

PILOTPACK & PILOTSEAL

Braided Packing & Sheet Jointing

Beldam^b
Crossley



**INDUSTRIAL SEALING, BEARING
AND POLYMER EXPERTS**

Beldam Crossley Pilot®

Your First Choice in Sealing Products

Beldam Crossley have been manufacturing braided packing seals from Bolton, in the UK for over 135 years. At Beldam Crossley we are proud of our Pilot® product ranges and continue to provide the very best technical performance, quality, service and support to ensure that we meet the most demanding of requirements.

Always at the forefront of development, we have responded quickly to the constantly changing worldwide demands of specialised sectors as diverse as Aerospace, Defence, Oil and Gas, Automotive, Construction, Power Generation, Marine and Petrochemical Processing.

As experts in the design and manufacture of seals, quality is integral to all processes at Beldam Crossley. From the selection of materials to seal design and customer service, we are dedicated to bringing the very best sealing solutions to our customers.

At Beldam Crossley, we understand that selecting the correct seal for the ever demanding applications is vital to ensure safety and maximum uptime. Our continued investment in application engineering expertise, research and development and training ensures that we continue to deliver solutions.

Wherever in the world you operate, we can deliver peace of mind and a customised response to suit the most challenging application. Our team of experts are available to advise on the correct product for your application and to ensure you have the right product when you need it.



FORWARD THINKING SOLUTIONS WITH A HISTORY OF EXPERTISE

Beldam Crossley Pilot[®] Packing

Standard 16 Packing Range

Simplicity

16 products to satisfy the majority of industrial applications.

Performance

The Pilot[®] Packing range has been developed to provide long, trouble free service.

Quality

All our manufacturing is based in the UK and operates to internationally accepted standards - including BS EN ISO 9001:2008 and BS EN ISO AS 9100 Rev. C standards for design and manufacture of products for aerospace, and environmental management system standards to BS EN ISO 14001:2004.

Price

The Standard 16 Packing Range provides the best value options and reduces the total life-cycle cost of running and maintaining plant.

Support

The UK based application engineering and research and development teams provide world-class support and training to our customers and partners worldwide.

Availability & Customer Service

With a highly equipped manufacturing base, Beldam Crossley supported by its partners worldwide, is perfectly placed to provide an immediate response to match every customer's requirements. Our team are technically trained to offer advice on all our products in the most demanding of applications across all industry sectors.

For more information contact us on:

T: +44 (0) 1204 675700

E: sales@beldamcrossley.co.uk

Disclaimer: All information is published in good faith and is for orientation purposes only, with no responsibility for any errors or omissions. For liability, the assistance of an appropriate professional should be sought. Beldam Crossley reserves the right to change specification listings.

PILOTPACK Standard 16 Technical Overview

| Packing Style | Product Description | Application | | Max Rotary Speed | Max Linear Speed | Max Rotary Pressure | Max Valve Pressure | Max Temp °C | PH Range |
|----------------|---|-------------|--------|------------------|------------------|---------------------|--------------------|-------------|----------|
| | | Pumps | Valves | | | | | | |
| PILOTPACK 76 | Lubricated traditional marine packing | Y | Y | 10 | 2 | 25 | 100 | 120 | 5-9 |
| PILOTPACK 116 | Graphited traditional marine packing | Y | Y | 10 | 2 | 25 | 100 | 120 | 5-9 |
| PILOTPACK 3400 | High performance ePTFE packing for food, pharmaceutical and fine chemicals | Y | Y | 20 | 2 | 20 | 100 | 280 | 0-14 |
| PILOTPACK 3408 | 100% PTFE oil free packing | Y | Y | 10 | 2 | 20 | 350 | 280 | 0-14 |
| PILOTPACK 3410 | Lubricated PTFE packing for general industrial use | Y | Y | 15 | 2 | 20 | 200 | 280 | 0-14 |
| PILOTPACK 3435 | High performance universal packing manufactured from ePTFE with Graphite | Y | Y | 25 | 2 | 25 | 350 | 290 | 0-14 |
| PILOTPACK 3480 | High performance universal packing manufactured from ePTFE with Graphite | Y | Y | | | | 200 | 280 | 1-14 |
| PILOTPACK 4000 | High purity graphite packing with Inconel for high temperature valves and pumps | | Y | | 2 | | 500 | 500 | 0-14 |
| PILOTPACK 4001 | High purity graphite packing for high temperature valves and pumps | Y | Y | 25 | 2 | 25 | 300 | 500 | 0-14 |
| PILOTPACK 4009 | High purity graphite packing for high temperature valves and pumps | | Y | | 2 | | 350 | 650 | 1-14 |
| PILOTPACK 4010 | Flexible filament graphite packing for high pressure and high temperature valves and pumps | Y | Y | 25 | 2 | 8 | 200 | 500 | 3-13 |
| PILOTPACK 5020 | Aramid packing with lubricant for use with abrasive media | Y | Y | 20 | 2 | 25 | 300 | 300 | 2-13 |
| PILOTPACK 5035 | Aramid packing with graphited ePTFE for use with abrasive media | Y | Y | 25 | 2 | 20 | 350 | 290 | 1-14 |
| PILOTPACK 8022 | Special composite synthetic packing for general industrial applications | Y | Y | 16 | 2 | 10 | 150 | 290 | 2-12 |
| PILOTPACK 8113 | Graphited refined silica packing for high temperature pumps and rotating applications | Y | Y | 10 | 1 | 10 | 100 | 400 | 3-13 |
| PILOTPACK 8500 | Refined silica packing with special reinforcement and lubricant for high temperature valves | | Y | | 1 | | 150 | 700 | 3-14 |

Standard 16 - Quick Guide



Power Generation

High pressure and high temperature steam

PILOTPACK 4000 PILOTPACK 4001

PILOTPACK 4009 PILOTPACK 4010

PILOTPACK 8113 PILOTPACK 8500

Oil and Gas

High pressure and high temperature chemicals

PILOTPACK 4000 PILOTPACK 4001

PILOTPACK 4009 PILOTPACK 4010



Food and Pharmaceutical

Clean, non-contaminating

PILOTPACK 3400 PILOTPACK 3408

PILOTPACK 5020

Pulp and Paper

Abrasive slurries with aggressive chemicals

PILOTPACK 3400 PILOTPACK 5020



Chemical

Wide range of aggressive chemicals, medium/high temperature and pressure

PILOTPACK 3400 PILOTPACK 3408

PILOTPACK 3410

Marine

Water, saltwater and Hatch Lids

PILOTPACK 76 PILOTPACK 116

PILOT LIDPACK 3800 PILOT LIDPACK 3800

PILOT LIDPACK 3801L

Mining and Quarrying

Water, Slurry and Abrasives

PILOTPACK 5020 PILOTPACK 5035

PILOTPACK 76

For Marine Applications



Rotating applications

| | |
|--------------------|----------|
| Speed: | 10 m/s |
| Temperature range: | to 120°C |
| Maximum pressure: | 25 bar |

Valve applications

| | |
|--------------------|----------|
| Speed: | 2 m/s |
| Temperature range: | to 120°C |
| Maximum pressure: | 100 bar |

Reciprocating applications

| | |
|--------------------|----------|
| Speed: | 2 m/s |
| Temperature range: | to 120°C |
| Maximum pressure: | 70 bar |

Description

PILOTPACK 76 is a firm packing made from the finest quality yarn blended with lubricants to provide a high wet strength when in contact with seawater. PILOTPACK 76 is an excellent general service packing for use in fresh or sea water and is an ideal choice for marine and water transfer applications. It can be used in rotary, reciprocating & valve applications and on slow running stern shafts.

Applications

- Natural fibre based packing designed especially for fresh & seawater applications
- Suitable for slow running, stern shaft applications
- Very easy to install, even in restricted areas
- Cost effective packing for most marine duties

Chemical Compatibilities

For the pH range 5-9, the packing is chemically inert.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock and supplied in differing lengths depending on the cross section, Larger and rectangular sections can be manufactured to order. Packing can also be supplied in preformed or die formed rings.

PILOTPACK 116

For Marine Applications



Rotating applications

| | |
|--------------------|----------|
| Speed: | 10 m/s |
| Temperature range: | to 120°C |
| Maximum pressure: | 25 bar |

Valve applications

| | |
|--------------------|----------|
| Speed: | 2 m/s |
| Temperature range: | to 120°C |
| Maximum pressure: | 100 bar |

Reciprocating applications

| | |
|--------------------|----------|
| Speed: | 2 m/s |
| Temperature range: | to 120°C |
| Maximum pressure: | 40 bar |

Description

PILOTPACK 116 is a firm packing made from the finest quality yarn blended with graphite and lubricants to provide a high wet strength when in contact with seawater. PILOTPACK 116 is an excellent general service packing for use in fresh or sea water and is an ideal choice for marine and water transfer applications. It can be used in rotary, reciprocating & valve applications, and on slow running stern shafts.

