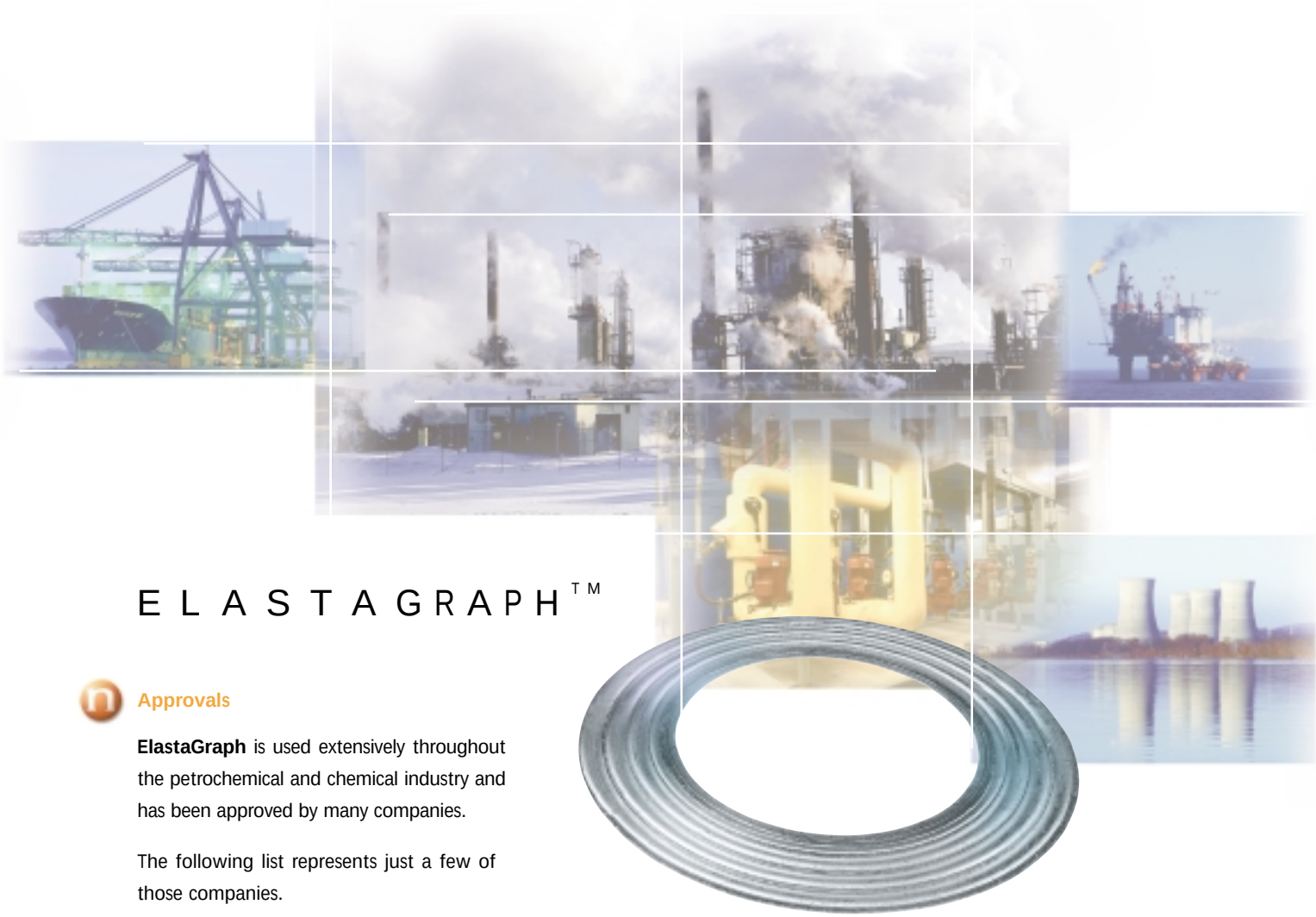


E L A S T A G R A P H ™

Approvals

ElastaGraph is used extensively throughout the petrochemical and chemical industry and has been approved by many companies.

