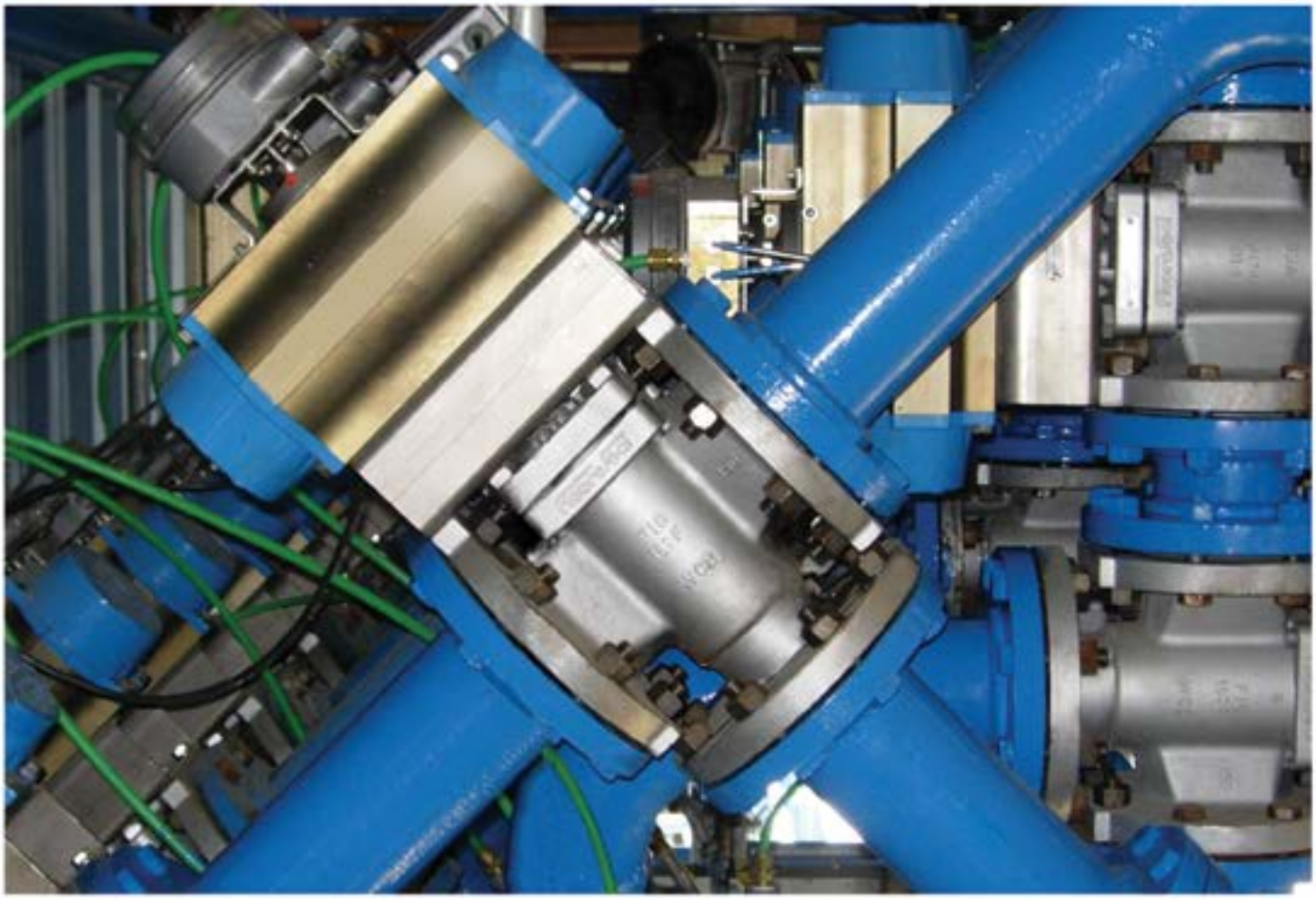
FluoroSeal



COMPANY OVERVIEW

VALVES FOR INDUSTRIAL APPLICATIONS

ASME/ANSI/API/DIN/ISO



FluoroSeal Canada / Company Headquarters – Lachine, QC, Canada


FluoroSeal U.S.A. - Missouri City, TX, USA



FluoroSeal China - Suzhou, China


FluoroSeal China (Foundry) - Shuyang, China

WORLDWIDE PRESENCE

FluoroSeal operations span across the world - from headquarters in Canada, to an international sales force and manufacturing. Comprised of over 500 employees worldwide, FluoroSeal is a leading provider of innovative solutions to the flow control industry.