Applications

- Natural fibre based packing designed especially for fresh & seawater applications
- Suitable for slow running, stern shaft applications
- Very easy to install, even in restricted areas
- Cost effective packing for most marine duties

Chemical Compatibilities

For the pH range 5-9, the packing is chemically inert.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock and supplied in differing lengths depending on the cross section, Larger and rectangular sections can be manufactured to order. Packing can also be supplied in preformed or die formed rings.

PILOTPACK 3400

For Pumps, Valves and Mixers in the Food & Pharmaceutical Industries



Rotating applications

| | |
|--------------------|----------------|
| Speed: | 20 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 20 bar |

Valve applications

| | |
|--------------------|----------------|
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 100 bar |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 100 bar |

Description

Specially developed high performance packing manufactured from an expanded PTFE yarn (ePTFE) consisting of pure PTFE containing highly refined lubricant & filler both of which are encapsulated in the ePTFE. This gives a yarn that has superior heat transfer properties and ensures the heat generated is rapidly removed. When this yarn is braided using the 'Crossplait' technique of manufacture, this gives superior packing that increases service life. PILOTPACK 3400 packing has been especially developed for use in pharmaceutical and food & beverage industries but also in fine chemicals & fine paper applications, or any application where any contamination cannot be tolerated.

Applications

- Manufactured from FDA compliant materials
- Especially suitable for use in applications where a non contaminating packing is required
- Excellent heat transfer & heat dissipation properties ensure a cool running packing giving a longer seal life
- Suitable for pump, valve, reciprocating and static applications especially in pharmaceutical, food / beverage industries but also in fine chemicals & fine paper applications
- Manufactured from a superior pure ePTFE yarn that gives increased life over other PTFE yarns

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert. Suitable for all chemicals with the exception of fluorine and molten alkali metals.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock and supplied in differing lengths depending on the cross section. Larger and rectangular sections can be manufactured to order. Packing can also be supplied in preformed or die formed rings.

PILOTPACK 3408

For Pumps, Valves and Mixers in the Food & Pharmaceutical Industries



Rotating applications

| | |
|--------------------|----------------|
| Speed: | 10 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 20 bar |

Valve applications

| | |
|--------------------|----------------|
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 200 bar |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 20 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 150 bar |
| Maximum pressure: | 150 bar |

Description

High performance packing manufactured from a yarn consisting of pure fine PTFE fibres containing no impregnation or additives. The yarn also has a very low coefficient of friction that allows relative movement between the fibres. When this yarn is braided using the 'Crossplait' technique of manufacture, this gives the packing a 'self lubricating' property that increases service life. PILOTPACK 3408 packing has been especially developed for use on oxygen applications (which require a very pure product with no lubricants as these can react with oxygen) It can also give long life on solvents and chemicals used in the chemical, refining, food and beverage industries on valves, pumps and static applications such as tank lids.

Applications

- Designed for use on oxygen applications
- Suitable for all chemicals especially solvents and chemicals with the exception of molten alkali metals and fluorine
- Suitable for pump, valve and static applications especially in the chemical industry
- Operates over a wide range of parameters
- Manufactured from a pure PTFE yarn that contains no impregnation

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert. Suitable for all chemicals with the exception of fluorine and molten alkali metals.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock and supplied in differing lengths depending on the cross section. Larger and rectangular sections can be manufactured to order. Packing can also be supplied in preformed or die formed rings.

PILOTPACK 3410

For Pumps and Valves - Suitable with Most Chemical



Rotating applications

| | |
|--------------------|----------------|
| Speed: | 15 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 20 bar |

Valve applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 200 bar |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 150 bar |

Description

High performance packing manufactured from a specially lubricated yarn consisting of pure fine PTFE fibres. This additional lubricant helps the running in process, allows operation under difficult conditions and maintains pliability for a longer period in service. PILOTPACK 3410 packing also gives long life on solvents and chemicals used in the chemical, refining, food and beverage industries on valves, pumps and static applications such as tank lids.

Applications

- Suitable for all chemicals especially solvents with the exception of molten alkali metals and fluorine
- Suitable for pump, valve & static applications especially in the chemical industry
- Operates over a wide range of parameters
- Contains specially formulated lubricant for operation under difficult conditions

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert. Suitable for almost all chemicals except molten alkali metals and fluorine.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock and supplied in differing lengths depending on the cross section. Larger and rectangular sections can be manufactured to order. Packing can also be supplied in preformed or die formed rings.

PILOTPACK 3435

Superior Performance Packing for Valves & Pumps - Suitable with Most Chemicals



Rotating applications

| | |
|--------------------|----------------|
| Speed: | 25 m/s |
| Temperature range: | - 240 to 290°C |
| Max pressure: | 25 bar |

Valve applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 240 to 290°C |
| Max pressure: | 350 bar |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 240 to 290°C |
| Max pressure: | 200 bar |

Description

PILOTPACK 3435 Packing is manufactured from superior performance graphited ePTFE yarn, then braided using the 'Crossplait' technique of manufacture. This produces packing that has high thermal conductivity removing heat from running surface, which ensures cooler running packing so increasing service life. The yarn has been specially developed using graphited PTFE with high temperature lubricant that is an integral component of the yarn. This process ensures that the lubricant cannot be washed or leached out as can occur with some coated yarns

Application

- Designed to operate on high speed rotary and reciprocating applications
- Operates at high pressure with normal gland clearances
- Excellent thermal conductivity combined with low coefficient of friction
- Minimal shaft wear combined with excellent abrasion and chemical resistance
- High temperature resistance combined with good dimensional stability

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert.

Sizes Available

All square sections are available from 3mm (1/8") to 25mm (1") are generally available from stock in differing lengths depending on the cross section. Larger and rectangular sections can also be manufactured to order. PILOTPACK 3435 packing can also be supplied in preformed or die formed rings.

PILOTPACK 3480

For High Speed Pumps



Rotating applications

| | |
|--------------------|----------------|
| Speed: | 20 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 20 bar |

Valve applications

| | |
|--------------------|----------------|
| Speed: | 1 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 200 bar |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 1 m/s |
| Temperature range: | - 100 to 280°C |
| Maximum pressure: | 200 bar |

Description

A high performance packing manufactured from a multi filament graphited PTFE yarn impregnated with high temperature lubricant. A combination of the Crossplait braid design with the lubricant impregnation ensures a long service life, even in arduous applications. The specially developed yarn has superior dimensional stability, pressure & extrusion resistance than homogeneous yarns often used in braided packing. PILOTPACK 3480 is excellent general purpose packing for use in a wide range of both dynamic and static applications. It is especially suitable for applications where extrusion can be a problem or there is low speed but large radial shaft movements such as in mixers or agitators.

Applications

- Long sealing life for high speed pump applications but can also be used on valve, mixer and reciprocating applications, on almost all chemicals, solvents and oils
- Excellent performance at higher pressures due to superior anti- extrusion properties
- Capable of withstanding large radial shaft movements in mixers
- Suitable for many applications especially in refining, petro chemical, chemical, food and beverage and metal processing industries

Chemical Compatibilities

For the pH range 1-14, the packing is chemically inert & suitable for steam but should not be used with fluorine, molten alkali metals, hot fuming nitric acid, ammonium nitrate, oxygen rich environments.

Sizes Available

All square sections are available from 3mm (1/8") upwards, supplied in 8 m or 4 m lengths depending on the cross section. Rectangular sections can also be manufactured to order. PILOTPACK 3480 packing can also be supplied in preformed or die formed rings.

PILOTPACK 4000

For High Pressure & High Temperature Valves



Valve applications

| | |
|--|--------------------|
| Temperature range: | |
| Inert gas conditions | - 200 to 1000°C |
| Steam | - 200 to 650°C |
| Oxidising environment | - 200 to 450°C |
| Maximum pressure: | 350 bar (5080 psi) |
| For higher pressures, please contact Beldam Crossley | |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 200 to 450°C |
| Maximum pressure: | 200 bar |

Description

Manufactured from pure expanded graphite containing minimal amounts of trace elements such as sulphur and chloride, then reinforcement with Inconel wire. This ensures that the packing has high thermal conductivity, very low friction and rapid heat dissipation, factors that ensure a long seal life. The inclusion of a corrosion inhibitor ensures that when the packing is used on valves with stainless steel stems, pitting does not occur in environments prone to galvanic corrosion.