The following list represents just a few of those companies.

Air Products
Alcoa Aluminium
BASF
BP
Chevron
Dow Chemical
DuPont
Esso/Exxon
Fina
Huntsman
Novartis
Phillips Refining
Rohm & Haas
Shell

Your Distributor

Certificate No. 18566
BS EN ISO 14001:1996

Certificate No. 18566
BS EN ISO 9001:2000

novus SEALING LIMITED

Hunsworth Lane, Cleckheaton, West Yorkshire, England BD19 3UJ
Tel: +44 (0)1274 878787 **Fax:** +44 (0)1274 862588
e-mail: mailbox@novussealing.com
www.novussealing.com

SEP

Specialised Engineering Products Ltd.
Abbey Park Industrial Estate, Romsey, Hampshire, England SO51 9DG
Tel: +44 (0)1794 830757 **Fax:** +44 (0)1794 830736
e-mail sales@specialisedengineering.co.uk **www.**specialisedengineering.co.uk

T E S T I N G G A S K E T P E R F O R M A N C E

E L A S T A G R A P H™

novus SEALING LIMITED

In partnership with SEP

Specialised Engineering Products Ltd.

Manufacturers and distributors of sealing and jointing materials.

ELASTAGRAPH™

novus SEALING LIMITED

Description

ElastaGraph gaskets are made by infusing a seamless layer of flexible graphite at varying densities and thicknesses over a corrugated metallic core. **ElastaGraph** utilises a unique corrugated pattern which increases the depth of the groove and the pitch of the corrugation. This greatly improves the gasket's sealability over other corrugated designs.

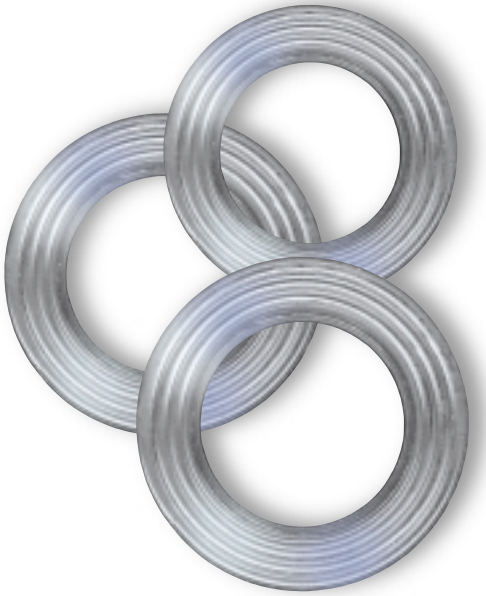
Advantages

The increased pitch and groove depth increase **ElastaGraph's** recovery or 'spring back' and reduces the surface area of the gasket for a greater unit load at initial torque as well as a lower minimum seating stress. This ensures maintenance of bolt load during thermal cycling.

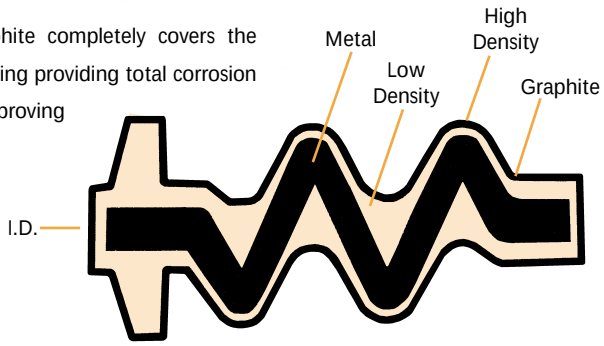
The proprietary production process allows the graphite to be applied without the 'seam' that is present in other gaskets fabricated from flexible graphite sheets. Furthermore the inner diameter of the **ElastaGraph** is encapsulated by high-density flexible graphite, increasing sealability many times over traditional designs. The traditional designs create a leak path that can contribute to stress corrosion of the metal insert. Mylar/polyester film adhesive used in traditional gasket designs which contributes to volume and bolt torque loss is also eliminated in the **ElastaGraph** production process.

