ENGINEERED PRODUCTS FOR THE CONSTRUCTION, AGRICULTURE, QUARRYING & MINING INDUSTRIES

NYLACAST
ENGINEERED PRODUCTS

VERSATILE PRODUCTS WITH PERFORMANCE & EFFICIENCY IN MIND

Custom manufactured from initial chemistry to end components, Nylacast Engineered Products help to deliver increased application safety, performance and efficiency with lower whole life costs.

Nylacast Engineered Products help to reduce machine downtime and maintenance need through being low weight, low friction, self-lubricating and corrosion resistant.

ABOUT NYLACAST

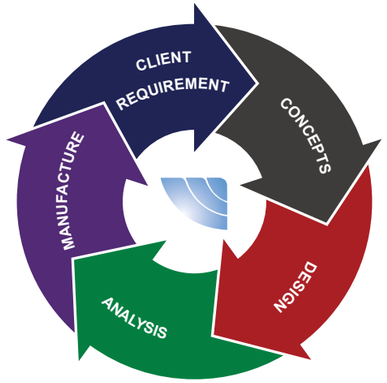
Nylacast is a world-leading manufacturer of engineering polymers and products.

Holding over five decades of engineering excellence and know-how, Nylacast employs passionate engineering teams across international sites (UK, USA, South Africa and China), and is committed to meeting the needs of critical applications within key global industries. Nylacast's unique engineering and R&D capability provides full engineering solutions from initial concepts and raw chemistry, through to final products.

The unique material range developed by Nylacast is proven to improve performance whilst reducing maintenance and running costs; often recognised as the ideal replacement to traditional engineering materials such as steel, cast iron, bronze and ceramics.

KEY FACTS

- Established in 1967
- State of the art manufacturing facilities
- Worldwide locations
- ISO14001: 2008, ISO 9001:2008, ISO29001:2011
- FPAL registered
- In-house Research, Development & Testing centre
- Award winning engineering academy
- Industry specific sales and engineering teams
- Fast route to market from concept to completion
- Consignment/schedule ordering
- Kanban and JIT systems



INDUSTRIES SERVED

Custom manufactured for specific client requirements, Nylacast Engineered Products are widely featured within key equipment for the following industries