Applications

- Long sealing life for high temperature high pressure valves
- Available as standard grade - PILOTPACK 4000 or nuclear grade - PILOTPACK 4003
- Inclusion of a corrosion inhibitor ensures stainless steel valve stems do not suffer pitting
- Manufactured from highest quality pure graphite with minimal impurities
- Contains Inconel wire reinforcement to minimise extrusion and provide high pressure capability
- High thermal conductivity and low friction properties ensure increased service life
- Easy to cut and install so can be used to replace moulded rings resulting in greatly reduced stock and cost

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert and suitable for steam. It should not be installed in strong oxidising environments such as hot concentrated nitric acid, highly concentrated sulphuric acid and molten alkali metals.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock in differing lengths depending on the cross section. Larger and rectangular sections can also be manufactured to order. PILOTPACK 4000 and 4003 packing can also be supplied in preformed or die formed rings.

PILOTPACK 4001

For High Temperature Valves & Pumps



Pump applications

| | |
|--------------------|----------------|
| Speed: | 25 m/s |
| Temperature range: | - 200 to 450°C |
| Pressure: | 25 bar |

Valve applications

| | |
|-----------------------|--------------------|
| Temperature range: | Up to 650°C |
| Steam | - 200 to 450°C |
| Oxidising environment | - 200 to 450°C |
| Maximum pressure: | 300 bar (4350 psi) |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 200 to 450°C |
| Maximum pressure: | 200 bar |

Description

Manufactured from pure expanded graphite containing minimal amounts of trace elements such as sulphur and chloride. This ensures that the packing has high thermal conductivity, very low friction and rapid heat dissipation, factors that ensure a long seal life. The inclusion of a corrosion inhibitor ensures that when the packing is used on components with stainless steel stems, pitting does not occur in environments prone to galvanic corrosion. PILOTPACK 4001 is excellent packing for use on rotating pumps, reciprocating pumps and valves on hot oils, hydrocarbons, chemicals, solvents, steam (saturated & superheated) in refineries, petro chemical, power generation and metal processing industries.

Applications

- Long sealing life for high temperature high pressure applications
- Inclusion of a corrosion inhibitor ensures stainless steel shafts do not suffer pitting
- Manufactured from highest quality pure graphite with minimal impurities
- High thermal conductivity and low friction properties ensure increased service life
- Easy to cut and install so can be used to replace moulded rings resulting in greatly reduced stock and cost.

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert and suitable for steam. It should not be installed in strong oxidising environments such as hot concentrated nitric acid, highly concentrated sulphuric acid and molten alkali metals.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock in differing lengths depending on the cross section. Larger and rectangular sections can also be manufactured to order. PILOTPACK 4001 packing can also be supplied in preformed or die formed rings.

PILOTPACK 4009

Valve Packing for Reducing 'Fugitive Emissions'



Valve Applications

| | |
|--------------------|---|
| Temperature range: | Up to 500°C Up to 650°C Steam Up to 3000°C Non-oxidising conditions |
| Maximum pressure: | 350 bar under normal conditions 500 bar under specific conditions |
| Speed: | 2 m/s |

Description

PILOTPACK 4009 is a superior quality low emission packing that is constructed from exfoliated graphite that is reinforced by knitted Inconel wire mesh to provide additional strength and resistance to extrusion. The packing is further coated with corrosion inhibitors and graphite based lubricant to provide smooth running in service.

PILOTPACK 4009 has been designed to reduce fugitive emissions with ease and as such is available 'off the spool' and requires no special fitting techniques.

Applications

- Processing chemicals and handling hydrocarbon liquid, fuels and gases where fugitive emissions must be reduced to below 100ppm
- PILOTPACK 4009 has a low sulphur content that makes it suitable for use in many nuclear applications
- High temperature valves
- Petrochemical, Refineries, Steel Works and Power Stations

Approvals

PILOTPACK 4009 has successfully maintained a leakage of less than 100ppm when tested to Shell SPE 77/312 and ISO15848-1:2006 and TA Luft VDI 2440 based standards

Chemical Compatibilities

For the pH range 1-14, the packing is chemically inert excluding strong oxidising agents.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock and supplied in differing lengths depending on the cross section. Larger and rectangular sections can be manufactured to order. Packing can also be supplied in preformed or die formed rings.

PILOTPACK 4010

For High Temperature, High Speed Pumps



Pump applications

| | |
|--------------------|----------------|
| Speed: | 25 m/s |
| Temperature range: | - 240 to 500°C |
| Pressure: | 10 bar |

Valve applications

| | |
|-----------------------|----------------|
| Temperature range: | - 200 to 650°C |
| Steam | - 200 to 500°C |
| Oxidising environment | - 200 to 500°C |
| Maximum pressure: | 200 bar |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 200 to 450°C |
| Maximum pressure: | 100 bar |

Description

Manufactured from high purity graphite filament yarn impregnated with PTFE. This ensures that the packing has high thermal conductivity, very low friction and rapid heat dissipation, factors that ensure a long seal life. PILOTPACK 4010 is excellent packing for use on rotating pumps, reciprocating pumps and valves on hot oils, hydrocarbons, chemicals, solvents, steam (saturated & superheated) in refineries, petro chemical, power generation and metal processing industries.

Applications

- Long sealing life for high temperature high pressure applications
- Inclusion of a corrosion inhibitor ensures stainless steel shafts do not suffer pitting
- Manufactured from highest quality pure graphite with minimal impurities
- High thermal conductivity and low friction properties ensure increased service life
- Easy to cut and install so can be used to replace moulded rings resulting in greatly reduced stock and cost

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert and suitable for steam. It should not be installed in strong oxidising environments such as hot concentrated nitric acid, highly concentrated sulphuric acid and molten alkali metals.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock in differing lengths depending on the cross section. Larger and rectangular sections can also be manufactured to order. PILOTPACK 4001 packing can also be supplied in preformed or die formed rings.

PILOTPACK 5020

For Pumps and Mixers with Abrasive Media



Rotating applications

| | |
|--------------------|----------------|
| Speed: | 25 m/s |
| Temperature range: | - 100 to 300°C |
| Max pressure: | 25 bar |

Valve applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 100 to 300°C |
| Max pressure: | 300 bar |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 100 to 300°C |
| Max pressure: | 200 bar |

Description

PILOTPACK 5020 Packing is manufactured from a high strength, high modulus meta-aramid yarn. The yarn is produced by a special process that ensures that each single filament is covered by PTFE and a special lubricant. PILOTPACK 5020 gives excellent operating life over a wide range of applications, especially in abrasive media giving long life on rotating equipment and valves operating on slurries and abrasive media, typically in paper and pulp, sewage, cement, power generation industries as well the food and drink industry.

Applications

- Designed to operate on high speed rotary applications, high pressure valve and static applications
- Superb wear resistance even in arduous and abrasive media
- Excellent extrusion resistance even at high speeds and pressures
- Minimal shaft wear due to polishing effect
- High temperature resistance combined with good dimensional stability

Chemical Compatibilities

For the pH range 2-13, the packing is chemically inert and non-toxic.

Sizes Available

All square sections are available from 3mm (1/8") to 25mm (1") are generally available from stock in differing lengths depending on the cross section. Larger and rectangular sections can also be manufactured to order. PILOTPACK 5020 packing can also be supplied in preformed or die formed rings.

PILOTPACK 5035

For Abrasive Media Pumps



Rotating applications

| | |
|--------------------|----------------|
| Speed: | 25 m/s |
| Temperature range: | - 100 to 290°C |
| Maximum pressure: | 20 bar |

Valve applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 100 to 290°C |
| Maximum pressure: | 350 bar |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 100 to 290°C |
| Maximum pressure: | 250 bar |

Description

PILOTPACK 5035 packing is manufactured from a superior performance graphited PTFE yarn in the core and seams with a high strength, high modulus meta-aramid yarn for the corners. When braided using the 'Crossplait' technique of manufacture, this produces packing that has high thermal conductivity core and seams so giving low operating temperatures, combined with the meta-aramid corners that produce excellent extrusion resistance. PILOTPACK 5035 has been specially developed using graphited PTFE with high temperature lubricant that is an integral component of the yarn. The meta-aramid yarn is produced by a special process that ensures each single filament is covered by PTFE and a special lubricant. Using these two yarns together gives excellent operating life over a wide range of applications, especially in abrasive media.

