

NE SEAL Industrial Products
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NE SEAL & PUMPS LLC
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www.neseal.com

Mechanical Seals • Custom Die Making • Gasket Materials • Pump and Valve Packing • Extrusions • Seal Repair

INTRODUCTION

NE SEAL is a Canadian Distributor of fluid sealing products and specializes in providing mechanical seals, gaskets, pump seals and packing of all types for stock or custom applications. We can provide the proper gasket material for valves, watertight hatches, engineering plant needs (head gaskets, pump seals etc.), piping systems, or any other situation which requires that liquid or gases be properly contained. We have established a regional office and warehousing facility in Dubai (Jebel Ali Industrial Area) to provide immediate service to regional clients.

Other services we provide include:

- Seal rebuilding (single spring, multiple spring, split seals or metal bellows assembly).
- Seal failure analysis by inspection or by duplicating the operating conditions on our test facility.
- Consultation to improve the life of seals, bearings and other components in pumps, mixers, boilers, valves, gearboxes, etc.
- Repairing of Pumps, Mechanical Seals and Chillers
- Rewinding of Electrical Motors, Power Generators and Compressors

One thing that sets us apart is our ability to accommodate special requests by manufacturing the item ourselves, using faxed drawings. Our seals and gaskets meet original specifications in every respect. This means that our customers can come to us for an unusual part that would otherwise not be available and get their machinery up and running again promptly at an average savings of 50%! This capability, although rare, is an integral part of our usefulness to the industry.

With a large stock of brand name gasket materials and quick availability of many other specialized products, we are anxious to become a resource and solution to many of your problems. Try us a few times; let us prove our abilities. We need and want your patronage and We are confident that NE Seal will quickly prove to be a very smart decision!

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Custom Gasket Dies

NE Seal's custom die and gasket making department has tackled everything from Dovetail-Joined Multi-Sectional Gaskets to Jet Fuelling Gaskets where Steel Mesh was Embedded in EXPANDED PTFE

Anything you need is within the abilities of our master DIE MAKER

Gasket Sheet Materials

Compressed Sheets
Non Asbestos / Kevlar
Cellulose Fiber / Beater Addition
Vegetable Fiber

Cork
Steel Inserted
Composition / Rubberized

Elastomers
Natural Rubber / Red Rubber / SBR
Cloth Inserted / Silicone / Buna-N
Butyl / Viton / EPDM / Neoprene

Felts
Polypropylene
Polyester Ceramic / Carbon Wool

Plastics
Teflon Virgin/Mech
Glass Filled Teflon
Expanded Teflon / Colour Coded
Polyethelene Gylon / Tygon

High Temperature
Reinforced Graphite
Ceramic Paper / Graphite Sheet
Carbon Tape

Flexible Graphite Gaskets Spiral Wound Gaskets



Graphoil Products



Ring Joint Gaskets



Flange Gaskets Flange Protectors



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Elastomer Bellows Pusher Type Single and Double Cartridge



NES 1

Self-aligning, Non-clogging, Single-coil spring
 Special balancing
 Low drive torque
 Designed with a drive band and drive notches that eliminate overstressing of bellows
 Slippage is eliminated, protecting the shaft and sleeve from wear and scoring
 Service conditions: Water and steam to chemical and corrosive materials
 For use: Pumps, mixers, blenders, agitators, air compressors, blowers, fans and rotary shaft equipment
 Equivalent to John Crane 1



NES 2

Utilized full convolution industrial duty
 Self-aligning, Non-clogging, Single-coil spring
 Special balancing
 Primary Ring designed to provide positive drive and eliminates slippage
 Designed with a drive band and drive notches that eliminate overstressing of bellows
 Service conditions: Water and steam to chemical and corrosive materials
 For use: Pumps, mixers, blenders, agitators, air compressors, blowers, fans and rotary shaft equipment
 Equivalent to John Crane 2



