

PLASTIM

# OFFSHORE OIL & GAS

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**Offshore lifting and deployment solutions. Plastics parts for port cranes, offshore cranes, deck cranes, davit cranes and winches:**

**Engineering plastic rope sheaves and rope pulleys**

Machined from modified cast nylon shapes, OmniAmid crane sheaves exhibit high durability and performance through a combination of key mechanical properties designed to significantly improve rope-life and rope support:

*Cable friendly properties help increase rope-life by:*

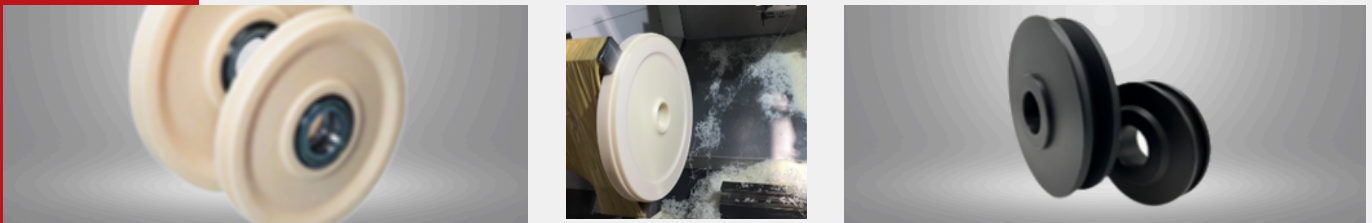
- Groove cushioning (when in contact with rope-strands)
- Lower rope-groove contact pressure (reduced pressure between the cable and sheave)
- Minimal wear on the outer layer of rope-strands

**OmniAmid PA6G - OmniAmid PA6G-MoS2 - OmniAmid PA6G-HR (self-lubricating)**

*Key characteristics for offshore lifting applications:*

- Lightweight, load bearing, fatigue and impact resilient
- Weather and corrosion resistant
- Cylindrical roller bearing insertion and retention solutions

*Note, OmniAmid sheaves can also employed in wireline operations*



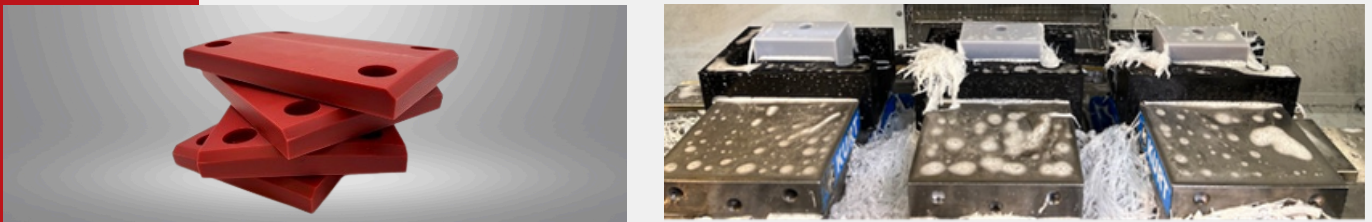
**Engineering plastic wear pads / slider pads / boom pads (sliding elements)**

Machined from self-lubricating cast nylons, PETP and PE plates, these low-friction, wear-resistant plates provide high pressure-velocity capabilities. Used in telescopic mechanisms to mitigate wear on mating surfaces and provide for smooth extension.

**OmniAmid PA6G-OIL - OmniAmid PA6G-WFL – OmniAlite TX-LF (PETP) – UHMW-PE (PE1000)**

*Key characteristics for sliding applications:*

- Exceptional wear resistance and sliding properties
- Low coefficient of friction (self-lubricated)
- Reduces chatter and stick-slip behaviours
- High limiting PV



**Engineering plastic deployment sheaves rollers and fairlead sheaves**

Machined from modified cast nylon shapes, OmniAmid marine sheaves reduce crown and cable wear during hose and cable deployment.