AUTOMOTIVE


AVIATION


CIVIL ENGINEERING


CONSTRUCTION & AGRICULTURE


ENERGY, OIL & GAS


FOOD & BEVERAGE


MARINE & DEFENCE

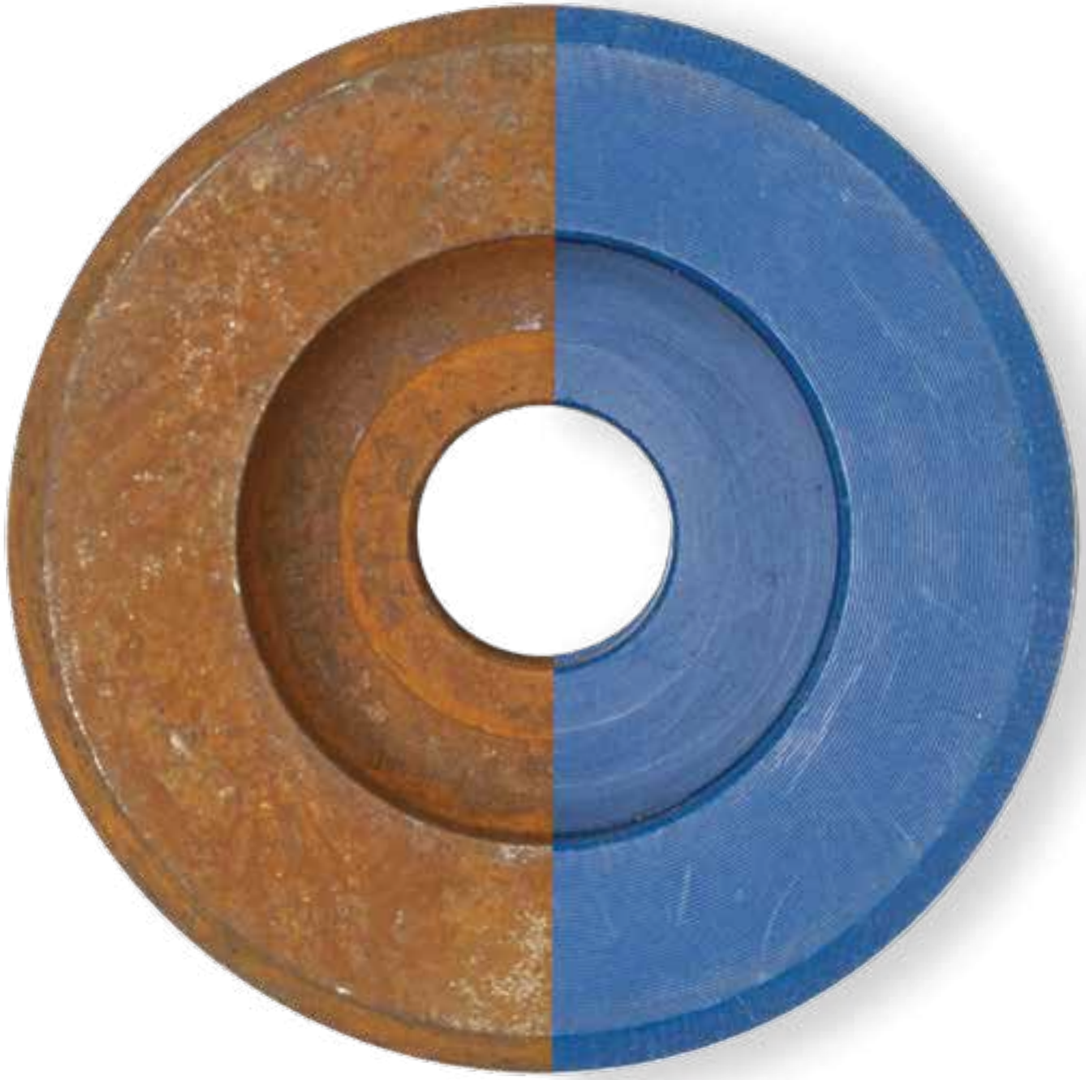

PACKAGING


PHARMACEUTICAL


QUARRYING & MINING


RAIL


RENEWABLES



MATERIALS TECHNOLOGY

Nylacast Engineered Products are created from initial chemistry to end component using unique materials technology developed through more than fifty years of field experience in design, testing and material selection.

Premium chemicals and state of the art manufacturing facilities are coupled with engineering know-how to produce high quality engineering polymers capable of delivering increased performance and replacing traditional materials such as steel and bronze.

In addition to custom formulated materials for more demanding needs, Nylacast offer a wide range of standard grades renowned for being low weight, low friction, self-lubricating, corrosion resistant, highly versatile and dimensionally stable.

NYLACAST'S WORLD RENOWNED RANGE OF STANDARD GRADES INCLUDES

- Nylube
- Oilon
- Aquanyl PA 6/12
- PA 6 Natural
- Moly
- H.S Blue
- Impact
- CF150
- CF160
- CF306
- Nylube GF (glass filled)
- Nylastat (ATEX approved)

ADDITIONAL MATERIALS INCLUDE

- Acrylic
- Acetal
- Polycarbonate
- Polyurethane
- PTFE
- POM
- PET
- PEEK
- Polypropylene
- Nylon 66
- Polyethylene
- PVDF
- PVC

BENEFITS & ADVANTAGES

COST SAVING
Lower whole life costs are achieved in addition to increased efficiency through reduced frictional losses and lower power requirement.

MAINTENANCE REDUCTION
Self-lubrication and corrosion resistance results in longer lasting materials with highly reduced maintenance need and machine downtime.

CORROSION RESISTANCE
Corrosion resistant materials technology protects against the arduous industry environments.

LIGHT-WEIGHTING
Nylacast Engineered Products are typically 1/7th the weight of an equivalent steel product, helping to reduce overall equipment weight.

WEAR REDUCTION
Low friction materials technology results in high resistance to wear and abrasion when in application.

SELF-LUBRICATION
Reduced and often eliminated need for additional and costly grease and lubricants through the use of low friction materials technology.