For over 40 years FluoroSeal has been manufacturing and customizing a wide range of valves, parts, and accessories for various industries such as Oil & Gas, Chemical, Petrochemical, Power, Pharmaceutical, and Mining. Our client-oriented culture allows us to understand complex industry needs and meet the highest quality standards - that is why our manufacturing processes are ISO 9001:2015 and PED 2014/68/EU certified with TUV Rheinland of North America.

Our wholly owned foundries and manufacturing plants enhance our capability to offer an extensive range of high quality valves at competitive prices in a wide range of exotic alloys on demand. With our large global network of warehouses, stocking distributors, and factory authorized service centers FluoroSeal is capable of delivering valves, repair service, and technical support where and when the end user needs it.

Our product offering is continuously evolving and expanding due to the efforts of our Designers, Engineers, and Metallurgists who apply the latest technologies, production methods, and testing protocols.





At FluoroSeal, we are inspired and committed to developing innovative flow control solutions for every industry we serve





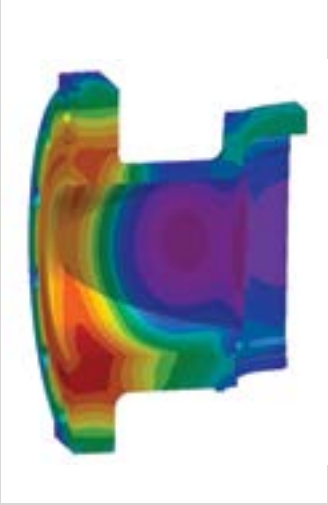


SPECIALTY ALLOY VALVES ARE OUR SPECIALTY

FluoroSeal offers a wide variety of specialty alloys, ranging from standard carbon and stainless steels, including duplex and super-duplex, nickel and nickel alloys such as Hastelloys, Inconels, Incoloys and Monel up to titanium and zirconium alloys, amongst others. With its in-house metallurgical expertise and foundry (located in Montreal, Canada), FluoroSeal ensures the quality of its alloy castings. Maintaining a direct control of its foundry cycle-time allows FluoroSeal the flexibility to produce small run quantities with a very short lead time.

QUALITY ENGINEERED INTO EVERY CASTING

Through the use of solidification modeling, the Niyama criterion, and other proprietary engineering techniques, a unique system of gating and risering is developed to provide for even casting cooling which greatly reduces or eliminates internal casting defects such as shrinkage and micro-porosity.



Solidification Model

All newly designed FluoroSeal casting designs are subjected to a rigorous first article sampling procedure which includes radiography, liquid penetrant examination, and other non-destructive as well as destructive testing to verify the production techniques.

QUALITY ASSURANCE

FluoroSeal valves bring all of the best design features to the market and they are also inspected throughout the full manufacturing process from foundry to packaging to ensure high quality and consistency in every unit.

ISO 9001 : 2015


CERTIFICATE

FluoroSeal

FluoroSeal Inc.

Design and Manufacture of Industrial Valves

Design and Manufacture of Industrial Valves

PED 2014/68/EU


Certificate

Design and Manufacture of Industrial Valves

AD 2000 -Merkblatt W0


Certificate

Production of Investment Castings

FUGITIVE EMISSIONS AND FIRE TESTING

FluoroSeal regularly conducts independent third party testing to ensure compliance with industry standards including ISO 15848, API 641, TA Luft, and API 607.

TA-Luft : 2002


CERTIFICATE





Certificate No. 01 202 USA/TA 10 5303-2
FE Severe Service Seal Configuration

INDUSTRIES SERVED





- Chemical
- Fertilizer
- Food Processing
- Mining
- Petrochemical
- Pharmaceutical
- Power Generation
- Pulp & Paper
- Refining
- Steel Manufacturing

STANDARD DESIGN SLEEVED PLUG VALVES



Wrench Operated Sleeved Plug Valve

DESIGN FEATURES

- Robust, bi-directional, fully adjustable in-line & external sealing
- Low emission stem seal
- Cavity free
- Maintenance free
- Non-lubricated
- Firesafe per API 607 - Optional
- Quarter turn operation