NES 3u

Extremely rugged and reliable
 Single seal
 Unbalanced
 Conical spring
 Dependent on direction of rotation
 For use: Water pumps, sewage pumps, submerged pumps, chemical pumps
 Equivalent to Burgmann M3, M32, M37



NES 4

Single coil spring
 Unbalanced
 Dependent on direction of rotation
 Secondary O-ring as secondary seal
 For use: Pulp and paper, slurry, viscous fluid
 Equivalent to Pillar US-1
 Equivalent to Flexibox R00



NES 31S

Cartridge seal design
 Easy reliable installation
 Requires no pump modification
 Self-aligning and balanced faces
 Non-clogging internal rotary
 Reduces power consumption
 Eliminates leakage
 Used in waste water, including oils, solvents, water and refrigerants in addition to a multitude of chemical solutions
 Equivalent to AES CURC



NES 41

Reduce high maintenance costs
 Pre-assembled
 Easy to install
 Balanced design
 No clogging
 Prevents wasteful leakage
 Reduced downtime during maintenance
 Reduced power consumption of buffer fluid
 Optional quench and drain capabilities
 Fits nearly every centrifugal pump that has a conventional stuffing box
 Equivalent to Burgmann Cartex

Packed Pump - Before



Packing Replaced with Mechanical Seal - After



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Pump Packing

Carbon Fiber / Flexible Graphite
 Pure PTFE / Aramid Fiber / Synthetic Fiber
 Fiberglass / Ramie Fiber



Rubber Extrusions

D Sections / P Sections / L Sections
 Cord / Bar / Ribbed Stock
 Squares / Rectangles / Triangles
 Silicone / U Channels / Pedestals...more!



Flat Gasket Materials



Gasketing Tools

Gasket Punch Kit / Gasket Cutting Kit

Fiberglass

Knit Tape / Knit Rope
 Tadpole Tape / Rope / Sleeves



Pipe Wrap



3156C Norland Ave. Burnaby, BC Canada V5B 3A5
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You're First Choice for High Quality Gasket Materials!

Everything from pumps, plumbing and processing to computers, cameras and cars use gaskets in some form to insulate, isolate or seal. The effectiveness of those gaskets depends on two things... quality workmanship and quality materials.

Neoprene® - Chloroprene (CR)

Durometer Range (Shore A)	20 to 95
Tensile Range (psi)	500 to 3000
P x T max	15000
Resilience Rebound	Excellent
Abrasion Resistance	Excellent
Oil Resistance	Fair
Temperature Tolerances (°F)	-30° to +250°

Recommended for gasoline and non-aromatic solvents. Attacked by strong oxidizing acids, esters, ketones, chlorinated aromatic and nitro hydrocarbons. Excellent resistance to oils, ozone, sunlight and aging.

NE 501 Neoprene®



Natural Gum Rubber (NR)

Durometer Range (Shore A)	20 to 100
Tensile Range (psi)	500 to 3500
P x T max	-----
Resilience Rebound	Excellent
Abrasion Resistance	Excellent
Oil Resistance	Poor
Temperature Tolerances (°F)	-60° to +175°

Good resilience, low compression set, good roll building behavior and moulding properties. Usable for ketones and alcohol. Good low temperature properties. Not recommended for oil / solvent resistance or ozone attacks. Poor aging resistance.

NE 506 NR



Neoprene® Sponge - Chloroprene (CR) Closed Cell

Water Absorption (lbs/ft ²)	0.1 max
Tensile Range (psi)	25 min
Compression Deflection at 25% (psi)	2 to 5
50% Compression Set (%)	50
Elongation (%)	125 min
Temperature Range (°F)	-30° to +200°

Distinct advantages are low water absorption, providing a tight seal and the ability to conform to curves and corners without bridging or creasing. Generally attacked by strong oxidizing acids, esters, ketones, chlorinated aromatic and nitro hydrocarbons.