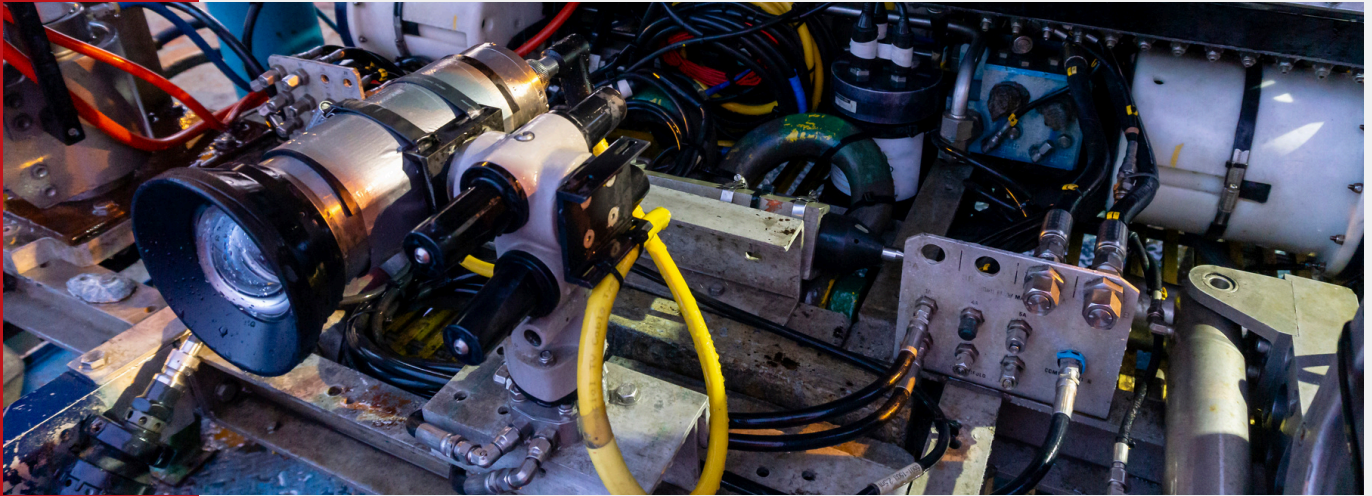
**OmniAmid PA6G - OmniAmid PA6G-MoS2 - OmniAmid PA6G-OIL**

*Key characteristics include:*

- High tensile and compressive strengths
- Fatigue and impact resistant
- Lightweight, tough and corrosion resistant



**Thermoplastic parts for remotely operated vehicles (ROVs) and their launch and recovery systems (LARS):**



**Large diameter plastic sheave wheels, cable-lay equipment / umbilical over-boarding sheave segments**

Machined from modified cast nylon near-net-shapes in large diameters to suit the application's minimum umbilical bend radius.

**OmniAmid PA6G-MoS2 - OmniAmid PA6G-HR (self-lubricating)**

*Key characteristics include:*

- Low coefficient of friction (excellent wear resistance)
- Highly impact resistant
- Lightweight and corrosion resistant
- Size customisation (large diameters and segmented diameters)



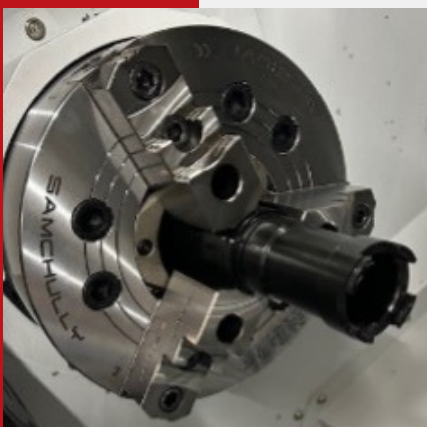
**Nozzles for ROV thrusters**

Machined from coloured cast nylon tubes to help improve ROV manoeuvring performance during underwater propulsion.

**OmniAmid PA6G (yellow, black, and blue)**

*Key characteristics include:*

- Lightweight (near neutral buoyancy)
- Corrosion and marine growth resistant
- Size customisation (tube production and machining up to 750mm Ø)



**Plastic underwater housings for pressure compensators, subsea sensors, sonar equipment and subsea cameras**

Machined from acetal and glass-filled polyamide shapes, these thermoplastic watertight enclosures providing corrosion resistance, low water absorption, high strength, and high rigidity.