INCREASED SAFETY
Light-weight results in lighter loads being handled by personnel during installation and servicing, eliminating the need for lifting equipment.

CUSTOM SOLUTIONS
Engineered products custom developed for specific application need from initial chemistry to end product.

EQUIPMENT

Custom manufactured for specific client requirements, Nylacast Engineered Products are widely featured within various off highway and industrial equipment including

ACCESS

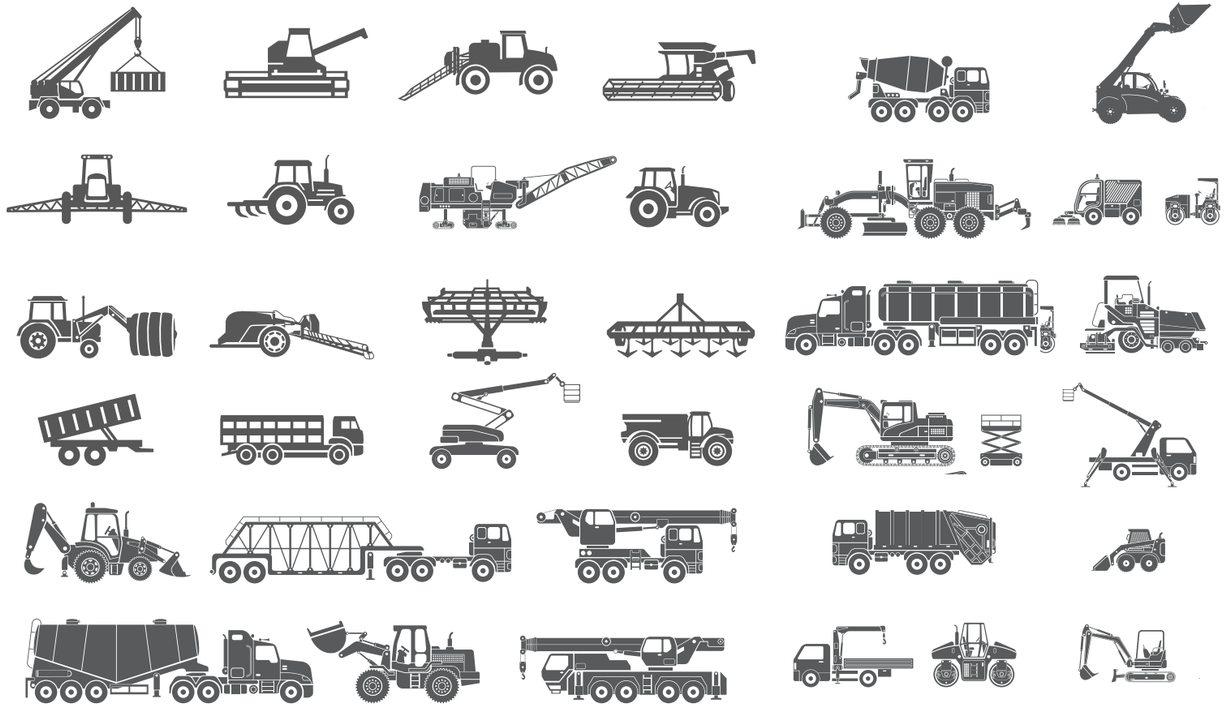
AGRICULTURE

EARTHMOVING

LIFTING

MATERIAL HANDLING

MATERIAL PROCESSING



SOME APPLICATIONS FEATURING NYLACAST ENGINEERED PRODUCTS

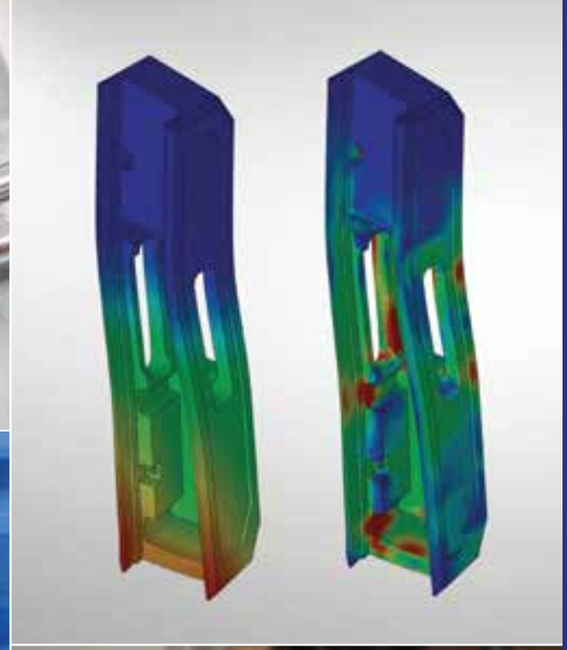
CUSTOM COMPONENTS

As leaders in the design and manufacture of engineering polymer solutions, Nylacast work closely with customers worldwide, delivering significant increases in product performance, safety and efficiency.

With full control of the manufacturing process from design and initial chemistry to end products, Nylacast are able to offer custom manufactured components based around specific application and industry requirements.

NYLACAST OFFER A RANGE OF IN-HOUSE DESIGN, TESTING AND MANUFACTURING SERVICES INCLUDING

- Material selection
- Full material characterisation
- Full tracibility from concept to end components
- Custom formulated materials
- Testing to ASTM/ISO
- FEA, CAD, CAM
- Material integration



CUSTOM COMPONENTS

ROPE HANDLING & PROTECTION

The use of Nylacast rope handling products allows users to benefit from reduced or eliminated maintenance need and cost. Improved lifting and health & safety is also achieved through reduced rope damage.

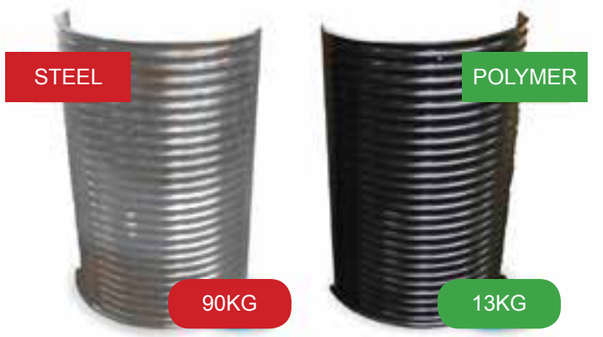
Proven in industry for decades, Nylacast rope handling products are corrosion resistant, lightweight and low friction, this results in increased safety for personnel when operating equipment. Greater efficiency and cost saving is also achieved through these qualities extending the life of mating ropes with reduced maintenance need and replacement.

