PRODUCT INFORMATION

PLASTIC ENGINEERING MATERIALS

ABOUT US

Davis Industrial Plastics has been trading since 1986, based in Crawley for all that time. The range of goods supplied covers many fields of use with the major two being tube and fittings for pipe work installations and the supply of engineering materials in various stock forms. Goods are mainly delivered on our own vehicles, which cover most areas in the South East on a daily basis. BS5750 registration was obtained in 1993 (now recognised as ISO 9001) and continues to provide the framework for effective and improving service.

We are a real stockist in the traditional sense holding over £400,000 of stock at any time of which at least £150,000 is made up of semi finished plastics, and another £50,000 of Acrylic (Perspex) and polycarbonate glazing sheet stock. Items outside the held stock range can be obtained quickly and efficiently due to our close working relationship with the manufacturers.

We operate two saws able to cut to size stock sheets, block and rod and work closely with local fabricators for any machining to specification requirements.

SEMI-FINISHED ENGINEERING PLASTICS

Engineering plastics now represent an important family of materials to help engineers and designers solve problems previously needing metals. Plastics offer many advantages, including lightweight, corrosion and chemical resistance, good wear properties, electrical and thermal insulation and ease of processing. Although injection moulding is usually the economic solution for large production runs, semi finished stock shapes (i.e. rod, tube and sheet form), represent the ideal alternative for smaller and prototype production runs.

NYLON - Extruded *(Polyamide PA)*

Within the Polyamides, commonly referred to as 'Nylons', we distinguish different types. The differences in physical properties which exist between these types are mainly determined by the composition and the structure of their molecular chains.

ERTALON® 6SA *(PA6)*

A general purpose grade for mechanical construction and maintenance with great toughness and resilience, suitable for use under impact loads & at low temperatures.

ERTALON® 66SA *(PA66)*

Compared with PA6, PA66 has a higher melting point, better mechanical properties and greater hardness. Because of its lower water absorption it is more suited for components that have to meet close tolerances, well suited for machining on automatic lathes.

ERTALON® 4.6 *(PA4.6)*

Compared with PA6 and PA66, PA4.6 has a better retention of stiffness and creep resistance over a wide range of temperatures. Because of this it is more suited to high temperature applications than PA6, PA66, POM and PET.

ERTALON® 66GF30 *(PA66+GF30)*

Compared with PA66, this 30% glass fibre reinforced and heat stabilised grade offers increased strength, stiffness, creep resistance and dimensional stability whilst retaining an excellent wear resistance.

NYLATRON® GS *(PA66+MoS2)*

This contains Molybdenum Disulphide which is self lubricating and has superior bearing and wear properties over unfilled PA66.

NYLON - Cast *(Polyamide PA)*

A range of cast nylons are available with different additives, such as lubricants or heat stabilisers, to enhance their mechanical properties to fulfil particular functions.

ERTALON® 6PLA *(PA6G)*

An unmodified cast nylon exhibiting characteristics similar to those of PA66: high strength, stiffness and good creep and wear resistance.

ERTALON® 6XAU+ *(PA6G Heat Stabilised)*

This has a very dense structure and is recommended for bearings and mechanical parts subject to wear operating in air for long periods above 60˚c.

ERTALON® LFX *(PA6G Oil Filled)*

This internally lubricated grade is especially developed for unlubricated, highly loaded and slow moving part applications.

NYLATRON® GSM *(PA6+MoS2)*

Containing Molybdenum Disulphide which is self lubricating, this is commonly used for gears and bearings, sprockets and sheaves.

NYLATRON® MC901 *(PA6)*

This blue, modified cast nylon exhibits higher toughness, flexibility and fatigue resistance than ERTALON 6PLA, excellent for large gears, racks and pinions.

NYLATRON® NSM *(PA6 Solid Lubricants)*

Containing solid lubricant additives, this grade is suited to higher velocity, unlubricated moving part applications and is the perfect complement to ERTALON LFX.

NYLATRON® 703XL *(PA6)*

This modified grade with 'Zero Slip Stick' gives extreme performance for precise motion control and heavy wear applications.

