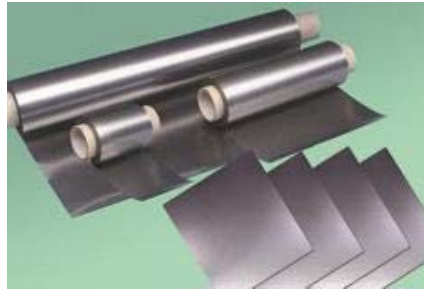




# 1100/1102

## Pure Expanded Flexible Graphite Foil



Nexus Flexible Graphite Foil is a homogeneous material that contains no adhesives or binders. Even after long service periods, Nexus Flexible Graphite Foil displays no notable changes in its properties compared with other sealing materials. Inhibitors can be added to enhance the oxidation and corrosion resistance properties of the flexible graphite.

Nexus Flexible Graphite Foil is also available with self-adhesive backing. For applications in stuffing box packings. Nexus Flexible Graphite Foil offers maximum protection against oxidation and thus ensures greater reliability and longer service life.

Nexus Flexible Graphite Foil is available in various dimensions and densities, and with a purity level of 99% up to 99.9%. Nexus Flexible Graphite Foil is supplied as standard in both roll and tape form.

### The different Nexus Flexible Graphite Foil grades are as follows:

Nexus 1100	Graphite Foil of industrial and automotive quality
Nexus 1100CI	Graphite Foil with conventional oxidation inhibitor
Nexus 1102	Graphite Foil of nuclear quality
Nexus 1102PAS	Graphite Foil of industrial / nuclear quality with self-adhesive backing
Nexus 1102CI	Graphite Foil of nuclear quality with oxidation inhibitor

### Properties

- Flexible, soft
- High temperature resistant
- Asbestos-free, presents no health hazard
- Long-term stability of compressibility and recovery over a wide temperature range
- Properties highly anisotropic, particularly in respect of electrical and thermal conductivity
- Resistant to radiation
- Excellent residual stress
- Can be bonded using commercial adhesives
- Impermeable to gases and liquids
- Resistant to most media
- No ageing or embrittlement because of absence of binders and fillers
- No measurable cold or warm flow up maximum permissible gasket stress
- Low coefficient of friction
- Very good resistance to thermal shock
- Easily machined by cutting or punching



# 1100/1102

## Pure Expanded Flexible Graphite Foil

### Material data

Foil grade		Nexus 1100	Nexus 1100CI	Nexus1102
Standard bulk density	g/cm <sup>3</sup>	0.7 - 1.2		
Ash content	%	≤1	≤1.0	≤0.5
Chloride content	ppm	≤50	≤20	≤20
Foil thickness	mm	0.15 – 1.0		
Roll width	mm	500/1000/1500/2000		
Tape width	mm	≥ 4mm		
Roll length	m	25/50/75/100/300/500		

### Technical data of Nexus 1100 Graphite Foil with bulk densities of 1.0 g/cc

Purity	99 %
Sulphur Content max. ASTM C-816	1000 ppm
Bulk Density	1.0 g/cc ASTM C-559
Ash Content ASTM C561	Less than 1% ASTM C561
Leachable Chloride	50 ppm max. ASTM D-512
Fluorides	50 ppm max. ASTM D-512
Temperature Range	-200°C to +3300°C Non-Oxid -200°C to + 500°C Oxidizing -200°C to + 650°C Steam
Tensile Strength	998 Psi
Stress Relaxation	DIN 52913-48 N/mm2
Shore Hardness (D)	30
Creep Relaxation	At 100°C ASTM F-38 <5%
Sealability ml/h fuel A	<0.2 to 0.5 ASTM F-37B
Electrical Resistance	900 x 10 <sup>-6</sup> ohm cm parallel to surface 250,000 x 10 <sup>-6</sup> ohm cm perpendicular to surface
Thermal Conductivity	120 Kcal/m Hr.°C parallel to surface 4 Kcal/m Hr.°C perpendicular to surface
Coefficient of Thermal Expansion	5 x 10 <sup>-6</sup> /°C parallel to surface 2 x 10 <sup>-6</sup> /°C perpendicular to surface
Ignition Loss	Less than 1% (450° /1Hr) Less then 20%(650° /1Hr)
Operating Pressure	140 bar (2058 p.s.i)
Resilient Rate	More than 30%
Compressibility	40 to 45 % ASTM F36A-66
Recovery	20 to 40 % ASTM F36A-66
ASTM "m" factor	2
ASTM "y" stress	1500 Psi
Sliding-Frictional Coefficient	0.149
Permeability Coefficient for air	Less than 10 <sup>-5</sup> cm <sup>2</sup> /sec perpendicular to surface
PH Range	0 to 14



# G1200/G3001/G3002

## Expanded Flexible Graphite Gasket Sheets

Nexus 1200 is made of expanded graphite foil without insertion. These compressed sheets are also used in manufacturing of exaded flexible graphite materials with stainless steel reinforcement.