DESIGN AND TESTING STANDARDS

API 598
API 599
API 607
ASME B16.10
ASME B16.5
ASME B16.34
ASME B16.42
ASME B16.25
DIN EN 558-1
DIN EN 1092-1
DIN EN 12266
EPA Method 21
ISO 15848-1 CO3
MSS SP-55
MSS SP-25
MSS SP-61
PED
TA-LUFT

STANDARD CONFIGURATIONS

Available Sizes

- ½" – 24" / DN 15 – DN 600 Flanged & Butt Weld
- ½" – 2-1/2" / DN 15 – DN 65 Threaded & Socket Weld

Pressure Classes

- ASME Class 150/300/600 – Fully Rated
- DIN PN 16 – PN40 – Fully Rated

End Connections

- Standard: Flanged End Raised Face, Threaded, Socket Weld, Butt Weld
- Optional: RTJ, Tongue/Groove, Male/Female

Materials

- Body & Plug: Carbon Steel, Stainless Steels, Duplex Stainless Steels, Monel, Inconel, Hastelloys, Titanium, Zirconium, etc.
- Sleeve: PTFE, RPTFE, PFA, GF2P, UHMWPE, HiTemp

COMPLEMENTARY OPTIONS

- Optional EZ Seal single point seal adjustment (See additional information on page 10).

SEVERE SERVICE (FE) SLEEVED PLUG VALVES



Automated Severe Service Sleeved Plug Valve

DESIGN FEATURES

- Robust, bi-directional, fully adjustable in-line & external sealing
- Internally live loaded stem seal with redundant mechanically adjustable gasket
- Cavity free
- Maintenance free
- Non-lubricated
- Firesafe per API 607 - Optional
- Quarter turn operation



Live Loaded Redundant Stem

STANDARD CONFIGURATIONS

Available Sizes

- ½" – 24" / DN 15 – DN 600 Flanged & Butt Weld
- ½" – 2-1/2" / DN 15 – DN 65 Threaded & Socket Weld

Pressure Classes

- ASME Class 150/300/600 – Fully Rated
- DIN PN 16 – PN40 – Fully Rated

End Connections

- Standard: Flanged End Raised Face, Threaded, Socket Weld, Butt Weld
- Optional: RTJ, Tongue/Groove, Male/Female

Materials

- Body & Plug: Carbon Steel, Stainless Steels, Duplex Stainless Steels, Monel, Inconel, Hastelloys, Titanium, Zirconium, etc.
- Sleeve: PTFE, RPTFE, PFA, GF2P, UHMWPE, HiTemp

DESIGN AND TESTING STANDARDS

API 598
API 599
API 607
ASME B16.10
ASME B16.5
ASME B16.34
ASME B16.42
ASME B16.25
DIN EN 558-1
DIN EN 1092-1
DIN EN 12266
EPA Method 21
ISO 15848-1 CO3
MSS SP-55
MSS SP-25
MSS SP-61
PED
TA-LUFT

PRODUCT OFFERING

HF ALKYLATION PLUG VALVES - UOP LISTED



FluoroSeal® Class 300, HF Alkylation Plug Valve

DESIGN FEATURES

- Robust, bi-directional, fully adjustable in-line & external sealing
- Low emission stem seal
- Cavity free
- Maintenance free
- Non-lubricated
- Quarter turn operation
- Firesafe per API 607

DESIGN AND TESTING STANDARDS

API 598
API 599
API 607
ASME B16.5
ASME B16.11
ASME B16.10
DIN EN 558-1
DIN EN 1092-1
DIN EN 12266
ISO 15848-1
MSS SP-55
MSS SP-61
MSS SP-25
PED
TA-LUFT

STANDARD CONFIGURATIONS

Reduced Port Flanged End

- ASME Class 300 UOP approved 2-way flanged end reduced port sleeved plug valve with A494 M35-1 body and plug, PTFE sleeve, monel FS stem seals, A216 WCB cover, A193 B7M cover bolts/studs with A194 2HM nuts, lever or enclosed gear operator.

Reduced Port Threaded End

- ASME Class 300 UOP approved 2-way threaded end reduced port sleeved plug valve with A494 M35-1 body and plug, PTFE sleeve, monel FS stem seals, A216 WCB cover, A193 B7M cover bolts/studs with A194 2HM nuts, lever or enclosed gear operator.