NYLACAST WINCH SPOOLING SHELLS

- Low mass
- Easy installation, typically 1/7th the weight of a steel grooved shell
- Less inertia on high speed winches
- Requires no painting, protection or preservation
- Delivers excellent spooling in critical cable conditions
- Reduction of knifing in, jerking and snagging
- Reduction of maintenance and lubrication
- Custom made to suit application size and needs

NYLACAST SHEAVES & PULLEYS

- Reduced component weight resulting in increased lift capacity
- Allows for improved lifting
- Requires no painting, protection or preservation
- Provides increased rope life
- Reduces maintenance need and costs
- Easy installation through light-weight
- Custom made to suit application, available from 25mm - 3000mm diameter
- Sheave segments available for larger requirements



ROPE HANDLING & PROTECTION

BIG FOOT

The Nylacast Big Foot crane outrigger pad has been utilised as a key safety product for major crane hire companies and operators over the last four decades. Nylacast Big Foot was developed in conjunction with industrial demand, where a need arose for a reliable, strong and safe crane outrigger pad. The pad needed to be made from tough, affordable material, strong enough to withstand heavy load yet still be light and easily manoeuvrable by users.

Stable support for crane outriggers is essential for safe operation. With Nylacast Big Foot you can be sure you are using the correct tool for the job.

Unfortunately the capsizing of cranes can occur and cause a significant injuries and fatalities. Many of these accidents are caused by operators using inappropriate materials or the use of no crane pads at all.

When weighing up the small cost involved in providing a stable support for the outriggers and preventing damage to the ground surface, in comparison to the high capital equipment costs involved with cranes, Nylacast Big Foot makes perfect sense.