Applications

- Designed to operate on high speed rotary and reciprocating applications
- Excellent extrusion resistance even at high speeds and pressures
- Minimal shaft wear combined with excellent abrasion and chemical resistance
- High temperature resistance combined with good dimensional stability
- Suitable for many applications including chemical slurry pumps

Chemical Compatibilities

For the pH range 1-14, the packing is chemically inert.

Sizes Available

All square sections are available from 3mm (1/8") to 25mm (1") are generally available from stock in differing lengths depending on the cross section. Larger and rectangular sections can also be manufactured to order. PILOTPACK 5035 packing can also be supplied in preformed or die formed rings.

PILOTPACK 8022

A General Service Packing



Rotating applications

| | |
|--------------------|----------------|
| Speed: | 10 m/s |
| Temperature range: | - 100 to 290°C |
| Maximum pressure: | 10 bar |

Valve applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 100 to 290°C |
| Maximum pressure: | 150 bar |

Reciprocating applications

| | |
|--------------------|----------------|
| Speed: | 2 m/s |
| Temperature range: | - 100 to 290°C |
| Maximum pressure: | 100 bar |

Description

Highly cost effective universal packing manufactured from a unique sheathed yarn of aramid and pre-oxidised acrylic. The individual strands of yarn and the packing are both impregnated with PTFE dispersion, with an additional coating of high temperature lubricant. Using the 'Crossplait' method of construction, this ensures excellent chemical resistance, low surface friction and high impermeability together with good running in properties. PILOTPACK 8022 is excellent universal packing for use in both dynamic and static applications in a wide range of industries. This can lead to a minimal stock holding on site, so reducing inventory costs and more importantly, the possibility of the wrong packing being installed.

Applications

- Excellent universal packing
- Cost effective solution allowing minimal stock holding
- Long sealing life for pump, valve, mixer, reciprocating and static applications
- Excellent resistance to chemical attack
- Highly impermeable to liquid and gases
- Suitable for many applications in chemical, petro chemical, paper and pulp industries as well as refineries. Also suitable for steam applications.

Chemical Compatibilities

For the pH range 2-12, the packing is suitable for dilute acids and alkalis, oils, solvents, steam and water.

Sizes Available

All square sections are available from 3mm (1/8") to 25mm (1") are generally available from stock in differing lengths depending on the cross section. Larger and rectangular sections can also be manufactured to order. PILOTPACK 8022 packing can also be supplied in preformed or die formed rings.

PILOTPACK 8113

For High Temperature Valves & Pumps



Rotating Applications

| | |
|--------------------|--------------|
| Speed: | 10 m/s |
| Temperature Range: | up to 400°C |
| Maximum Pressure: | up to 10 bar |

Valve Applications

| | |
|--------------------|---------------|
| Speed: | 1 m/s |
| Temperature Range: | up to 400°C |
| Maximum Pressure: | up to 100 bar |

Reciprocating Applications

| | |
|--------------------|--------------|
| Speed: | 1 m/s |
| Temperature Range: | up to 400°C |
| Maximum Pressure: | up to 70 bar |

Description

PILOTPACK 8113 is a greasy, graphited, non-asbestos packing. Each strand of the high temperature BCX yarn is impregnated with a graphite lubricant to provide a good, firm, uniformly lubricated packing with a low co-efficient of friction.

It is designed for use in rotary, reciprocating, valve and static equipment, across a range of product applications, but especially designed for hot air and gases up to a maximum temperature of 400°C (750°F).

Applications

- Designed especially for use on hot air and gases
- Suitable for use on abrasive slurries, hydrocarbons, sea water & weak chemicals
- Designed to operate across a full range of equipment
- Easy to install and manufactured to give a long operating life

Chemical Compatibilities

For the pH range 3-13, the packing is chemically inert. For steam applications, please consult Beldam Crossley.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock and supplied in differing lengths depending on the cross section. Larger and rectangular sections can be manufactured to order. Packing can also be supplied in preformed or die formed rings.

PILOTPACK 8500

For Extremely High Temperature Valves



Rotating Applications

| | |
|--------------------|--------------|
| Speed: | 1 m/s |
| Temperature Range: | up to 700°C |
| Maximum Pressure: | up to 10 bar |

Valve Applications

| | |
|--------------------|---------------|
| Speed: | 1 m/s |
| Temperature Range: | up to 700°C |
| Maximum Pressure: | up to 150 bar |

Description

PILOTPACK 8500 has been designed for very high temperature valve, slow rotating and static applications. Each strand of the high temperature BCX yarn is impregnated with a high temperature lubricant and additional mechanical strength provided by high temperature nickel alloy wire reinforcement. The resultant packing is dense, firm and uniformly lubricated with a low co-efficient of friction.

It is designed for use in rotary, reciprocating, valve and static equipment, across a range of product applications, but especially designed for hot air and gases up to a maximum temperature of 750°C.

Applications

- Designed especially for use on hot air and gases
- Suitable for use on slow rotating equipment
- Ideal for sealing high temperature ducting and exhaust manifolds
- Designed to operate across a full range of equipment
- Easy to install and manufactured to give a long operating life

Chemical Compatibilities

For the pH range 3-13, the packing is chemically inert. For steam applications, please consult Beldam Crossley.

Sizes Available

All square sections from 3mm (1/8") to 25mm (1") are generally available from stock and supplied in differing lengths depending on the cross section. Larger and rectangular sections can be manufactured to order. Packing can also be supplied in preformed or die formed rings.

PILOTPACK 3800

For Chemical Tanker Hatches

Static Applications

Temperature Range: up to 100°C
 Typical Pressure: up to 2 bar



Description

PILOT LIDPACK 3800 is a major development in tank lid sealing. The multi-layered construction utilises an elastomeric core combined with layers of PTFE tape and chemically inert braid. This is given further protection from chemical attack with additional layers of PTFE tape and durable, high strength, PTFE yarn. The multi-layer construction gives excellent compression and spring-back properties ensuring an effective, tight seal every time the hatch lid is closed.

PILOT LIDPACK 3800 replaces PILOT LIDPACK 3500, the original Beldam Crossley tanker hatch seal.

Applications

- Designed especially for use on chemical tanker hatch lids
- Suitable for cargoes at 'ambient' temperatures
- Easy to install and manufactured to give a long operating life

Approvals

United States Coastguard for use with Propylene Oxide and Butylene Oxide (1,2-Epoxybutane)

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert.

Sizes Available

All square sections from 10mm to 50mm square section are available as standard. Other sizes are available on request.

PILOT LIDPACK 3800 can be supplied in continuous coils or as a formed and welded ring.

PILOTPACK 3801L

For Light Hydrocarbon Cargoes

Static Applications

Temperature Range: up to 100°C
 Typical Pressure: up to 2 bar



Description

PILOTPACK 3801L has been developed specifically for light oils and hydrocarbon cargoes. The unique construction utilises the inclusion of additional PTFE and manufacturing processes in order to provide a seal that is impermeable to light hydrocarbon cargoes such as Naphtha. PILOTPACK 3801L has been extensively tested at elevated pressure and is capable of sealing the most difficult cargoes even above typical operating pressure.

Applications

- Designed especially for use on chemical tanker hatch lids
- Ideal for use with light oils and distillates
- Suitable for cargoes at 'ambient' temperatures
- Easy to install and manufactured to give a long operating life

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert.

Sizes Available

All square sections from 10mm to 50mm square section are available as standard. Other sizes are available on request.

PILOTPACK 3801L can be supplied in continuous coils or as a formed and welded ring.

PILOTPACK 3900

For Hot Cargoes



Static Applications

Temperature Range: up to 250°C
 Typical Pressure: up to 2 bar

Description

PILOT LIDPACK 3900 is a major development in tank lid sealing. The multi-layered construction utilises an elastomeric core combined with layers of PTFE tape and texturised glass fibre braid. This is given further protection from chemical attack with additional layers of PTFE tape and durable, high strength, PTFE yarn. The multi-layer construction gives excellent compression and spring-back properties ensuring an effective, tight seal every time the hatch lid is closed.

Applications

- Designed especially for use on chemical tanker hatch lids
- Suitable for cargoes at elevated temperatures
- Ideal for use with Bitumen, Asphalt and Sulphur
- Easy to install and manufactured to give a long operating life

Chemical Compatibilities

For the pH range 0-14, the packing is chemically inert.

Sizes Available

All square sections from 10mm to 50mm square section are available as standard. Other sizes are available on request.

