



# ELASTAGRAPH™

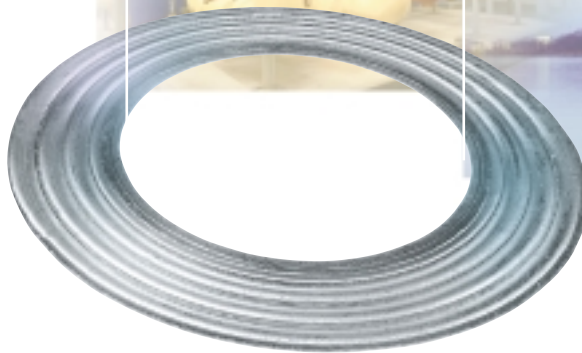
## Approvals

**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  
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Manufacturers and distributors of sealing and jointing materials.



**n 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.

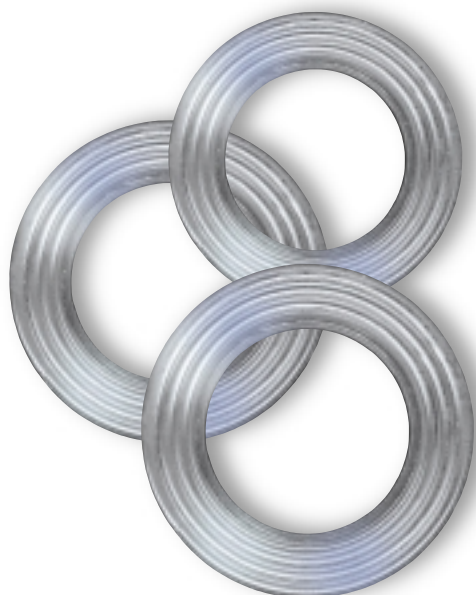
**Advantages**

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.

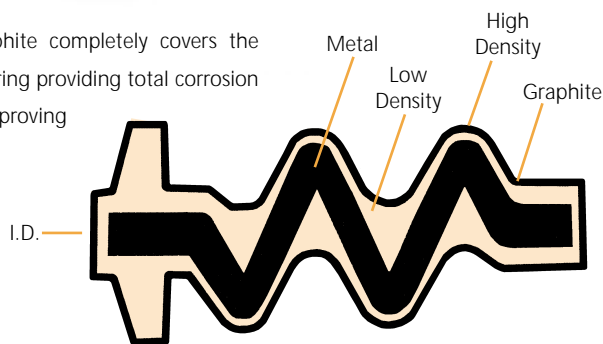
The proprietary production process allows the graphite to be applied without the 'seam' that is present in other gaskets fabricated from flexible graphite sheets. Furthermore the inner diameter of the **ElastaGraph** is encapsulated by high-density flexible graphite, increasing sealability many times 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

## 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  $G_b$ ,  $a$  and  $G_s$ . (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.**



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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

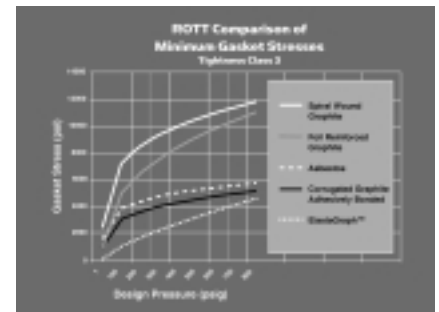


Figure 2