NE 502 Neoprene® Sponge



Urethane

Durometer Range (Shore A)	30 to 100
Tensile Range (psi)	500 to 8000
P x T max	-----
Resilience Rebound	Good
Abrasion Resistance	Excellent
Oil Resistance	Good
Temperature Tolerances (°F)	30° to +175°

Not normally attacked by moderate chemicals and hydrocarbons. It is generally attacked by concentrated acids, ketones, esters, chlorinated and nitro hydrocarbons.

NE 507 Urethane



Ethylene Propylene Rubber (EPDM)

Durometer Range (Shore A)	30 to 90
Tensile Range (psi)	500 to 2500
Resilience Rebound	Good
Abrasion Resistance	Good
Oil Resistance	Poor
Temperature Tolerances (°F)	-30° to +350°

Excellent aging and ozone resistance. EPDM is the preferred rubber material for steam. Oil and solvent resistance is poor but is fairly good in ketones and alcohols. Not recommended for food applications or exposure to aromatic hydrocarbons.

NE 503 EPDM



Silicone Sponge - Closed Cell

Compression Set	Good
Elongation (MAX%)	700
Tensile Range (psi)	200 - 1500
Resilience Rebound	Good
Abrasion Resistance	Fair to Poor
Oil Resistance	Fair to Poor
Temperature Tolerances (°F)	-60° to +450°

Extreme low temperature properties. Can be highly resistant to oxidation and ozone attack. Generally attacked by most concentrated solvents, oils, concentrated acids, and dilute sodium hydroxide.

NE 508 Silicone Sponge



Synthetic Rubber (SBR)

Durometer Range (Shore A)	30 to 100
Tensile Range (psi)	500 to 3000
Resilience Rebound	Good
Abrasion Resistance	Excellent
Oil Resistance	Poor
Temperature Tolerances (°F)	-30° to +225°

Satisfactory for most moderate chemicals and wet or dry organic acids. SBR is not recommended for ozone, strong acids, oils, grease, fats and most hydrocarbons.

NE 504 SBR



Silicone Rubber

Durometer Range (Shore A)	30 to 90
Tensile Range (psi)	200 to 1500
Resilience Rebound	Good
Abrasion Resistance	Fair to Poor
Oil Resistance	Fair to Poor
Temperature Tolerances (°F)	-60° to +450°

Extreme low temperature properties. Highly resistant to oxidation and ozone. High resilience and low compression set. Generally attacked by most concentrated solvents, oils, and concentrated acids, however fluorination increases chemical resistance.

NE 509 Silicone Rubber



Nitrile / Buna N Rubber

Durometer Range (Shore A)	20 to 95
Tensile Range (psi)	200 to 3000
Resilience Rebound	Good
Abrasion Resistance	Excellent
Oil Resistance	Good to Excellent
Temperature Tolerances (°F)	-30° to +250°

Number 1 inexpensive choice for sealing petroleum, oils and solvents. Nitrile should not be used in highly polar solvents such as acetone, and MEK, ozone, chlorinated hydrocarbons and nitro hydrocarbons.

NE 505 Nitrile



Viton® Rubber

Durometer Range (Shore A)	60 to 90
Tensile Range (psi)	500 to 2000
Resilience Rebound	Fair
Abrasion Resistance	Good
Oil Resistance	Excellent
Temperature Tolerances (°F)	-10° to +600°

One of the most expensive rubber materials due to its high temperature properties. Resistance to wide range of oils. Not recommended for ketones, low molecular weight esters and nitro containing compounds.

NE 510 Viton®





NES 2300 - For Corrosive Mediums

Pure PTFE - Dry

Applicable for packing pumps, valves and vessels in corrosive mediums, chemical, medical, food, petrochemicals and power environments. Braided with PTFE yarn.