Nexus 1200 is used as a gasket material for low pressures and high temperature; also as a layering material for cam profile gaskets and as an insert material for PTFE-envelope gaskets.

Nexus 3002A is an expanded graphite foil laminate with one or more thin, flat stainless steel 316 insertion. It is used for high pressure and high temperature conditions. This material is found in many applications, in both chemical and petrochemical industries.

Nexus 3001A is expanded graphite foil reinforced with a single or more insertions of tanged 0.10mm thick 316 stainless steel. No adhesive is used to bond the graphite layers. This sheet is used frequently in flange connections for piping and machinery. It is extremely suitable for steam systems, in chemical and petrochemical industries, processing industry, etc.

Standard Sheet Size . 1000\*1000mm, 1500\*1500mm, 2000\*2000mm. Other size upon request.

## Technical Properties

		G 1200	G 3002A	G 3001A
Thickness	mm	2.0	2.0	2.0
Max temperature	°C	-200°C to +500°C oxid -200°C to +650°C steam	-200°C to +500°C oxid -200°C to +650°C steam	-200°C to +500°C oxid -200°C to +650°C steam
Max pressure	bar	40	140	140
Density	g/cm <sup>3</sup>	1.1	1.1	1.1
Ash content	% DIN 51 903	≤1.0	≤1.0	≤1.0
Leachable chloride content	ppm	≤50	≤50	≤50
Material of insertion	DIN/ASTM	-	1.4401/SS316(flat)	1.4401/SS316(tanged)
Thickness of insertion	mm	-	0.05	0.1
No. of inserts		1	2	1
Gas permeability	cm <sup>2</sup> /min	<0.80	≤0.60	<0.80
Spec. leak pate	mg/s/m	<0.1		
Stress relaxation DIN 52 913,16h/300°C	N/mm <sup>2</sup>	>47	≥45	>48
Compressibility % ASTM F 36A-66		40-50	40-50	30-35 30-40
Recovery % ASTM F 36A-66		10-15	10-15	15-20
Min. gasket assembly stress	N/mm <sup>2</sup>	20	10	20
M	DIN factor	1.3	1.3	1.3
Max. permissible gasket stress	N/mm <sup>2</sup>	120	100	140
Max. permissible gasket stress under service conditions	N/mm <sup>2</sup>	100	60	120
M	ASTM factor	2	2	2.5
Y	psi ASTM factor	1500	900	4000

Nexus Style	PRODUCTS
1200/1200A	Pure flexible graphite sheet/gasket
3001A/3101A	Tanged SS316 reinforced flexible graphite composite sheet/gasket
3001B/3101B	Tanged SS304 reinforced flexible graphite composite sheet/gasket
3002A/3102A	Flat SS316 reinforced flexible graphite composite sheet/gasket
3002B/3102B	Flat SS304 reinforced flexible graphite composite sheet/gasket
3002C/3102C	Flat nickel foil reinforced flexible graphite composite sheet/gasket
3002D/3102D	Flat aluminum foil reinforced flexible graphite composite sheet/gasket
3003A/3103A	SS316 mesh-reinforced flexible graphite composite sheet/gasket
3003B/3103B	SS304 mesh-reinforced flexible graphite composite sheet/gasket
3003C/3103C	Aluminum mesh-reinforced flexible graphite composite sheet/gasket
3003D/3103D	Fiberglass mesh-reinforced flexible graphite composite sheet/gasket
3004/3104	Tanged tinplate-reinforced flexible graphite composite sheet/gasket
3005/3105	Polyester reinforced flexible graphite composite sheet/gasket
3006A/3106A	External-laminated SS316 reinforced flexible graphite composite sheet/gasket
3006B/3106B	External-laminated SS304 reinforced flexible graphite composite sheet/gasket
3006D/3106D	External-laminated aluminum foil reinforced flexible graphite composite sheet/gasket
3006F/3106F	External-laminated PTFE film reinforced flexible graphite composite sheet/gasket