

SIGRAFLEX® Foil Type E

Graphite Foil with Oxidation Inhibitor

SGL Group - The Carbon Company - supplies a special type of graphite foil which has been optimized in terms of thermal stability and service life:

SIGRAFLEX® Foil Type E.

1. Technical requirements for sealed joints

Many sectors of industry have witnessed a rise in demands, such as those for a higher performance level in power station technology. New regulations have been laid down for the construction of new plant. Consequently, the requirements imposed on sealed joints for durability and reliability have likewise become more stringent.

2. Evaluation of graphite foil grades

Graphite foils or gaskets from different suppliers are almost indistinguishable in any visual inspection.

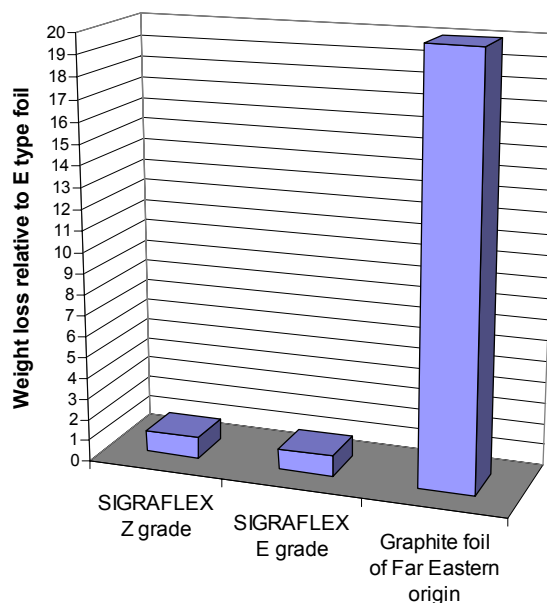
Similarly, the ash content only does not allow a comprehensive statement on the thermal stability of the graphite material.

The oxidation behavior is governed mainly by the geological location of the graphite deposit, as well as the structure and processing methods of the graphite, even if its ash content is very low.

A general statement (lower ash content corresponds to a lower oxidation rate) can therefore be made only in terms of overall tendencies.

SIGRAFLEX® Foil Type E is notable for the particular aspects under which the raw materials are selected, and for the use of a special production process.

These factors improve its thermal stability.



Comparison between various graphite foil grades, typical values

Weight loss relative to E type foil under identical test conditions, T = 670 °C

3. Addition of an oxidation inhibitor

A special oxidation inhibitor is added to the base graphite of minimum 99.5% purity to further improve the properties of SIGRAFLEX® E-foil, which results in a total purity of the finished product of at least 99%. This measure reduces the weight loss to the same level in comparison with high-purity Z grade.

The diagram clearly illustrates this.

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4. Uses

SIGRAFLEX® Foil Type E is recommended for use at high temperatures where the required service lives are longer than those afforded by standard types.

This improved graphite foil grade can be used for the manufacture of stuffing box packings or as an outer layer for cam-profile, spiral-wound or flat gaskets.

5. Essential material data

Since the thermal stability of seals depends greatly on the stresses and special assembly conditions, we recommend that the gasket supplier should always be consulted if product temperatures are close to or in excess of 450 °C.

Material type		SIGRAFLEX® Foil Type E
Ash content of graphite according to DIN 51903	%	≤ 1.0
Total chloride content	ppm	≤ 10
Total fluoride content	ppm	≤ 10

(Designation of a 0.5 mm thick E foil, density 1.0 g/cm³ → F05010E)

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