		⊙	⊞	⊚
Pressure	MPa	2	15	15
Temperature	°C	-200 ~ 280		
Linear Speed	m/s	0 ~ 8		
ph Range	ph	0 ~ 14		



NES 2301 - Minimizes Shaft Wear

PTFE - Lubricant Dipped

Applicable for dynamic seals at high linear speeds. Braided with PTFE yarn and treat with high temperature resistant lubricants. Handles all acids, alkalis and most chemicals except molten alkali metals.

		⊙	⊞	⊚
Pressure	MPa	2	15	15
Temperature	°C	-200 ~ 280		
Linear Speed	m/s	0 ~ 10		
ph Range	ph	0 ~ 14		



NES 2302 - Highly Wear Resistant

PTFE - Aramid Fiber

Applicable dynamic seals under high linear speed and medium high pressure. Blended and braided with PTFE yarn and aramid fiber in a special process, wrapped with aramid fiber at the corners.

		⊙	⊞	⊚
Pressure	MPa	3	10	20
Temperature	°C	-100 ~ 280		
Linear Speed	m/s	0 ~ 12		
ph Range	ph	2 ~ 14		



NES 2400 - Safe in Most Chemical Pumps

Expanded PTFE - Graphite Infused

Applicable for packing valves and pumps in petro-chemical, chemical, medical and power environment. Braided with 2400Y yarn, provides high strength, creep resistance, good self-lubrication and thermal conductivity.

		⊙	⊞	⊚
Pressure	MPa	3	10	20
Temperature	°C	-200 ~ 280		
Linear Speed	m/s	0 ~ 20		
ph Range	ph	0 ~ 14		



NES 2402 - Highly Wear Resistant

Expanded PTFE - Aramid Reinforced Corners

Applicable for dynamic seals under high linear speed and medium high pressure. Blended and braided with PTFE graphite yarn and aramid fiber in a process and wrapped on corner with high strength aramid.

		⊙	⊞	⊚
Pressure	MPa	4	20	25
Temperature	°C	-100 ~ 280		
Linear Speed	m/s	0 ~ 20		
ph Range	ph	2 ~ 14		



NES 2600 - Handles High Linear Speeds

Carbonized Fiber - PTFE Impregnated

Applicable for packings in rotary and reciprocating pumps operating at high linear speeds, valves, and vessels. Made of high strength and modulus carbonized fiber through braiding. Made of aramid fiber and impregnated with PTFE shaped.

		⊙	⊞	⊚
Pressure	MPa	2.5	15	25
Temperature	°C	-50 ~ 260		
Linear Speed	m/s	0 ~ 15		
ph Range	ph	1 ~ 13		



NES 2700 - Extreme High Strength

Aramid Fiber - PTFE Impregnated

Especially applicable as packing in rotary or reciprocating mechanisms in particle-bearing mediums at high linear speeds. Made of aramid fiber and impregnated with PTFE.

		⊙	⊞	⊚
Pressure	MPa	8	20	25
Temperature	°C	-100 ~ 280		
Linear Speed	m/s	0 ~ 15		
ph Range	ph	2 ~ 12		



NES 2900 - High Strength & Modulus

Carbon Fiber - Graphite Dipped

Applicable for packing in rotary or reciprocating mechanisms in corrosive, high (low) temperature, high pressure fluid mediums and at high linear speed. Made of carbon fiber and dispersion of quasi-nm-level graphite powder, then lubricated.

		⊙	⊞	⊚
Pressure	MPa	5	10	25
Temperature	°C	-200 ~ 600		
Linear Speed	m/s	0 ~ 25		
ph Range	ph	0 ~ 14		



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Repair/ Installation of mechanical seal & shaft rectification