**OmniAcetal-C (POM-C white, black, and blue) – Akulon 66 (GF30) – PEEK**

*Key characteristics include:*

- Lightweight (high strength-to-weight / stiffness-to-weight characteristics)
- Good dimensional stability
- Excellent machinability (tight tolerances and smooth finishes)
- Good electrical insulating properties

## Thermoplastics for subsea connection / coupling systems (stabs, tree systems, umbilical termination, control modules, and subsea distribution units):



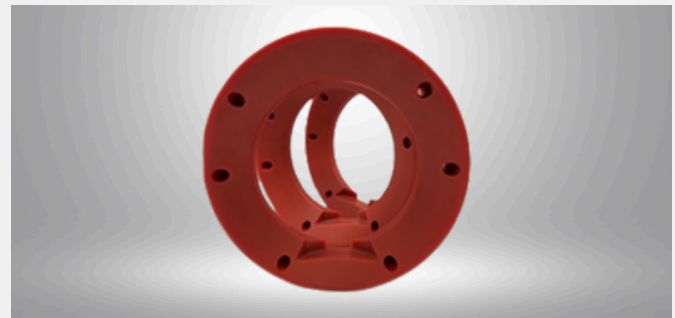
### Engineering plastic adapters and alignment / protective guides (funnels, nose cones and collars)

Machined from modified cast nylons and acetal stock shapes, these parts are used to guide and align connecting equipment and protect critical areas across wellheads, trees and manifolds.

#### OmniAmid PA6G (coloured) - OmniAcetal-C (POM-C)

*Key characteristics include:*

- High tensile and compressive strengths
- Fatigue and impact resistant (reduced risk of collision damage)
- Corrosion and marine growth resistant



### Engineering plastic torque buckets and bucket plugs

Machined from modified cast nylon near-net-shapes, ROV buckets (receptacles) provide docking, torque reaction and alignment. Bucket plugs help prevent blockage of drive buckets.

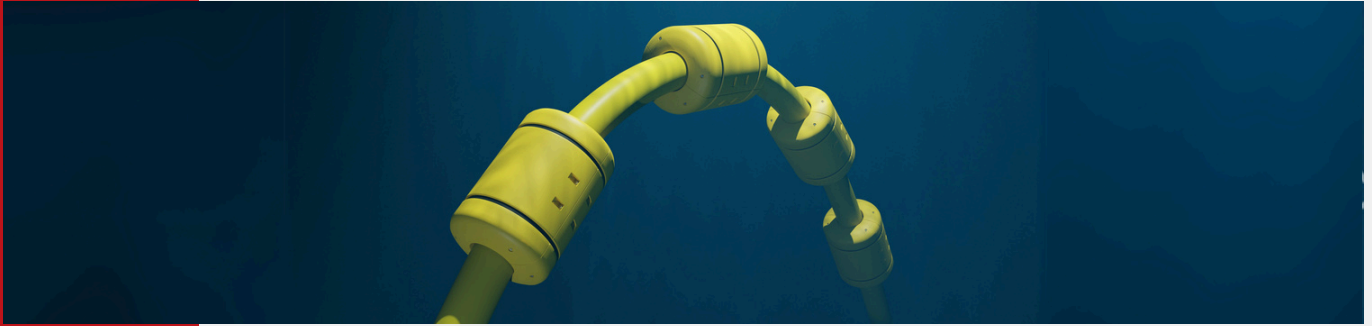
#### OmniAmid PA612G (coloured) - OmniAmid PA6G (coloured)

*Key characteristics include:*

- Lightweight (around 1/7th of the weight of a steel)
- Corrosion and marine growth resistance
- Fatigue and impact resistant
- Coloured for identification and subsea visibility



## Thermoplastic components for subsea clamping systems



### Nylon bellmouth guide (chain & cable protectors and pulling-head protection)

Machined from modified cast nylon, the segmented guides protect the cable / chain and the steel bell-mouth assembly, whilst acting as a centraliser for final location of the riser-head.

*Key characteristics include:*

- Excellent wear resistance
- High impact resistant
- Lightweight and corrosion resistant
- Size customisation (large, segmented diameters)

### Nylon buoyancy clamping segments

Machined from modified cast nylon tubes (spun cast):

#### OmniAmid PA6G (modified)

*Key characteristics include:*

- High tensile and compressive strengths
- Improved creep behaviour
- Lightweight, tough and corrosion resistant



### Engineering plastic pipeline system components

Subsea pipelines provide the means of transporting hydrocarbons from subsea wells. Machined plastic parts play a key role in pipeline system construction, installation and protection. The applications are numerous, but components include pipe support & transportation rollers, wear-pads and PIP centralisers\*.

