheels.



Colour & Hardness

PolyGlobal star wheels are produced in a wide range of colours and hardnesses. Bespoke or colour matches can also be achieved.



Spacers

Spacers are often added to the star shafts to increase the distance between the screening fingers, this adjusts the grading of processed media.

These have a square thru hole matching the bore on the accompanying stars and so usually have 32, 40 or 50mm centres.

Usually made of the same material as the stars themselves, thicknesses start at 5mm. Outside diameters vary more significantly, starting at Ø70mm.

Collars

Collars are rings which fit over the star shafts to increase the distance between the screening fingers, this adjusts the grading of processed media.

Thicknesses vary from 10mm to 30mm and outside diameters are also supplied in a large variety of sizes.

It is important to use collars manufactured in the same material as the stars themselves to match the durability and wear resistance, and avoid additional maintenance.

Rollers

PolyGlobal offers dual-hardness, standard and overmoulded roller options. These are often supplied as flanged rollers or have housed bearings.

Polyurethane outside coatings offer the wear resistance and durability required for demanding applications.

Within this offering there is an extremely broad variety of requirements, and as such parts are usually supplied as bespoke options in a variety of dimensions.

Colours



PolyGlobal has a vast range of standard colour options including the above.

We are also able to source specific RAL colours upon request, depending on the type and quantity of parts required.

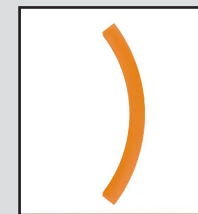
Additionally, PolyGlobal offers UV resistant and flame retardant additives.

Shore Hardness



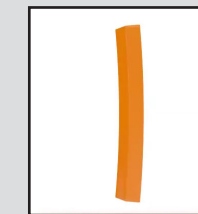
**SHORE 55A
MEDIUM
SOFT**

A soft material which only just maintains its own form



**SHORE 90A
MEDIUM
HARD**

A semi-rigid material that requires some force to bend



**SHORE 60D
HARD**

A hard & rigid material that is highly resistant to compression

Materials

PolyGlobal supply and manufacture parts in a wide range of high performance materials, specifically designed to suit a diverse array of applications.

Polyurethanes

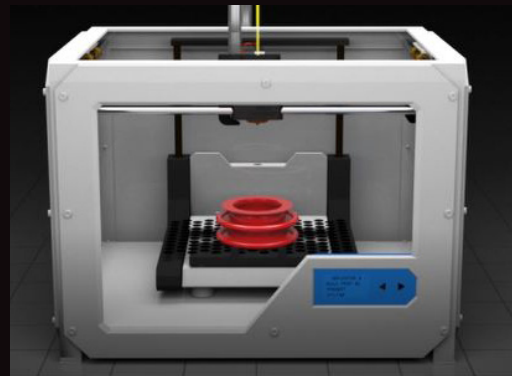
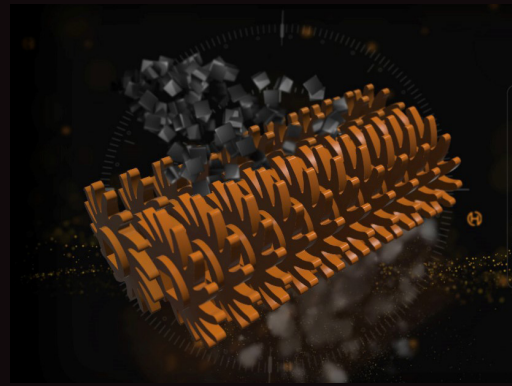
PolyGlobal's key option is a rubber-like material with high mechanical properties. Toughness, flexibility and resistance to abrasion, make it the ideal choice for a number of star wheel applications. These are especially important when stars are used in aggregate screening, as a degree of flex in the part allows larger stones to bounce away from the fingers, rather than becoming trapped.

Polyesters

Within the polyurethane family, Polyester grades are usually chosen for star wheels, as they are specifically suited to aggressive abrasion processes. They generally exhibit a good balance of physical properties, and due to the composition of the material, are often more economical options than the other two main polyurethane grades. However, their low hydrolytic stability means that they are not ideally suited to water based environments or high humidity.

Glass Filled Nylon

The glass reinforcement fibres within PA6 or PA66 causes the material to have higher compressive strength and rigidity, as well as improved frictional characteristics and extremely good resistance to abrasion. These combine to make this an excellent material option for star wheels used in cutting or slitting processes or where fully rigid parts are required.



Testimonials

"As a start up business we have searched for dynamic (but real), providers to help manufacture our product.

PolyGlobal have surpassed our expectations with design and development support, as well as manufacture, which has allowed us to improve the functionality of the system.

It's been a pleasure working with them and we look forward to further developments in the future."

Nuvech Solutions - UK

"After we approached PolyGlobal for producing stars for us, it didn't take long before we had the end product in stock.

Remarkable and precise service!

We are looking forward to future collaboration with PolyGlobal"

Spesial Teknikk- Norway



Quality Assurance

All PolyGlobal employees, across all management and operating levels and departments, share in this responsibility. We therefore commit ourselves to exceed the expectations of our customers in the quality of our products.

Our commitment to quality is exemplified through our ISO 9001:2015 certification.

ISO 9001
BUREAU VERITAS
Certification



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Environmental Policy

At PolyGlobal our commitment to responsible environmental action is one of our main company priorities.

We continually strive to improve our performance in all our environmental operations and activities, and where possible we work with our business partners to achieve this goal.

Visit www.polyglobal.co.uk/about-us for more information





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