Motor Rewinding





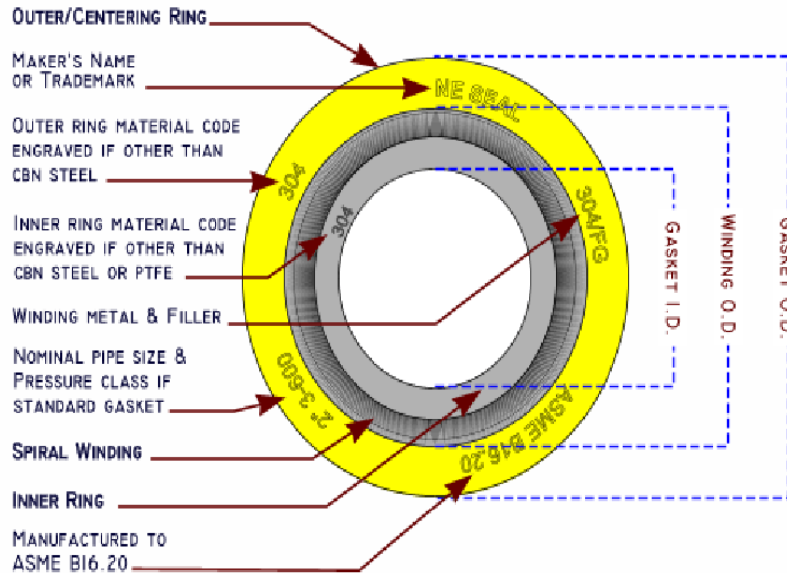
Spiralwound Gaskets
 NE SEAL Industrial Products

Gasket Color Codes / Filler Material
 Specification Chart

Identifying Spiralwound Gaskets

The following diagrams will assist you to identify gasket composition in accordance with ASME B16.20

Gasket Markings and Component Parts





Available Sizes / Tolerances

Thicknesses Available	
Winding	Ring(s) Inner & Outer
0.125"	3/32"
0.175"	1/8"
0.250"	3/16"
0.285"	3/16"

** Measured across the metallic portion of the gasket not including the filler, which may protrude slightly.

Tolerances				
Gasket		Width Limits		Compressed Thickness
Thickness	Tolerance	Minimum	Maximum	
0.125"	± 0.005	3/16"	1"†	0.090 - 0.100"
0.175"	± 0.005	1/4"	1-1/2"†	0.125 - 0.135"
0.250"	± 0.005	5/16"	1-1/2"†	0.180 - 0.200"
0.285"	± 0.005	5/16"	1-1/2"†	0.200 - 0.220"

** Measured across the metallic portion of the gasket not including the filler, which may protrude slightly.

† Spiral wound gaskets can be made to large widths if required. Call for details



Spiralwound Gaskets
NE SEAL Industrial Products

Gasket Color Codes / Filler Material
Specification Chart

Gasket Color Codes and Temperature Limits
(ASME B 16.20 Standard)

Ring Color	Type of Metal	Minimum		Maximum		Abbrev.	
		°F	°C	°F	°C		
	Yellow	304 Stainless Steel	-320	-195	1400	760	304
	Green	316L Stainless Steel	-150	-100	1400	760	316L
	Maroon	317L Stainless Steel	---	---	---	---	317L
	Turquoise	321 Stainless Steel	-320	-195	1400	760	321
	Blue	347 Stainless Steel	-320	-195	1700	925	347
	Orange	MONEL® 400	-200	-130	1500	820	MON
	Red	Nickel 200	-320	-195	1400	760	NI
	Purple	Titanium	-320	-195	2000	1090	TI
	Black	20Cb-3 (Alloy 20)	-300	-185	1400	760	A-20
	Gold	INCONEL® 600	-150	-100	2000	1090	INC 200
	No Color	INCONEL® X750	-150	-100	2000	1090	INX
	Brown	HASTELLOY® B2	-300	-185	2000	1090	HAST B
	Beige	HASTELLOY® C 276	-300	-185	2000	1090	HAST C
	White	INCOLOY® 800	-150	-100	1600	870	IN 800
	Silver	Carbon Steel	-40	-40	1000	540	CRS