FEATURES & BENEFITS OF NYLACAST BIG FOOT INCLUDE:

- Extremely strong & hard wearing
- Lightweight
- High visibility yellow
- Rope handles for ease of transport and positioning
- Elimination of damage to ground surfaces
- Corrosion resistant with no need for coating or external protection
- Improved replacement for wood
- Range of sizes available

PE500

Fig.1: 3080 N Load

BIG FOOT

Fig.2: 3080 N Load

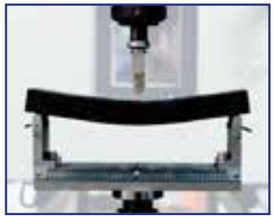


Fig.3: PE500 Recovery

Fig.4: Big Foot Recovery

To demonstrate the strength and recovery of Nylacast Big Foot in comparison to standard PE crane mats, two tests were conducted utilising the same size sample of each material, 250mm x 50mm x 25mm.

Each material was put under the same load (3080 N), this resulted in the PE 500 Confetti material having 25mm flex (Fig.1), with Nylacast's Big Foot material only flexing 6.5mm (Fig.2). Each sample was then photographed after 5 seconds of the load being lifted from the pad sample. Whilst the PE 500 Confetti remained curved and deformed (Fig.3) the Nylacast Big Foot material recovered instantly with significantly less deformation (Fig.4). A second test was conducted to investigate how much load is needed for Nylacast's Big Foot material to flex to 25mm. This resulted in being 11,802 N which is 3.8 times more load than the 3080 N it took to flex the PE 500 Confetti to 25mm.

The results from this test should only be used to serve as a comparison between materials. The tests were conducted in laboratory conditions, real life environment, equipment and load conditions may vary from user to user.

PHYSICAL PROPERTY	ISO/ASTM SPECIFIED METHOD	BIG FOOT	PE 500
Density, g/cm^3	ISO 1183	1.140	0.951
Izod, kJ/mm^2 - Sample Type A	ISO 180	6.5	>30
Tensile Strength, MPa	ISO 527/ASTM D638	75	28
Breaking Strength	ISO 527/ASTM D638	82	38
Modulus of Elasticity MPa	ISO 527/ASTM D638	3700	1350
Torsional Stiffness @ 23ºC, as Flexural ***Modulus,*** MPa	ISO 178	2925	350
“ , @ -60, -40, +50 +100ºC as ***Flexural Modulii***, MPa	ISO 178	3604	-
		3224	700
		2157	-
		1977	-
Shore Hardness D @ 23ºC	ISO 868	80	62

BIG FOOT

WEAR PARTS & SLIDERS, BUSINGS & BEARINGS

PIPE & HOSE CLAMPS
SPACERS & MOUNTINGS

GEARS & SPROCKETS

FURTHER APPLICATIONS & PRODUCTS

- Support rollers
- Hydraulic caps
- Sensor housings
- Pressure reservoirs
- Lead screw blocks
- Plough guides
- Piling dollies
- Mast slides
- Concrete forming blocks
- Track rollers
- Chain guide
- Chain sprockets / pulleys
- Pinion gears
- Racks
- Worm drives
- Anti roll bushes
- Skid plates
- Side plates
- Scrapers
- Plough blades

QUALITY

Nylacast inspection departments are fully equipped with the latest coordinate measuring machines, computer controlled surface finish and gear profile testing machines as well as a comprehensive range of traditional measuring instruments.

As quality is considered to be a critical factor in the success of our products, we operate to some of the leading and highest quality standards available in industry today.

NYLACAST EXCEED CUSTOMER EXPECTATIONS WITH

- Full traceability
- Initial sample inspection reports
- Certificates of Conformity
- Certificates of Analysis
- Production Part Approval Process
- Advanced Product Quality Planning
- MSA / Gauge Repeatability and Reproducibility (GR&R) Studies
- PFMEA / SPC / Process Control Plans & Flow Charts
- ISO 9001
- ISO 14001
- ISO 29001

ENQUIRE

To discover how Nylacast Engineered Products can create value for your projects and products, simply contact our Sales & Engineering team.

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NYL_CAQM_0718