

*Flexitallic*

**Thermiculite™**

*Flexitallic®*

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*Flexitallic®*  
HIGH-PERFORMANCE SEALING



# If you've ever been burned by a graphite gasket that couldn't take the heat, your solution is Thermiculite™.

Flexitallic's new Thermiculite™\* sheet gasket will not oxidize, even at temperatures up to 1600°F.

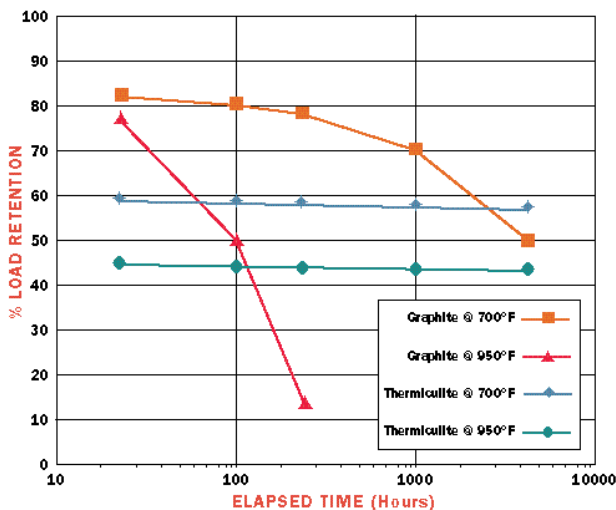
FLEXITALLIC'S new high-temperature, sheet-sealing material is comprised of chemically exfoliated and thermally exfoliated vermiculite on a tanged, 316 stainless steel core.

This revolutionary new product simulates the structure of exfoliated graphite but with one notable exception... Thermiculite Gaskets by Flexitallic maintain their integrity, even at extreme temperatures.

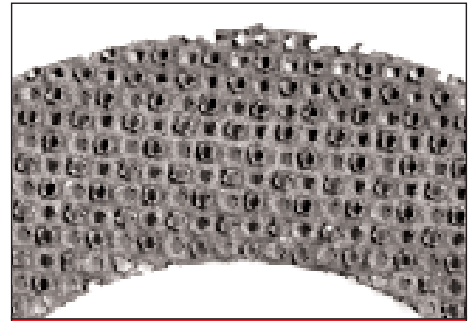
Thermiculite is thermally stable, ensuring against thermal oxidation (see Graph 2).

Independent testing at TTRL, Montreal (see Graph 4) shows that Thermiculite has excellent sealing properties.

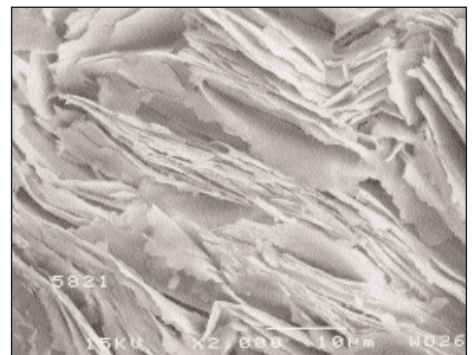
GRAPH 1  
Thermiculite Relaxation vs. Temperature in Comparison with Data from Graph 3  
(All data generated by TTRL)



This graph illustrates that, unlike graphite, the load loss at operational temperatures does not increase with time.



Oxidized graphite sheet gaskets like this one have been a common sight since the reduction in the use of asbestos. Flexitallic rose to the challenge of creating an alternative to graphite soon after a Westinghouse paper was presented at the 1990 Boston, MA ASME/IEEE Power Generation Conference ("Evaluation of Asbestos Free Gasket Materials" by W.F.Jones and B.B.Seth, Westinghouse, Power Generation Technology and Strategic Operations Division). This paper limited graphite sheet material to 650°F in five years of service. This conclusion was corroborated by the outcome of a PVRC project at the TTRL (see Graph 3).