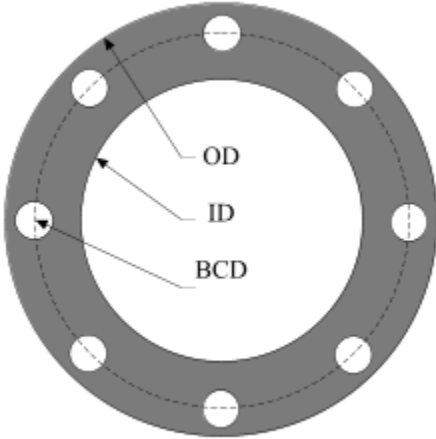
Fillers

Stripe Color	Type of Material	Minimum		Maximum		Abbrev.	
		°F	°C	°F	°C		
	Gray	Flexible Graphite	-350	-212	950	510	F.G.
	White	PTFE	-400	-240	500	260	PTFE
	Light Green	Ceramic	-350	-212	2000	1090	CER
	Turquoise	Mica Graphite (Verdicarb)	-350	-212	550	288	VC



Cut Gaskets

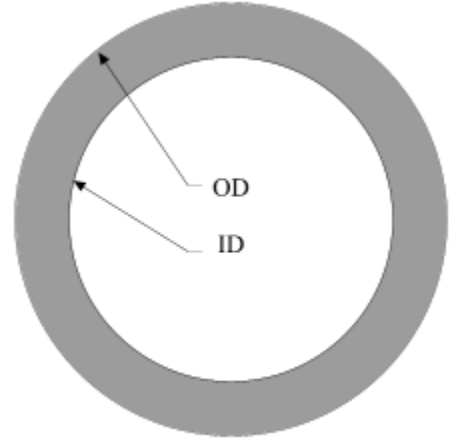
FLANGE SIZES For Standard Flange Gaskets (API-601)



Full Face Flange Gasket

LEGEND

ID Inside Diameter
OD..... Outside Diameter
RF Raised Face (Ring)
FF..... Full Face (with bolt holes)
BCD ... Bolt Circle Diameter
NOB ... Number of Bolts



Raised Face Flange Gasket

Size	I.D. for all	150# RF OD	150# FF OD	150# BCD	150# NOB	300# RF OD	300# FF OD	300# BCD	300# NOB
1/2"	0.84	1.875	3.5	2.38	4	2.125	3.75	2.875	4
3/4"	1.06	2.25	3.875	2.75	4	2.625	4.625	3.25	4
1"	1.31	2.625	4.25	3.13	4	2.875	4.875	3.5	4
1 1/4"	1.66	3	4.625	3.50	4	3.25	5.25	3.875	4
1 1/2"	1.91	3.375	5	3.75	4	3.75	6.125	4.5	4
2"	2.38	4.125	6	4.75	4	4.375	6.5	5	8
2 1/2"	2.88	4.875	7	5.50	4	5.125	7.5	5.875	8
3"	3.50	5.375	7.5	6.00	4	5.875	8.25	6.375	8
3 1/2"	4.00	6.375	8.5	7.00	8	6.5	9	7.25	8
4"	4.50	6.875	9	7.50	8	7.125	10	7.875	8
5"	5.56	7.75	10	8.50	8	8.5	11	9.25	8
6"	6.63	8.75	11	9.50	8	9.875	12.5	10.75	12
8"	8.63	11	13.5	11.75	8	12.125	15	13	12
10"	10.75	13.375	16	14.25	12	14.25	17.5	15.25	16
12"	12.75	16.125	19	17	12	16.625	20.5	17.75	16
14"	14.00	17.75	21	18.75	12	19.125	23	20.5	20
16"	16.00	20.25	23.5	21.75	16	21.25	25.5	22.5	20
18"	18.00	21.625	25	22.75	16	23.5	28	24.75	24
20"	20.00	23.875	27.5	25.00	20	25.75	30.5	27	24
24"	24.00	28.25	32	29.50	20	30.5	36	32	24