PILOT LIDPACK 3900 can be supplied in continuous coils or as endless rings

For more information contact us on:

T: +44 (0) 1204 675700

E: sales@beldamcrossley.co.uk

PILOT Lidpack Range

For all types of Hatch, Lid & Door



Braided Hatch & Lid Seals

Beldam Crossley have a wide range of braided hatch and lid seals to cover most applications. They are available in a wide range of materials and sizes and can be configured to meet your specific requirements. Typical uses include:

- Road and Rail tanker hatches
- Large static vessel lids
- High temperature oven and furnace door doors and access panels



Moulded & Strip Rubber

Beldam Crossley moulded and strip rubber products are ideally suited as:

- Large hatch and lid seals
- Container doors seals
- Environmental seals



Tadpole Seal Range

Pilot Tadpole seals have been developed primarily as a high temperature static seal. They are ideally suited for:

- Furnace and Oven doors and panels
- Incinerator access panels
- Pressure seals between chambers

Low temperature versions are also available with a high-recovery elastomeric core.

Beldam Crossley PILOTSEAL

Your First Choice In Sealing Products

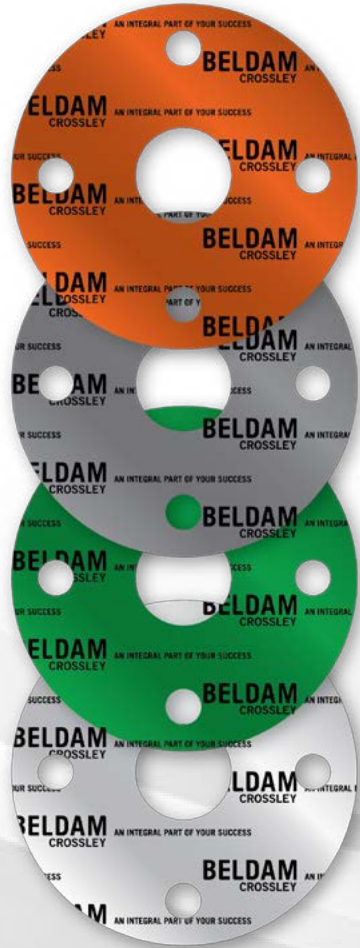
Beldam Crossley PILOTSEAL sheet jointing and rubber products have been developed to satisfy the requirements of the most demanding industrial applications.

The PILOTSEAL Standard 16 jointing and gasket range comprises of:

- Compressed non-asbestos fibre sheet for general service applications, steam and oils
- Filled and expanded PTFE sheet for severe chemical duties
- Reinforced graphite and mica for higher temperatures
- Industrial rubber for low pressure and temperature

The new PILOTSEAL compressed fibre sheet jointing styles now follow the Beldam Crossley branding and colour scheme and so the following grades are now supplied in the following colours:

| | |
|---------------|--------|
| PILOTSEAL 178 | Orange |
| PILOTSEAL 34 | White |
| PILOTSEAL 172 | Grey |
| PILOTSEAL 125 | Green |



For more information contact us on:

T: +44 (0) 1204 675700

E: sales@beldamcrossley.co.uk

PILOTSEAL Standard 16 Technical Overview

| Packing Style | Product Description | Max Temp Air °C | Max Temp Steam °C | Water | Oils | Weather / Ozone | Food |
|----------------------|--|-----------------|-------------------|-------|------|-----------------|------|
| PILOTSEAL 34 | Grade X material for arduous general service applications | 400 | 250 | ♦♦ | ♦♦ | ♦♦ | |
| PILOTSEAL 125 | Grade Y material for light industrial duties | 200 | 180 | ♦♦ | ♦♦ | ♦♦ | |
| PILOTSEAL 178 | Superior quality and performance Grade Y material for general service | 400 | 200 | ♦♦ | ♦♦ | ♦♦ | |
| PILOTSEAL 172 | Excellent quality Grade Y material with anti-stick coating | 400 | 200 | ♦♦ | ♦♦ | ♦♦ | |
| PILOTSEAL 500 | Soft and conformable expanded PTFE for most chemical duties | 260 | | ♦♦♦ | ♦♦♦ | ♦♦♦ | ♦♦♦ |
| PILOTSEAL 550 | Red filled PTFE for use with most chemicals, acids and alkalis | 260 | | ♦♦♦ | ♦♦♦ | ♦♦♦ | ♦♦♦ |
| PILOTSEAL 570 | Blue filled PTFE for light bolt loading applications | 260 | | ♦♦♦ | ♦♦♦ | ♦♦♦ | ♦♦♦ |
| PILOTSEAL 590 | White filled PTFE for a broad range of chemical duties | 260 | | ♦♦♦ | ♦♦♦ | ♦♦♦ | ♦♦♦ |
| PILOTSEAL 2T | Exfoliated graphite with stainless steel tanged insert for additional strength | 450 | 500+ | ♦♦♦ | ♦♦♦ | ♦♦♦ | ♦♦♦ |
| PILOTSEAL 201 | Mica based jointing for use with extremely hot gases | 1000 | 280 | ♦ | ♦ | ♦♦♦ | |
| PILOTSEAL EPDM | Rubber sheet and rolls with good chemical resistance | 100 | | ♦♦ | ♦♦ | ♦♦ | |
| PILOTSEAL FKM | Excellent quality rubber roll and sheet with superior weather and ozone resistance | 210 | | ♦♦ | ♦♦ | ♦♦ | |
| PILOTSEAL Commercial | Economical rubber grade for use in light service industrial applications | 70 | | ♦♦ | ♦♦ | ♦♦ | |
| PILOTSEAL Neoprene | Universal rubber compound with excellent resistance to flame, oils, abrasion and ozone | 70 | | ♦♦ | ♦♦ | ♦♦ | |
| PILOTSEAL Nitrile | A universal style with good resistance to oils, water and weather | 70 | | ♦♦ | ♦♦ | ♦♦ | |
| PILOTSEAL BDJ | Ideally suited to continuous steam duty | 190 | 190 | ♦♦ | ♦♦ | ♦♦ | |

PILOTSEAL 178

Grade Y



Physical Properties

| | | |
|------------------|--------------------|-------------------------|
| Density | | 2.0g/cc |
| Tensile Strength | ASTM F152 | 12MPa |
| Compression | ASTM F36 | 9% |
| Recovery | ASTM F36 | 50% Min |
| Residual Stress | BS 7531 (300°C) | 23MPa |
| | DIN 52913 | 29MPa |
| Gas Leakage | BS 7531 | <1.0cc/min |
| | ASTM Oil 1 | Thickness Increase 2.0% |
| IRM 903 Oil | Thickness Increase | 5.0% |
| ASTM Fuel B | Thickness Increase | 4.0% |

Description

PILOTSEAL 178 is a jointing material consisting of high quality compressed fibre manufactured from a blend of special heat resistant fibres with an elastomeric binder.

Applications

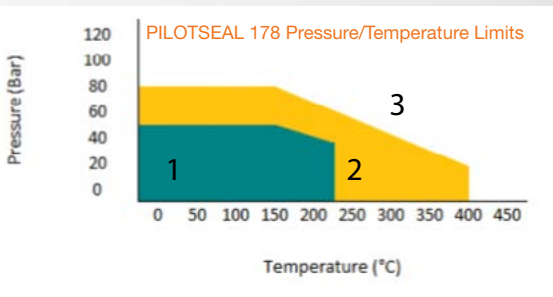
PILOTSEAL 178 is suitable for use with hot and cold water, steam, fuels, oils and gases

Approvals and Compliance

DIN-DVGW (Gas Industry)
WRAS Potable Water
BS7531 Grade Y

Sizes Available

Thickness Range 0.4mm to 6.0mm
Standard Sheet Size 1.5m x 1.5m



Key

- 1 Suitable subject to chemical compatibility
- 2 Suitable in some cases— please contact Beldam Crossley
- 3 Contact Beldam Crossley

PILOTSEAL 34

Grade X



Physical Properties

| | | |
|------------------|--------------------|-------------------------|
| Density | | 1.75g/cc |
| Tensile Strength | ASTM F152 | 9-11MPa |
| Compression | ASTM F36 | 9% |
| Recovery | ASTM F36 | 55% Min |
| Residual Stress | BS 7531 (300°C) | 26MPa |
| | DIN 52913 | 32MPa |
| Gas Leakage | BS 7531 | <1.0cc/min |
| | ASTM Oil 1 | Thickness Increase 1.0% |
| IRM 903 Oil | Thickness Increase | 2.5% |
| ASTM Fuel B | Thickness Increase | 3.0% |

Description

PILOTSEAL 34 is a superior quality sheet jointing material with excellent mechanical properties and suitable for a wide variety of applications.