ACETAL *(Polyacetal POM)*

Acetal is a material distinguished by low moisture absorption and good impact resistance. These qualities are combined with excellent strength, stiffness and good machinability.

ERTACETAL® C *(POM-C)*

This Copolymer grade is more resistant against hydrolysis, strong alkalis and Thermaloxidative degradation then POM-H.

ERTACETAL® H (DELRIN 150) *(POM-H)*

POM-H Homopolymer grade has higher mechanical strength, stiffness, hardness and creep resistance than POM-C, with a lower thermal expansion rate and better wear resistance.

ERTACETAL® H-TF (DELRIN AF) *(POM-H + PTFE)*

This combines TEFLON fibres within a DELRIN Acetal resin. Compared with POM-C and POM-H this grade offers superior sliding properties.

POLYESTER *(Polyethylene Terephtalate PET)*

Polyester has the advantages of the high wear resistance of Nylon and the low moisture absorption of Acetal in one material and also offers higher mechanical strength to 80°C than Nylon, Acetal or UHMWPE. It has exceptional chemical resistance and meets American and European approval for contact with food.

ERTALYTE® *(PET)*

This virgin crystalline PET is well suited for the manufacture of mechanical precision parts which have to sustain high loads and/or are subject to wear.

ERTALYTE® TX *(PET + Solid Lubricant)*

This grade incorporates a uniformly dispersed solid lubricant with not only an outstanding wear resistance, but compared with the virgin PET offers an even lower coefficient of friction as well as higher Pressure-Velocity capabilities.

ENGINEERING POLYCARBONATE *(PC)*

Polycarbonate has good stiffness retention, and a high mechanical and impact strength even at low temperatures. It has good electrical insulating and dielectric properties as well as being physiologically inert making it suitable for food contact.

PC 1000® *(PC)*

A non UV stabilised PC, this virgin grade is a non-optical industrial quality.

PTFE *(Polytetrafluoroethylene PTFE)*

PTFE is a truly unique material and still the most widely used of all the Fluoropolymers in a range of applications.

PTFE *(Virgin)*

PTFE has outstanding chemical resistance, superb electrical insulating properties, a wide working temperature range from +260 to -260˚C and a very low coefficient of friction, resulting in a unique non-stick behaviour.

PTFE-GF *(25% Glass filled)*

This reinforced Glass fibre grade is most commonly used for sealing applications, with enhanced compression and wear properties.

PTFE-CF *(25% Carbon filled)*

This Carbon fibre grade has good compression and wear resistance, good thermal conductivity and low permeability.

PCTFE *(Polychlorotrifluoroethylene)*

PCTFE is a melt-processible Fluoropolymer with a continuous-use temperature range from -204˚C (-400˚F) up to 149˚C (300˚F). PCTFE has high compression strength, low deformation under load, chemical and thermal stability, low gas permeability, high optical transparency, low flammability and zero moisture absorption. Well suited in applications such as: gaskets, spacers; valve seats; bearings, sight glasses and laboratory ware.

POLYETHYLENE *(PE)*

The properties of Polyethylene depend on density, molecular weight and molecular weight distribution. As molecular weight increases, so do impact strength, elongation, tensile strength and resistance to environmental stress cracking. PE-HMW has excellent wear and abrasion resistance, and resistance to chemicals and radiation. The impact strength of the UHMWPE grade is exceptional, even at liquid helium temperatures, thus it is suitable for cryogenic applications such as valves, seals, piston rings and packings.

TIVAR PE- 500 *(High Molecular Weight Polyethylene PE-HMW)*

Used mainly in the food industry (meat and fish processing) but also in mechanical, chemical and electrical applications. This grade exhibits a good combination of stiffness, toughness, mechanical damping ability with wear and abrasion resistance.

TIVAR PE- 500 R *(High Molecular Weight Polyethylene PE-HMW)*

Used for applications where its reduced physical properties are overruled by its economical advantage. This grade is partially composed of reprocessed PE- 500 material.