ElastaGraph was developed specifically to solve fugitive emission and sealing problems. It also performs well in bolted joints that experience thermal cycling or limited initial bolt load.

ElastaGraph is the most economical way of meeting low emission requirements.



The flexible graphite completely covers the I.D. of the metal ring providing total corrosion resistance and improving sealability.



Operating Guidelines

DIN Sizes 10, 16, 25, 40 bar.
ANSI Sizes Class 150 and 300lb. Other sizes available on request. Also available for vessel and non-standard applications.

PH Range 0-14.

Temperature capabilities -
Cryogenic to 450°C oxidising
to 650°C steam

Product Composition

Sealing Material - Flexible Graphite
Widely recognised as the material of choice for applications requiring excellent thermal stability with corrosion resistance (nuclear grade available).

Metal Carrier - 316SS is the standard carrier. Other alloys available on request.

Thickness - 1.6mm

Design Factors

Traditional Constants
m - 1.5, y - 800psi (5.5MPa)
New Constants
Gb - 32psi, a - 0.718psi, Gs - 0.001psi

The world's only corrugated metal flange gasket individually moulded from exfoliated graphite

Testing Gasket Leakage Performance

Specialised Engineering Products Ltd.

Properties

- Creates a tight seal at low bolt loads
- Can be used when there is insufficient bolt load to seal spiral wound gaskets
- Outstanding resistance to thermal cycling
- Safe to handle and fit
- Lowest emissions of any corrugated graphite gaskets
- No adhesives
- Excellent thermal and chemical stability
- Tolerant to flange imperfections

Practical Benefits

- No sharp edges for safe handling
- Precompressed graphite resistant to damage and marking during fitting
- Excellent rigidity ensures easy posting between flanges
- Gasket identification prevents incorrectly sized gaskets being fitted
- Does not stick to flanges

The unique **Elastagraph** production process allows each gasket to be identified with size and class rating.

Leakage Performance
ROTT Comparison

The unique construction of the **ElastaGraph** means that it is able to create a tight seal at bolt loads lower than traditional gasket designs. This property is important when sealing both lower pressure class flanges (150 and 300) and vessel flanges where the available bolt load can be relatively low.

Figure 1 shows the minimum gasket stresses required to achieve a tight seal at increasing design pressures. The tests were conducted in accordance with the Room Temperature Operational Tightness Tests (ROTT), an industry standard procedure designed to provide values for the new gasket constants Gb, a and Gs. (These constants are intended to replace the 'm' and 'y' values used in flange calculations).

As can be seen, the **ElastaGraph** requires less stress to achieve a tight seal than competing designs including other corrugated graphite gaskets. And at a given gasket stress the **ElastaGraph** will remain tight at higher internal pressures than the other gasket materials. **A clear advantage.**

Figure 2 compares the performance of the **ElastaGraph** with a graphite filled spiral wound gasket in a Class 300lb, ANSI B16.5 raised face flange fitted with B7 bolts. The data demonstrates that the **ElastaGraph** can meet tightness requirements at bolt stresses below the ASME maximum design bolt stress and significantly below that required for a spiral wound gasket.

Figure 1

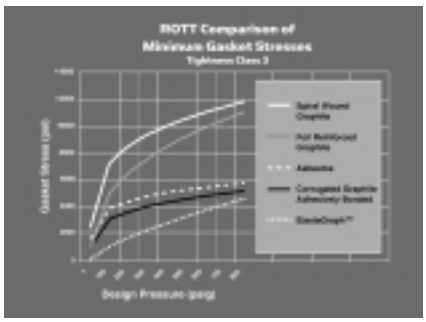


Figure 2