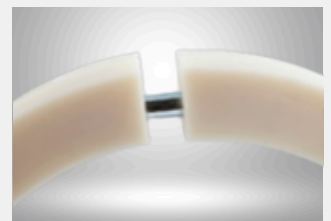
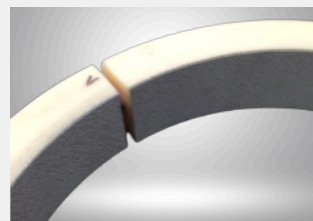
#### OmniAmid PA6G - OmniAmid PA6G-WFL - OmniAmid PA6G-HS

\*To allow sleeved pipeline concentricity, pipe-in-pipe centralisers (PA6G rings) carries the flowline inside the carrier pipe, providing load transference and compression protection for the annulus thermal insulation.

*Key characteristics include:*

- High mechanical strength (compressive, tensile and flexural)
- Low friction coefficient with excellent wear resistant properties
- Component sizes tailored to pipeline dimensions

*Note, thermoplastics are also used in riser centralisers*



## Thermoplastics for downhole application (engineering and high temperature plastics)



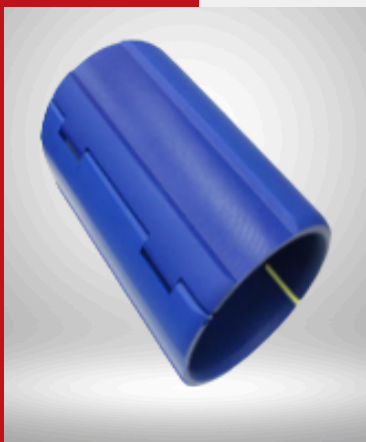
### Thermoplastics for Drifting (casing and tubing drifts)

Pipe Drifts (tubing drifts) measure the eccentricity of the inside wall of a pipe. Roundness measurements are performed by passing a cylindrical mandrel through the length of the pipe to detect occlusions.

**OmniAmid PA6G-OIL - OmniAmid PA6G-WFL – PTFE - UHMW-PE (PE1000)**

*Key characteristics include:*

- Excellent wear resistance
- High impact resistant
- Lightweight and corrosion resistant



### Thermoplastics for friction reducer Casing Centralisers (casing and tubing drifts)

Machined from lubricated cast nylon 6, these bespoke Centralisers are designed to reduce friction, eliminate casing wear, reduce torque, and drag in the drill string. Hinged Centralisers exhibit the same benefits whilst allowing fast mid joint fitting.

**OmniAmid PA6G-OIL**

*Key characteristics include:*

- Excellent wear resistance
- High impact resistant
- Lightweight and corrosion resistant

### Thermoplastics for sealing technology / solutions

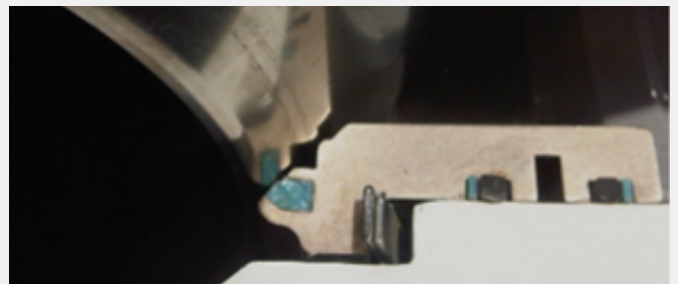
Plastic valve seat elements and seat inserts, seals, and backup rings (anti-extrusion rings). Valve seat-inserts function by ensuring proper sealing between the valve and the valve body, uniformly distributing the seating stress. In ball valves, the polymer seat inserts are elements mounted inside a metal seat ring and perform the same sealing function.

Supplied in tube form, from a range of modified polymer seat materials:

**PTFE – filled-PTFE – PEEK – filled-PEEK - OmniAmid PA6G - OmniAmid PA612G - OmniAcetal-C**

*Factors to consider when selecting a polymer for seats and seat inserts:*

- Dimensional stability to ensure the seat retains its shape for sealing and performance
- Low coefficient of friction to keep stem torque at a minimum
- Low coefficient of thermal expansion for shape retention when temperatures change
- Wear resistance for a service life
- Chemical compatibility (resistance to degradation from the process fluid)
- Low moisture absorption to prevent dimensional changes



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