EZ Seal Reduced Port Flanged End

- ASME Class 300 UOP approved 2-way flanged end reduced port sleeved plug valve EZ Seal single point adjustment. Valve to incorporate A494 M35-1 body and plug, PTFE sleeve, monel FS stem seals, A216 WCB cover, A193 B7M cover bolts/studs with A194 2HM nuts, lever or enclosed gear operator.

Reduced Port Socket Weld End

- ASME Class 300 UOP approved 2-way socket weld end reduced port sleeved plug valve with A494 M35-1 body and plug, PTFE sleeve, monel FS stem seals, A216 WCB cover, A193 B7M cover bolts/studs with A194 2HM nuts, lever or enclosed gear operator.

Full Round Port Flanged End

- ASME Class 300 UOP approved 2-way flanged end full port sleeved plug valve with A494 M35-1 body and plug, PTFE sleeve, monel FS stem seals, A216 WCB cover, A193 B7M cover bolts/studs with A194 2HM nuts, lever or enclosed gear operator.

CLASS AND SIZE RANGES

HF Alkylation Plug Valves — Standard Port

- ANSI/ASME Class 300 Screwed Ends (1/2" to 2")
- ANSI/ASME Class 300 Flanged Ends (1/2" to 24")

HF Alkylation Plug Valves — Full Round Port

- ANSI/ASME Class 300 Flanged Ends (3/4" to 10")

EZ Seal HF Alkylation Plug Valves

- ANSI/ASME Class 300 Flanged Ends (1/2" to 6")

OPTIONAL SLEEVED PLUG VALVE CONSTRUCTION



Full Port Sleeved Plug Valves

- Full round bore
- ASME Class 150/300/600
- Sizes ½" – 12"



Double Block & Bleed Valves

- Bleed function confirms primary in-line sealing
- ASME Class 150/300
- Sizes ½" – 24"



Multiport Sleeved Plug Valves

- Bottom entry with a variety of flow patterns
- ASME Class 150/300/600
- Sizes ½" – 24"



Steam Jacketed Sleeved Plug Valves

- Allow for heating of valve to ensure media remains in molten state
- Full or partial integrally welded jacket available
- ASME Class 150/300/600
- Sizes ½" – 24"



Cage Control Design

- Offers sleeve protection in throttling applications
- ASME Class 150/300/600
- Sizes ½" – 12"



Special Service Preparations

- Oxygen
- Chlorine
- Phosgene

EZ-SEAL® SINGLE POINT ADJUSTMENT SYSTEM



EZ-Seal Sleeved Plug Valve with ISO Bracket

THE EZ-SEAL® DESIGN CONCEPT

- FluoroSeal's patented EZ-Seal single point adjustment system allows for easy adjustment screw access even if the valve is automated. Should an in-line or external leak develop simply tighten the side entry adjustment screw. This action rotates an internal cam that applies even and consistent compression to the stem seals and increases the compression on the sleeve or body liner to re-establish an in-line seal. The EZ-Seal adjustment system is available for both FluoroSeal sleeved and lined plug valves.

EZ-SEAL® ADVANTAGES

- Easy adjustment screw access even when valve is automated.
- Even compression of the stem seals is ensured.
- Patented cam design eliminates side loading of plug and stem seals during adjustment.
- Local visual indication of remaining valve adjustment and life. No other sleeved or lined plug valve on the market can show an operator this!

EZ-SEAL® DESIGN FEATURES

- Easily accessible single point in-line & stem seal adjustment.
- Visual Min-Max gauge indicates remaining valve life.
- Stainless steel ISO mounting bracket with locking provision standard.
- All components are investment cast for precision and dimensional accuracy

STANDARD CONFIGURATIONS

Available Sizes

- ½" – 6" / DN 15 – DN 150 Flanged & Butt Weld
- ½" – 2-1/2" / DN 15 – DN 65 Threaded & Socket Weld

Pressure Classes

- ASME Class 150/300/600 – Fully Rated
- DIN PN 16 – PN40 – Fully Rated

End Connections

- Standard: Flanged End Raised Face, Threaded, Socket Weld, Butt Weld
- Optional: RTJ, Tongue/Groove, Male/Female