Applications

PILOTSEAL 34 is suitable for use with hot and cold water, steam, fuels, oils, solvents, gases and oxygen.

Approvals and Compliance

DIN-DVGW (Gas Industry)

WRAS Potable Water

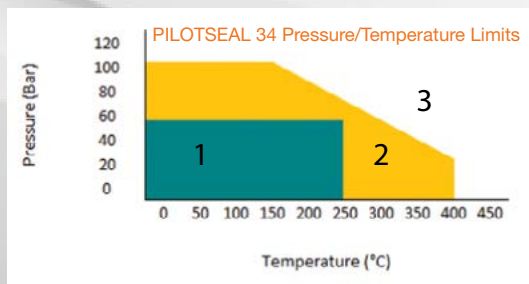
BAM (oxygen service) up to 90°C and 160 bar

BS7531 Grade X

Sizes Available

Thickness Range 0.25mm to 6.0mm

Standard Sheet Size 1.5m x 1.5m



Key

- 1 Suitable subject to chemical compatibility
- 2 Suitable in some cases— please contact Beldam Crossley
- 3 Contact Beldam Crossley

PILOTSEAL 125

Economy Grade



Physical Properties

| | | |
|------------------|-----------------|-------------------------|
| Density | | 1.95g/cc |
| Tensile Strength | ASTM F152 | 11MPa |
| Compression | ASTM F36 | 8% |
| Recovery | ASTM F36 | 50% Min |
| Residual Stress | BS 7531 (300°C) | 17MPa |
| | DIN 52913 | 23MPa |
| | BS 7531 | <1.0cc/min |
| Gas Leakage | | Thickness Increase 1.0% |
| ASTM Oil 1 | | Thickness Increase 2.0% |
| IRM 903 Oil | | Thickness Increase 3.0% |
| ASTM Fuel B | | |

Description

PILOTSEAL 125 is a compressed sheet material based on aramid fibre with a nitrile rubber binder

Applications

PILOTSEAL 125 is a general service material for use on many applications including hot and cold water, low pressure steam, oils, fuels, gases and a range of chemicals

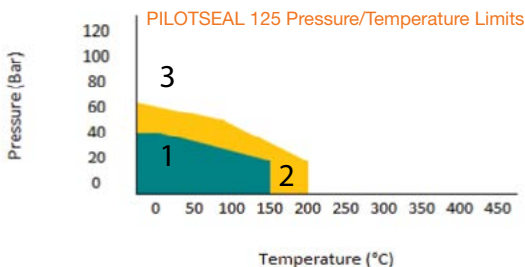
Approvals and Compliance

WRAS Potable Water

Sizes Available

Thickness Range 0.4mm to 6.0mm

Standard Sheet Size 1.5m x 1.5m



Key

- 1 Suitable subject to chemical compatibility
- 2 Suitable in some cases— please contact Beldam Crossley
- 3 Contact Beldam Crossley

PILOTSEAL 172

Grade Y - Anti-Stick



Physical Properties

| | | |
|------------------|-----------------|-------------------------|
| Density | | 2.0g/cc |
| Tensile Strength | ASTM F152 | 12MPa |
| Compression | ASTM F36 | 9% |
| Recovery | ASTM F36 | 50% Min |
| Residual Stress | BS 7531 (300°C) | 23MPa |
| | DIN 52913 | 29MPa |
| Gas Leakage | BS 7531 | <1.0cc/min |
| ASTM Oil 1 | | Thickness Increase 2.0% |
| IRM 903 Oil | | Thickness Increase 5.0% |
| ASTM Fuel B | | Thickness Increase 4.0% |

Description

PILOTSEAL 172 is a good quality compressed sheet based on aramid fibres with a nitrile rubber binder. The graphite finish provides excellent anti-stick properties.

Applications

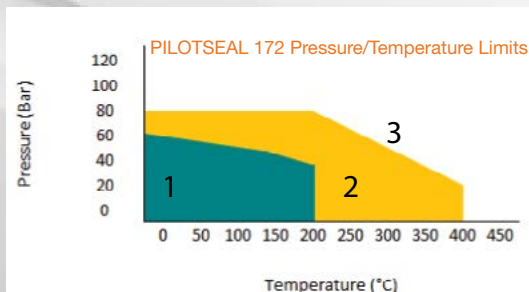
PILOTSEAL 172 is suitable for use with hot and cold water, steam, fuels, oils, solvents and a wide range of chemicals.

Approvals and Compliance

DIN-DVGW (Gas Industry)
WRAS Potable Water
BS7531 Grade Y

Sizes Available

Thickness Range 0.25mm to 6.0mm
Standard Sheet Size 1.5m x 1.5m



Key

- 1 Suitable subject to chemical compatibility
- 2 Suitable in some cases— please contact Beldam Crossley
- 3 Contact Beldam Crossley

PILOTSEAL 500

Expanded PTFE - White



Physical Properties

| | | |
|------------------|-------------|---------------------------|
| Compression | ASTM F36 | 68% |
| Recovery | ASTM F36 | 12% Min |
| Residual Stress | DIN @ 175°C | 32MPa |
| Creep Relaxation | ASTM F38 | 32% @ 100°C 16% @ 24°C |
| Liquid Leakage | ASTM F37 | 0.02ml/hr (Nitrogen) |

Description

PILOTSEAL 500 is manufactured from 100% pure multi-directional expanded PTFE. It is soft and conformable and can be compressed with low bolt loads.

Applications

PILOTSEAL 500 is ideally suited for low bolt torque applications such as FRP, porcelain, plastic and glass lined piping and vessels. It has universal chemical resistance (except molten alkali metals and elemental fluorine).

Approvals and Compliance

Conforms with FDA21 CFR 177.1550 regulations

Sizes Available

| | |
|---------------------|----------------|
| Thickness Range | 0.5mm to 6.0mm |
| Standard Sheet Size | 1.5m x 1.5m |

PILOTSEAL 550

Filled PTFE with Silica - Red



Physical Properties

| | | |
|------------------|-------------|-------------|
| Density | | 2.2g/cc |
| Tensile Strength | ASTM F152 | 15MPa |
| Compression | ASTM F36 | 7% |
| Recovery | ASTM F36 | 40% Min |
| Residual Stress | DIN @ 175°C | 32MPa |
| Creep Relaxation | ASTM F38 | 23% |
| Gas Permeability | DIN 3535 | <0.01cc/min |
| Liquid Leakage | ASTM F37 | 0.21ml/hr |

Description

PILOTSEAL 550 is a superior quality and performance biaxially orientated PTFE sheet material with a silica based filler

Applications

PILOTSEAL 550 is a universal grade of filled PTFE suitable for many general applications. It is especially well suited for use with strong acids and alkalis, solvents, fuels, water, steam and chlorine.

PILOTSEAL 550 has very low gas permeability and excellent creep resistance properties.

Approvals and Compliance

BAM Oxygen service

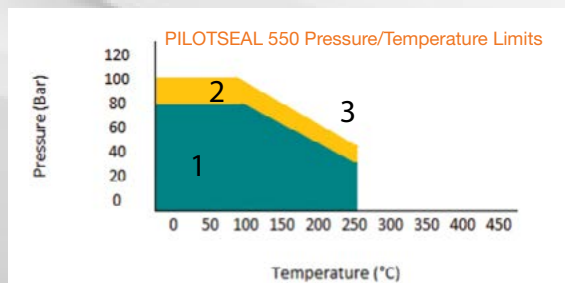
BAM Chemical resistance against Ethylene Oxide

Conforms with FDA21 CFR 177.1550 regulations

Sizes Available

Thickness Range 0.75mm to 3.0mm

Standard Sheet Size 1.5m x 1.5m



Key

- 1 Suitable subject to chemical compatibility
- 2 Suitable in some cases— please contact Beldam Crossley
- 3 Contact Beldam Crossley

PILOTSEAL 570

PTFE with Glass Filler - Blue



Physical Properties

| | | |
|------------------|-------------|-------------|
| Density | | 1.4g/cc |
| Tensile Strength | ASTM F152 | 11MPa |
| Compression | ASTM F36 | 40% |
| Recovery | ASTM F36 | 30% Min |
| Residual Stress | DIN @ 175°C | 25MPa |
| Creep Relaxation | ASTM F38 | 35% |
| Gas Permeability | DIN 3535 | <0.02cc/min |
| Liquid Leakage | ASTM F37 | 0.23ml/hr |

Description

PILOTSEAL 570 is a superior performance and quality biaxially orientated PTFE sheet material which is highly conformable which makes it ideally suited to both standard and irregular flanges.