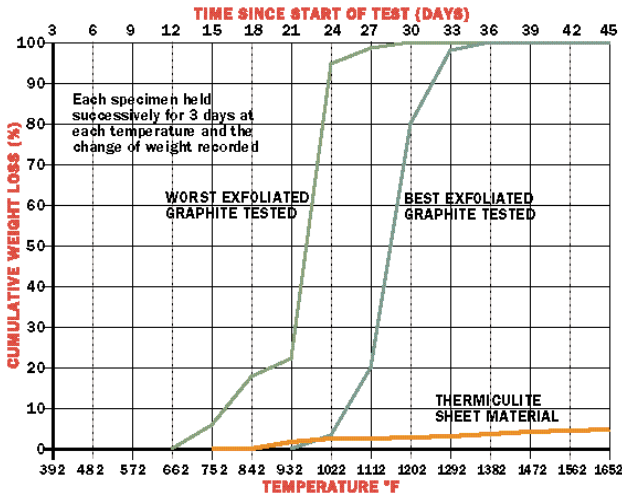


Vermiculite's thin, flexible, soft plates can be exfoliated like graphite. They retain the sealability and low porosity of graphite, but Flexitallic's new Thermiculite sheet gaskets will not oxidize at high temperatures.

\* Patented and patents pending

GRAPH 2

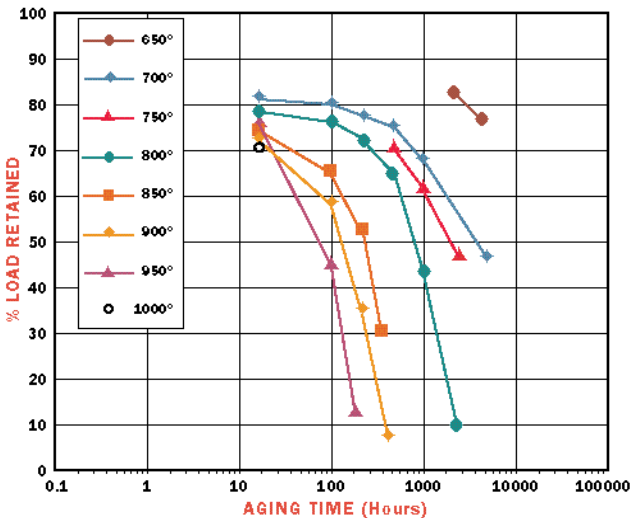
Cumulative Iso-Thermal Weight Loss Results for the Best and Worst Exfoliated Graphites Tested vs. Thermiculite Sheet Materials



This graph illustrates the minor weight loss of Thermiculite in comparison to the weight losses for the best and worst forms of graphite.

GRAPH 3

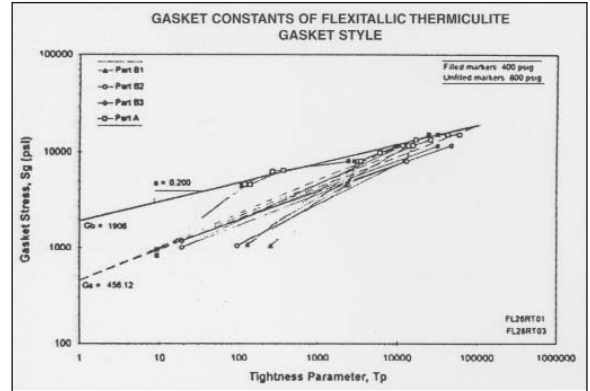
Flexible Graphite Relaxation vs. Temperature—TTRL Data



This graph illustrates the loss of load over time for graphite as a function of temperature.

GRAPH 4

Independent Testing at TTRL Concludes That Flexitallic's New Thermiculite Gasket Offers Superior Sealability



Room Temperature Tightness (ROTT) Behavior Characterization of the Flexitallic Thermiculite Gasket—Standard Test Method for Gasket Constants for Bolted Joint Design. Note the very high level of tightness achieved.

Gb	a	Gs	Ts	Ss
1906 psi	0.2	456.12 psi	N/A	N/A

S <sub>100</sub>	S <sub>1000</sub>	S <sub>10000</sub>	Tp <sub>min</sub>	Tp <sub>max</sub>
4788 psi	7588 psi	12026 psi	18	58645

Summary

- Total freedom from Oxidation
- Superb level of tightness even at 930°F
- Suitable for use up to 1600°F
- Maximum recommended pressure is 2900 psi
- Excellent chemical resistance
- Easily cut and installed in the field
- Sheet sizes of 40" x 40"
- Thickness range of 1/32" to 1/8"