TIVAR PE- 500 COLOURED *(High Molecular Weight Polyethylene PE-HMW)*

The TIVAR PE- 500 COLOURED range of materials offers a series of consistent, attractive and food compliant colours (facilitating quick identification of components) which find particular outlet in the food and leisure industry. The property profile of these grades is practically identical to the one of TIVAR PE-500.

TIVAR PE- 1000 *(Ultra High Molecular Weight Polyethylene PE-UHMW)*

Of all PE-UHMW grades, PE- 1000 exhibits the best balanced property profile. It combines an excellent wear and abrasion resistance with an outstanding impact strength, even at temperatures below -200°C. Its main fields of application are: general mechanical construction; bottling and packaging machinery; chemical and electroplating industry; cryogenic equipment; textile industry and storage systems for bulk materials.

TIVAR PE- 1000 R *(Ultra High Molecular Weight Polyethylene PE-UHMW)*

An economical PE-UHMW grade for use in material handling equipment. This grade is partially composed of reprocessed PE- 1000 material. It has an overall lower property level than the PE- 1000. Compared with PE- 500, however, it has a much better impact strength and wear resistance.

SRBF, SRBP AND OTHER RESIN BASED MATERIALS

This material comes in many different grades with properties tailored to specific properties such as electrical and thermal insulation, mechanical strength, & rigidity.

TUFNOL - CARP *(Cotton Fabric Based Laminate - fine weave)*

A top quality grade for mechanical and electromechanical applications. Strong, good wear resistance. Excellent machining qualities. Low water absorption with good dimensional stability. Very good electrical properties for this grade. Resistance to high impact is slightly less than the coarser weave grades.

TUFNOL - WHALE *(Cotton Fabric Based Laminate - medium weave)*

A good general purpose grade for mechanical applications. Excellent all round physical properties. Strong, good toughness and wear resistance. Electrical insulation for low voltages only.

TUFNOL - CROW *(Cotton Fabric Based Laminate - coarse weave)*

A general purpose grade for mechanical applications, especially where tough, rugged components are needed. Good all-round properties and excellent impact strength. Good toughness and wear resistance. Electrical insulation for low voltages only.

TUFNOL - BEAR *(Cotton Fabric Based Laminate - medium weave)*

Used for a wide range of wearing and bearing applications. A robust cotton fabric grade specially

formulated for use as a lubricated bearing material. Good dimensional stability with excellent wear resistance and can be effectively lubricated with water or with conventional oils or greases. The low water absorption properties allow reduced clearances in bearings and also provide enhanced electrical insulation properties. Slightly less impact resistant than Whale Brand.

TUFNOL - 6F/45 *(Cotton Fabric Based Epoxy Laminate - fine weave)*
A versatile grade used for a very broad range of applications, where precision and a high quality machined finish need to be combined with electrical or mechanical performance. It provides outstanding electrical performance. It has very high resistance to electrical tracking, and its dielectric strength, insulation resistance and water absorption are comparable with those of glass laminates. It is mechanically strong, with good wear performance and is resistant to a wide range of chemicals. Grade 6F/45 can be readily machined to fine tolerances and gives a superb machined finish.

TUFNOL - SWAN *(Laminated Paper Moulded Sections)*
Swan grade TUFNOL is a good quality electrical insulating material, similar in performance to Kite grade. It is produced in solid moulded sections, such as rod, square bar, etc. to complement the Kites' range of sheet and hollow moulded sections (e.g. tube).

TUFNOL - 1P/13 *(Phenolic Paper Based Laminate)*
A low cost commercial grade of paper based laminate, produced to meet the need for an economical material, where electrical requirements are moderate. A good basic, low voltage insulation material, this grade has a higher mechanical strength than the other grades in our phenolic paper range and has a significantly improved impact strength. It can be readily machined and can be hot punched, to produce components in thicknesses up to 3.2 mm.

TUFNOL - KITE *(Paper Based Laminate)*
Kite, the most widely used grade, is a first class electrical insulating material with good dielectric strength and high insulation resistance. It has low moisture absorption and good mechanical strength, although its impact strength is low. It is readily machined and can be hot punched in thicknesses up to 3.2mm (1/8). Paper based components are not normally used for items where optimum wear resistance is required.