Applications

PILOTSEAL 570 is specially designed for low bolt torque applications and irregular flanges. It is ideally suited for use on glass lined vessels, ceramic or plastic flanges or any application where there is an uneven surface finish and is suitable for use with a wide spectrum of chemicals across the whole pH range.

PILOTSEAL 570 has extremely low gas permeability and excellent creep resistance

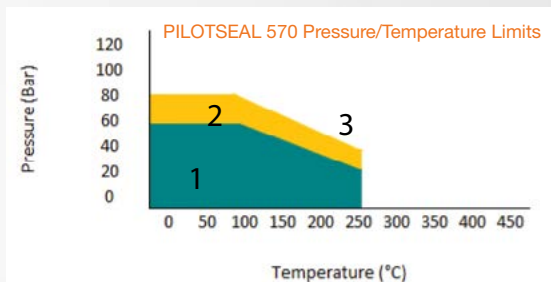
Approvals and Compliance

Conforms to the requirements of FDA21 CFR 177.1550 regulations
TA- Luft VDI 2440

Sizes Available

Thickness Range 0.75mm to 3.0mm

Standard Sheet Size 1.5m x 1.5m



Key

- 1 Suitable subject to chemical compatibility
- 2 Suitable in some cases— please contact Beldam Crossley
- 3 Contact Beldam Crossley

PILOTSEAL 590

Filled PTFE with Barium Sulphate - White



Physical Properties

| | | |
|------------------|-------------|-------------|
| Density | | 3.0g/cc |
| Tensile Strength | ASTM F152 | 14MPa |
| Compression | ASTM F36 | 5% |
| Recovery | ASTM F36 | 40% Min |
| Residual Stress | DIN @ 175°C | 30MPa |
| Creep Relaxation | ASTM F38 | 21% |
| Gas Permeability | DIN 3535 | <0.01cc/min |
| Liquid Leakage | ASTM F37 | 0.22ml/hr |

Description

PILOTSEAL 590 is a high performance biaxially orientated PTFE sheet material with barium sulphate filler

Applications

PILOTSEAL 590 is a general purpose grade for sealing applications across the whole pH range. It is suitable for use with hydrofluoric acid (but not pure liquid hydrogen fluoride).

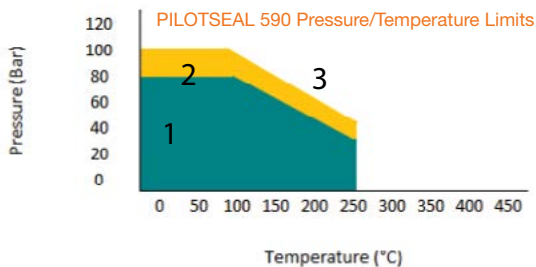
Approvals and Compliance

BAM gaseous and liquid oxygen service
Conforms with FDA21 177.1550 regulations

Sizes Available

Thickness Range 0.75mm to 3.0mm

Standard Sheet Size 1.5m x 1.5m



Key

- 1 Suitable subject to chemical compatibility
- 2 Suitable in some cases— please contact Beldam Crossley
- 3 Contact Beldam Crossley

PILOTSEAL 2T

Tang Reinforced Graphite



Physical Properties

| | | |
|-------------------|------------------|------------|
| Density | | 1.0g/cc |
| Compression | ASTM F36A-66 | 30-35% |
| Recovery | ASTM F36A-66 | 15-20% Min |
| Residual Stress | DIN 52913(300°C) | >45% MPa |
| Number of inserts | | 1 |
| Ash content | | Max 2 % |
| Chlorine content | | Max 50 ppm |

Description

PILOTSEAL 2T is constructed from exfoliated graphite laminated and reinforced with a tanged stainless steel 316 insert. The result of the adhesive free lamination process is a robust gasket material with excellent mechanical strength.

Applications

PILOTSEAL 2T is ideally suited for applications where both high operating temperatures and a wide chemical resistance are required.

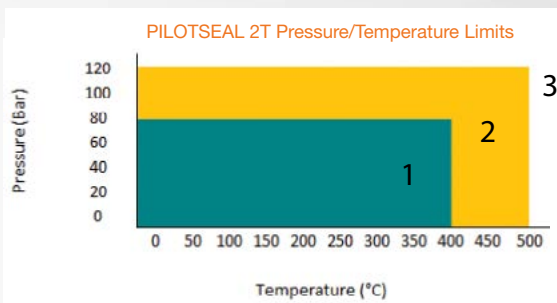
The high mechanical strength also ensures that PILOTSEAL 2T gaskets can seal high internal pressures at high temperatures.

Approvals and Compliance

BAM for oxygen

Sizes Available

| | |
|---------------------|----------------|
| Thickness Range | 1.0mm to 3.0mm |
| Standard Sheet Size | 1.5m x 1.5m |



Key

- 1 Suitable subject to chemical compatibility
- 2 Suitable in some cases – please contact Beldam Crossley
- 3 Contact Beldam Crossley

PILOTSEAL 201

For Extremely High Temperatures



Physical Properties

| | | |
|------------------|---------------|------------------------|
| Density | DIN52910 | 1.9g/cc |
| Tensile Strength | ASTM F36J | 20N/mm ² |
| Compression | ASTM F36J | 25% |
| Recovery | ASTM F36J | 35% Min |
| Creep Strength | DIN 52913 | |
| | 50MPa 300°C | +/-40N/mm ² |
| | 7252psi 572°F | 5.8psi |

Description

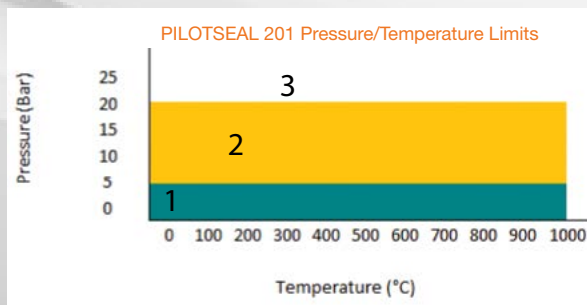
PILOTSEAL 201 is a mica based sheet jointing material that has been specifically designed for applications with constant exposure to very high operating temperatures, typically in excess of 800°C

Applications

PILOTSEAL 201 is ideally suited for use with extremely hot gases typically encountered on exhaust manifolds, gas turbines, gas and oil burners and heat exchangers.

Sizes Available

| | |
|---------------------|----------------|
| Thickness Range | 1.0mm to 2.0mm |
| Standard Sheet Size | 1.0m x 1.0m |



Key

- 1 Suitable subject to chemical compatibility
- 2 Suitable in some cases— please contact Beldam Crossley
- 3 Contact Beldam Crossley

PILOTSEAL EPDM



Physical Properties*

| | | |
|-------------------------------|----------------|------------------------|
| Base Polymer | EPDM | |
| Indentation Hardness | BS903 Part A26 | 70IRHD -4 +5 |
| Specific Gravity | BS903 Part A1 | 1.22 g/cm ³ |
| Tensile Strength Min. | BS903 Part A2 | 9MPa |
| Elongation @ Break Min. | BS903 Part A2 | 200% |
| Min. Cont. Work Temp. | -15°C | |
| Max. Cont. Work Temp. | 100°C | |
| Max. Intermittent Work Temp. | 110°C | |
| Compression Set 70°C 22 Hours | BS903 Part A6 | 20% |

Description

PILOTSEAL EPDM is available in sheet and rolls and is typically used in applications where resistance to Ozone, Ageing and UV are required.

Applications and Characteristics

| | |
|--------------------------|-----------------|
| Food Use | Not recommended |
| Water Use | Fair |
| Mineral Oil Use | Not recommended |
| Abrasion resistance | Good |
| Ozone weather resistance | Excellent |
| Flame retardancy | Not recommended |
| Electrical resistance | Not recommended |
| General Purpose | Not recommended |

Approvals and Compliance

WRAS approval for cold water only

Sizes Available

| | | |
|-----------------|-----------|-----------|
| Thickness Range | 1 to 6mm | 10m rolls |
| Thickness Range | 8 to 25mm | 5m rolls |
| Standard Width | 1.4m | |

* Typical Shore Hardness range 40–70 also available

PILOTSEAL FKM

Commercial Fluoroelastomer



Physical Properties*

| | | |
|-------------------------------|------------------|------------------------|
| Base Polymer | Fluoroelastomer | |
| Indentation Hardness | ASTM D2240 00 | 70 degrees |
| Specific Gravity | ASTM D792 | 1.98 g/cm ³ |
| Tensile Strength Min. | ASTM D412 | 6MPa |
| Elongation @ Break Min. | ASTM D412 | 200% |
| Min. Cont. Work Temp. | -30°C | |
| Max. Cont. Work Temp. | 210°C | |
| Max. Intermittent Work Temp. | 210°C | |
| Compression Set 70°C 22 Hours | ASTM D395 Meth B | 50% |

Description

PILOTSEAL FKM - is a Fluoroelastomer with outstanding resistance to oxygen, ozone, weather, flame and chemicals. Suitable for higher temperature applications within the Petrochemical, Pharmaceutical and Aerospace Industries .