Sleeved Plug Valve Available Materials

- Body & Plug: Carbon Steel, Stainless Steels, Duplex Stainless Steels, Monel, Inconel, Hastelloys, Titanium, Zirconium, etc.
- Sleeve: PTFE, RPTFE, PFA, GF2P, UHMWPE, HiTemp



FluoroSeal® single point adjustable valve

LINED PLUG VALVES



FluoroSeal® Class 150, Lined Plug Valve with Gear Operator

DESIGN FEATURES

- Robust, bi-directional, fully adjustable in-line & external sealing
- Body & plug liners securely locked through a series of dovetail grooves and anchoring holes
- External epoxy coating resists atmospheric corrosion
- Virgin, unpigmented PFA liners
- Cavity free
- Non-lubricated, maintenance free
- Quarter turn operation
- Low emissions design stem seal



Lined Plug Valve with EZ-Seal® Single Point Adjustment System

STANDARD CONFIGURATIONS

Available Sizes

- ½" – 10" / DN 15 – DN 250

Pressure Classes

- ASME Class 150/300 – Fully Rated
- DIN PN 16

Materials of Construction

- ASTM A216 WCB body housing and plug core, virgin un-pigmented PFA lined

End Connections

- Raised Face Flanged End

Optional Configurations

- EZ-Seal single point adjustment system
- Stainless steel body & plug, PFA lined
- Other alloy body & plug materials upon request

DESIGN AND TESTING STANDARDS

API 598
API 599
ASME B16.10
ASME B16.5
ASME B16.34
ASME B16.42
ASTM F1545
DIN EN 558-1
DIN EN 12266
EPA Method 21
ISO 15848-1 CO3
MSS SP-55
MSS SP-25
MSS SP-61
PED
TA-LUFT

FULL PORT LINED BALL VALVE



FluoroSeal® Class 150, Lined Ball Valve

DESIGN FEATURES

- Live loaded, low emission stem seal standard
- Full port design
- Virgin un-pigmented PFA lined body, ball, and stem
- Stainless steel ball & stem core
- Robust, bubble tight seats
- Metal-metal body joint seal
- Blow-out proof stem
- ISO 5211 mounting standard

DESIGN AND TESTING STANDARDS

API 598
ASME B16.42
ASME B16.5
ASME B16.10
ASME B16.34
DIN EN 558-1
DIN EN 1092-1
DIN EN 12266
ISO 5211
ISO 15848-1 CO3
MSS SP-55
PED

STANDARD CONFIGURATIONS

Available Sizes

- ½" – 6" / DN 15 – DN 150

Pressure Classes

- ASME Class 150 / PN10-16

Materials of Construction

- ASTM A395 Ductile Iron body housing, ASTM A351 CF8 ball & stem core, virgin un-pigmented PFA lined
- GF2P seats

End Connections

- Raised Face Flanged End

Optional Configurations

- V-shaped opening for control applications



V-shaped opening (Optional)
for control applications

LINED BUTTERFLY VALVES



FluoroSeal® Class 150, Wafer Lined Butterfly Valve

DESIGN FEATURES

- Live loaded, low emission stem seal standard
- Energized seat for bubble tight shut-off
- Two piece lug or wafer style body
- One piece integrally cast duplex stainless steel disc-shaft core
- Virgin un-pigmented PFA lined disc-shaft, GF2P lined body
- PFA liner securely fixed to disc with a series of locking holes
- Precision shaft bearings ensure tight sealing
- Blow-out proof stem
- Atmospheric seal to prevent ingress of foreign material
- ISO 5211 mounting standard

STANDARD CONFIGURATIONS

Available Sizes

- 2" – 24" / DN 50 – DN 600

Pressure Classes

- ASME Class 150 / PN10-16

Materials of Construction

- ASTM A216 WCB body housing GF2P lined, ASTM A351 CD4MCuN disc-shaft core PFA lined, silicon back-up liner

End Connections

- Raised Face Flanged End

Optional Configurations

- Viton back-up liner
- Alloy, un-lined disc-shaft

DESIGN AND TESTING STANDARDS

API 598
API 609
ASME B16.10
ASME B16.5
ASME B16.34
ASTM F1545-97
DIN EN 558-1
DIN EN 12266
DIN EN 1092-1
ISO 15848
ISO 15848-1 CO3
ISO 5211
MSS SP-55
MSS SP-25
MSS SP-61
PED