TUFNOL - 10G/40 *(Epoxy Glass Fabric Laminate)*
Used for a very wide variety of applications where high mechanical strength, rigidity, dimensional stability and electrical performance are required. With low moisture absorption and excellent electrical properties, under both dry and humid conditions, it is suitable for continuous use at temperatures up to approximately 130°C (Class B). It is not normally selected for wearing or bearing applications.

TUFNOL - 10G/41 *(Epoxy Glass Fabric Laminate)*
Similar to 10G/40 grade but with flame retardant additives. It is a rigid material, with good dimensional stability and an excellent self-extinguishing performance in fire tests. It is suitable for use in applications at Class B temperatures (130°C). Used in applications where requirements for high electrical performance and mechanical strength are combined with a need for flame retardant properties.

QUADRANT
ENGINEERING PLASTIC PRODUCTS

HIGH PERFORMANCE MATERIALS

A range of formulated materials are available for specialist applications, each having a unique set of properties.

FLUOROSINT® 500 *(Reinforced Polytetrafluoroethylene PTFE + Mica)*
This modified PTFE has 9 times greater resistance to deformation than virgin PTFE and is non-abrasive to most mating materials.

FLUOROSINT® 207 *(PTFE + Mica)*
This grade meets the European and American regulations for contact with foodstuffs. It's chemical and hydrolysis resistance make it suitable for pharmaceutical and medical applications.

PEI® 1000 *(Polyetherimide PEI)*
This polymer has outstanding thermal, mechanical and electrical properties, with very low flammability, suitable for electronic insulators & structural components requiring strength at elevated temperatures.

PSU® 1000 *(Polysulphone PSU)*
Produced from non-UV-stabilised PSU resin, this offers good radiation stability, low iconic impurity levels and good chemical and hydrolysis resistance, often replacing Polycarbonate.

PPSU® 1000 *(Polyphenylsulphone PPSU)*
Produced from RADEL® R resin, this offers a better impact and chemical strength than PEI and PSU. It has superior hydrolysis resistance making it excellent for repeated steam autoclaving. Also popular for pharmaceutical and medical applications.

PVDF® 1000 *(Polyvinylidene Fluoride PVDF)*
This unreinforced grade is a versatile engineering material, suitable for petrochemical, chemical, metallurgical, pharmaceutical, food, paper, textile & nuclear industries.

TECHTRON® HPV PPS *(Polyphenylene Sulphide PPS)*
Compared to virgin PPS, PA, POM, PET, PEI and PSU this reinforced grade has excellent wear resistance, load bearing capabilities and stability when exposed to chemicals and high temperatures. An economical solution to the superior PBI, PI, PEEK and PAI.

CELAZOLE® PBI *(Polybenzimidazole PBI)*
PBI offers the highest temperature resistance and best mechanical property retention of all unfilled Thermoplastics. Used in high-tech industries such as semi-conductors, aircraft & aerospace industries.

KETRON® PEEK *(Polypetheretherketone PEEK)*
The PEEK Family of materials is an advanced material exhibiting high mechanical properties, excellent temperature and chemical resistance making it the most popular advanced plastics material.

KETRON® PEEK 1000 (450g) *(PEEK)*
Standard grade - the highest toughness and impact strength of all PEEK's.

KETRON® PEEK HPV *(PEEK + CF + PTFE + Graphite)*
A bearing grade with low friction, long wear and high Pressure-Velocity capabilities.

KETRON® PEEK GF30 *(PEEK-GF30)*
30% glass fibre reinforced grade - higher stiffness and creep resistance than 1000.

KETRON® PEEK CA30 *(PEEK-CF30)*
30% carbon fibre reinforced grade - higher stiffness and creep resistance than GF30.

TORLON® *(Polyamide-imide PAI)*
The PAI Family of materials combine excellent retention of mechanical strength, stiffness and creep resistance over a wide temperature range with extremely low thermal expansion up to 250˚c.