Applications and Characteristics

| | |
|--------------------------|-----------------|
| Food Use | Not recommended |
| Water Use | Fair |
| Mineral Oil Use | Good |
| Abrasion resistance | Moderate |
| Ozone weather resistance | Excellent |
| Flame retardancy | Not recommended |
| Electrical resistance | Moderate |
| General Purpose | Not recommended |

DuPont grades also available on request

Sizes Available

| | | |
|-----------------|-----------|-----------|
| Thickness Range | 1 to 6mm | 10m rolls |
| Thickness Range | 8 to 25mm | 5m rolls |
| Standard Width | 1.2m | |

* Typical Shore Hardness range 40—70 also available

PILOTSEAL Commercial



Physical Properties*

| | |
|-------------------------------|---------------------------------|
| Base Polymer | Natural/SBR |
| Indentation Hardness | ASTM D224000 65 Shore A -4/+5 |
| Specific Gravity | ASTM D792 1.5 g/cm ³ |
| Tensile Strength Min. | ASTM D412 3MPa |
| Elongation @ Break Min. | ASTM D412 250% |
| Min. Cont. Work Temp. | - 30°C |
| Max. Cont. Work Temp. | 70°C |
| Max. Intermittent Work Temp. | 90°C |
| Compression Set 70°C 22 Hours | ASTM D395 Meth B 30% |

Description

Beldam Crossley PILOTSEAL Commercial grade rubber is manufactured from a high grade natural rubber (latex compound) mixed with SBR (Styrene Butadiene Rubber) in order to provide a hard wearing general purpose material.

PILOTSEAL Commercial is suitable for applications where there is no contact with oils and greases and not subject to weather and environmental changes.

Applications and Characteristics

| | |
|--------------------------|-----------------|
| Food Use | Not recommended |
| Water Use | Fair |
| Mineral Oil Use | Intermittent |
| Abrasion resistance | Moderate |
| Ozone weather resistance | Not recommended |
| Flame retardancy | Not recommended |
| Electrical resistance | Not recommended |
| General Purpose | Excellent |

Sizes Available

| | | |
|-----------------|-----------|-----------|
| Thickness Range | 1 to 6mm | 10m rolls |
| Thickness Range | 8 to 25mm | 5m rolls |
| Standard Width | 1.4m | |

* Typical Shore Hardness range 40–70 also available

PILOTSEAL Neoprene



Physical Properties*

| | | |
|-------------------------------|------------------|------------------------|
| Base Polymer | Neoprene Rubber | |
| Indentation Hardness | ASTM D2240 00 | 60 degrees |
| Specific Gravity | ASTM D792 | 1.38 g/cm ³ |
| Tensile Strength Min. | ASTM D412 | 13MPa |
| Elongation @ Break Min. | ASTM D412 | 250% |
| Min. Cont. Work Temp. | | - 30°C |
| Max. Cont. Work Temp. | | 70°C |
| Max. Intermittent Work Temp. | | 90°C |
| Compression Set 70°C 22 Hours | ASTM D395 Meth B | 25% |

Description

Chloroprene Rubber is normally abbreviated to CR, but more commonly known as Neoprene and is a synthetic Polymer. Rubber Sheetting described as Neoprene will be a blend of polymers including a percentage of Chloroprene. Specification Grades will contain higher levels of Chloroprene than commercial grades. Typically used in applications where Flame Retardency and Ozone Resistance are required.

Applications and Characteristics

| | |
|--------------------------|-----------------|
| Food Use | Not recommended |
| Water Use | Fair |
| Mineral Oil Use | Good |
| Abrasion resistance | Good |
| Ozone weather resistance | Excellent |
| Flame retardency | Good |
| Electrical resistance | Not recommended |
| General Purpose | Not recommended |

Sizes Available

| | | |
|-----------------|-----------|-----------|
| Thickness Range | 1 to 6mm | 10m rolls |
| Thickness Range | 8 to 25mm | 5m rolls |
| Standard Width | 1.4m | |

* Typical Shore Hardness range 40–70 also available

PILOTSEAL Nitrile

Physical Properties*

| | | |
|-------------------------------|------------------|------------------------|
| Base Polymer | NBR | |
| Indentation Hardness | ASTM D224000 | 60 Shore A -4/+5 |
| Specific Gravity | ASTM D792 | 1.25 g/cm ³ |
| Tensile Strength Min. | ASTM D412 | 8.4MPa |
| Elongation @ Break Min. | ASTM D412 | 400% |
| Min. Cont. Work Temp. | | c-25°C |
| Max. Cont. Work Temp. | | 70°C |
| Max. Intermittent Work Temp. | | 90°C |
| Compression Set 70°C 22 Hours | ASTM D395 Meth B | 25% |



Description

Butadiene Acrylonitrile Rubber is normally abbreviated to NBR, but is more commonly known as Nitrile and is a synthetic Polymer. Typically used in applications where resistance to oils and chemicals are required.

Applications and Characteristics

| | |
|--------------------------|-----------------|
| Food Use | Not recommended |
| Water Use | Fair |
| Mineral Oil Use | Fair |
| Abrasion resistance | Moderate |
| Ozone weather resistance | Moderate |
| Flame retardency | Not recommended |
| Electrical resistance | Moderate |
| General Purpose | Excellent |

Sizes Available

| | | |
|-----------------|-----------|-----------|
| Thickness Range | 1 to 6mm | 10m rolls |
| Thickness Range | 8 to 25mm | 5m rolls |
| Standard Width | 1.4m | |

* Typical Shore Hardness range 40–70 also available

PILOTSEAL BDJ



Physical Properties

| | |
|------------------------------|-------------------------------|
| Base Polymer | EPM |
| Indentation Hardness | 70 degrees |
| Specific Gravity | 1.35+/-0.02 g/cm ³ |
| Max. Cont. Work Temp. | 190°C |
| Max. Intermittent Work Temp. | 190°C |

Description

PILOTSEAL Boiler Door Joint sheet material is constructed from high quality polymer, primarily for use as a boiler door joint. The high temperature capability combined with the sealing resilience expected from an elastomeric material make it ideal for steam service duty. Boiler door joints, gaskets on water heaters, air receivers, paper mill drying cylinders, and many other gasket services that use similar seals.

No grease, jointing compound or proprietary paste is needed to achieve an efficient seal, even on imperfect surfaces that may cause problems with other gaskets. After use the gasket can be easily removed eliminating the need to scrape

Applications and Characteristics

| | |
|--------------------------|-----------------|
| Food Use | Not recommended |
| Water Use | Fair |
| Mineral Oil Use | Not recommended |
| Abrasion resistance | Fair |
| Ozone weather resistance | Fair |
| Flame retardancy | Good |
| Electrical resistance | Not recommended |
| General Purpose | Not recommended |

Sizes Available

| | |
|-----------------|------|
| Thickness Range | 6mm |
| Standard Width | 1.0m |
| Standard Length | 10m |

For more information contact us on:
 T: +44 (0) 1204 675700
 E: sales@beldamcrossley.co.uk

LOCAL SERVICE IN A GLOBAL MARKET

With a highly equipped manufacturing base, Beldam Crossley supported by its partners worldwide, is perfectly placed to provide an immediate response to match every customer's requirements. Our team are technically trained to offer advice on all our products in the most demanding of applications across all industry sectors.



Part of
The Pexion®
Group

Head Office and Manufacturing

Beldam Crossley Ltd.,
Lostock Industrial Estate,
Lostock, Bolton,
BL6 4BL, England.
T: +44 (0) 1204 675700
F: +44 (0) 1204 675701
W: www.beldamcrossley.co.uk
E: sales@beldamcrossley.co.uk

BCL-HA/08/14/001



@BeldamCrossley_



Beldam Crossley