TORLON® 4203 *(PAI)*
The best toughness and impact strength of all TORLON PAI's, popular for precision parts in high-tech equipment. Has a great electrical insulating ability.

TORLON® 4503 *(PAI)*
Similar in composition to 4203 and is selected when larger shapes are required.

TORLON® 4301 *(PAI + Graphite + PTFE)*
Compared to PAI this has higher wear resistance and lower coefficient of friction for severe wear applications (non-lubricated bearings, seals and compressor parts.

TORLON® 4501 *(PAI + Graphite + PTFE)*
Similar in composition to 4301 and is selected when larger shapes are required.

TORLON® 5530 *(PAI + GF30)*
30% glass fibre reinforced grade - higher stiffness and creep resistance than 4203 and 4503, suited for static loads for long periods of time at high temperatures.

VESPEL® *(Polyimide PI)*

The VESPEL Family of materials offers properties that allows it to excel in applications requiring low wear and long life in harsh environments.

VESPEL® SP1 *(PI)*

Has the maximum physical properties and best electrical/thermal insulation of all PI's.

VESPEL® SP21 *(PI + Graphite)*

With 15% graphite added to provide additional wear resistance and low friction.

VESPEL® SP211 *(PI + Graphite + PTFE)*

With 15% graphite & 10% PTFE offers the lowest coefficient of friction and wear rate.

VESPEL® SP22 *(PI + Graphite)*

With 40% graphite SP22 has the wear & friction resistance of SP21 with improved dimensional stability.

VESPEL® SP3 *(PI + Graphite)*

Containing Molybdenum Disulphide which is self lubricating, this is used for seals and bearings in vacuums or inert gases (dry environments).

SEMITRON® ESd *(POM, PEI, PTFE + Mica, PAI)*

The SEMITRON Family of static dissipative plastics is used within applications with problems of electrical discharge. They provide a controlled bleed-off of static charges.

SEMITRON® ESd 225 *(POM)*

This grade helps to avoid discharge problems for parts intended for human contact, and is used in the manufacturing of sensitive electronic components.

SEMITRON® ESd 410C *(PEI)*

This grade provides ESd solutions at higher temperatures and exhibits excellent dimensional stability, ideal for equipment in electronic and semi-conductor industries.

SEMITRON® ESd 500HR *(PTFE + Mica)*

This reinforced grade offers low frictional properties and good dimensional stability and ESd compared to virgin PTFE, used where a controlled bleed-off is required.

SEMITRON® ESd 520HR *(PAI)*

This grade has an industry first combination of ESd, high strength & heat resistance, ideal for making nests, sockets and contactors in the semi-conductor industry.

SIMONA

LOWER PERFORMANCE MATERIALS

PVC *(POLYVINYLCHLORIDE PVC)*

PVC is an ideal material for low stress applications, where it's low cost and reasonable hardness are an advantage. It also makes a good material for mounting process control equipment as the sheet form is both rigid, easily machined and can be glued or welded.

PVC EXTRUDED *(POLYVINYLCHLORIDE PVC)*

Particularly popular within the area of chemical apparatus and tank/ vessel construction because it combines properties such as high strength and rigidity with resistance to weathering, which makes it suitable for outdoor applications.

PVC-KYRNIT® PRESSED *(POLYVINYLCHLORIDE PVC)*

A rigid PVC with normal impact strength; weather stabilised for outdoor applications. It has very good resistance to many diluted and concentrated acids, alkalis and salts. Owing to it's good electrical insulating properties, it is suitable for the electrical industry.

PVC-GLAS® *(POLYVINYLCHLORIDE PVC)*

A rigid PVC at a low cost alternative to other transparent sheets. Owing to it's superior light transmission ratio (up to 88%), PVC-GLAS is the ideal solution for applications in mechanical engineering, installation construction, display construction and the design of illuminated advertising.It is also classified as low flammability in accordance with DIN 4102 B1.

POLYPROPYLENE *(HOMOPOLYMER PP)*

POLYPRO has good chemical and impact resistance and has a relatively low density, but is a softer material and can only be welded. It makes a good material for tanks and bunding.

PP-DWST *(HOMOPOLYMER PP-DWST) NATURAL*

This permanent heat resistant, natural coloured grade is specially designed for indoor applications. Ideal for use in the food industry. The key properties are high rigidity in the upper temperature range and very good chemical resistance. PP-DWST is also available in a UV-stabilised or antistatically treated form.

PP-DWU *(HOMOPOLYMER PP-DWU) BEIGE*

This permanent heat resistant PP is particularly popular in the field of chemical apparatus and tank/ vessel construction, owing to it's especially high chemical resistance and corrosion resistance. In addition, it is extremely cost effective. Fabric backed sheets are the product of choice within the area of composite construction and linings.

PP-C *(COPOLYMER PP-C)*

A Copolymer which has a higher impact strength, even at low temperatures, than Homopolymer PP. Owing to it's superior strength it has lower susceptibility to tension cracks. Fabric backed sheets PP-C-PK are available and are ideal for composite constructions.

POLYETHYLENE - HDPE *(POLYETHYLENE PE)*

PE-HWST *(POLYETHYLENE PE-HWST) NATURAL*

A high heat resistant PE specially designed for indoor applications. Owing to the many different processing capabilities, PE-HWST can be deployed for a diverse range of applications and features physiological safety for contact with food.

PE-HWU *(POLYETHYLENE PE-HWU) BLACK*

Owing to it's UV stabilisation, PE-HWU is ideal for outdoor applications. On account of it's outstanding processing capability and it's excellent cost benefit ration, PE-HWU is used in areas from chemical apparatus construction to applications within food related sectors. Backed sheets are perfectly tailored to the requirements of composite construction and linings.

PERSPEX

CAST ACRYLIC

Cast Acrylic is one of the most versatile of all thermoplastics. It has excellent weather resistance, good resistance to dilute acids and alkalis, a higher impact strength than glass and is easy to machine, fabricate and thermoform. It has good thermal stability and low water absorption. It is highly transparent with a light transmission of 92%. It has an excellent surface finish in gloss or satin and is available in clear, opals and more than 50 standard colours plus many more specials. It is widely used within the construction industry.

LEXAN RESIN makrolon PALRAM arla ARLA PLAST AB SWEDEN

POLYCARBONATE *(PC)*

With an extremely high impact strength and high optical clarity PC is a natural choice for many applications but particularly where security and safety glazing or architectural glazing is required. In addition to its high impact strength and transparency all PC sheet has good fire rating and is usable over a very wide temperature range.

OUR PRODUCT LIST COVERING THE MAJORITY OF ITEMS STOCKED INCLUDES:

SHEETING:
Acrylic (Perspex), Polycarbonate, PVC Foam, ABS, HIPS, PVC, and Polypropylene. Full cutting service available.

ENGINEERING MATERIALS:
Nylon, Acetal, Delrin, PETP, Tufnol, Acrylic, PTFE, Polycarbonate, ABS, PVC, Polypropylene, Peek, and Torlon, plus other high performance materials in Rod, Sheet, Block and Shapes. Full cutting service available.

PRESSURE PIPEWORK SYSTEMS:
In PVC, ABS, Polythene, Polypropylene and PVDF. Blue and Black MDPE water main in coils plus compression fittings. Yellow Gas tube in coils plus compression fittings. UPVC Drainage Systems/Plastic ducting and ventilation systems.

HOSE:
Clear and Braided PPVC, Suction and Delivery, Layflat. Hose clips and fittings.

TANKS:
Polythene Dosing Tanks, GRP Water Tanks. Also Tanks fabricated to your specification in a range of materials.

INCORPORATING EUROSTAN LTD:
Metal Valves, Couplers, Specialist Tank fittings. Manufacturers of the "SCAT" Tap.

Some of the industries we supply to include Engineering, Maintenance, Printing, Sign and Display, Irrigation, Agriculture, Building and Construction. We can provide a full delivery service on our own vehicles and a trade counter (8:30 - 16:30) for purchases and collections.

We have been established in Crawley for over 21 years and operate from our large modern premises at:

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