RACK & PINION ACTUATOR & AUTOMATION



Automated Full Port Lined Ball Valve

DESIGN FEATURES

- Dual piston Rack & Pinion design allows for high cycle life, quick operating speeds, and symmetrical mounting
- Available in Double Acting or Spring Return designs
- Modular spring packs allow for easy spring rate changes
- Two external travel stops provide for accurate valve open/closed alignment; stops have +/- 4° adjustment
- Local, visual position indicator
- One piece universal blow-out proof pinion shaft
- Multiple bearings and precision guides ensure long life in high cycle applications
- ISO 5211 mounting
- Maximum input air supply = 115 psig
- Maximum output torque = 110,650 in-lbs / 12,502 N-m

DESIGN AND TESTING STANDARDS

ISO 5211
DIN 3337
VDI/VDE 3845
PED

OPTIONS

- Filter-Regulators
- Pneumatic and Electro-Pneumatic positioners
- Solenoid valves
- Limit switch modules
- Declutchable manual override gear operators



Rack & Pinion Pneumatic Actuator



Automated Sleeved Plug Valve

CONTROLLING PROVISIONS

These terms and conditions shall control with respect to any purchase order or sale of FluoroSeal Inc.'s products. No waiver, alteration or modification of these terms and conditions whether on Buyer's purchase order or otherwise, shall be valid unless the waiver, alteration or modification is specifically accepted in writing and signed by an authorized representative of FluoroSeal Inc.

DELIVERY

FluoroSeal Inc. will make every effort to complete delivery of products as indicated on its acceptance of an order, but FluoroSeal Inc. assumes no responsibility or liability, and will accept no back charge, for loss or damage due to delay or inability to deliver caused by acts of God, war, labor difficulties, accident, delays of carriers, by contractors or suppliers, inability to obtain materials, shortages of fuel and energy, or any other causes of any kind whatever beyond the control of FluoroSeal Inc. FluoroSeal Inc. may terminate any contract of sale of its products without liability of any nature, by written notice to Buyer, in the event that the delay in delivery or performance resulting from any of the aforesaid causes shall continue for a period of sixty (60) days. Under no circumstances shall FluoroSeal Inc. be liable for any special or consequential damages or for loss, damage, or expense (whether or not based on negligence) directly or indirectly arising from delays or failure to give notice of delay.

WARRANTY

FluoroSeal Inc. warrants for one year from the date of shipment its manufactured products to the extent that FluoroSeal Inc. will replace those having defects in material or workmanship when used for the purpose and in the manner which FluoroSeal Inc. recommends. If FluoroSeal Inc.'s examination discloses to its satisfaction that the products are defective and an adjustment is required, the amount of such adjustment shall not exceed the net sale price of the defective product(s) - no allowance will be made for labor or expense for 3rd party repair or replacement of defective products or damage resulting from same. FluoroSeal Inc. warrants other manufacturers products which it sells to the extent of the warranties and terms & conditions of their respective makers. Where engineering design or fabrication work is supplied, Buyer's acceptance of FluoroSeal Inc.'s design or of delivery of work shall relieve FluoroSeal Inc. of all further obligation, other than expressed in FluoroSeal Inc.'s product warranty.

THIS IS FLUOROSEAL INC.'S SOLE WARRANTY. FLUOROSEAL INC. MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORE STATED OBLIGATION ARE HEREBY DISCLAIMED BY FLUOROSEAL INC. AND EXCLUDED FROM THIS WARRANTY.

FluoroSeal Inc. neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or products. This warranty shall not apply to any products or parts of products which (a) have been repaired or altered outside of FluoroSeal Inc.'s factory, in any manner; (b) have been subjected to misuse, negligence or accidents; (c) have been used in a manner contrary to FluoroSeal Inc.'s instructions or recommendations. FluoroSeal Inc. shall not be responsible for design errors due to inaccurate or incomplete information supplied by Buyer or its representatives.

LIABILITY

FluoroSeal Inc. will not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by FluoroSeal Inc. under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the products or of the engineering designs supplied to Buyer. Any litigation will be interpreted in accordance with the laws of the Province of Québec, Canada and any suit, action or proceeding relating to these terms and conditions may be instituted in any competent court sitting in the district of Montréal, Québec, Canada.

RETURNS

FluoroSeal Inc. cannot accept return of any product(s) unless its written permission has been first obtained, in which case same will be credited subject to the following: (a) all material returned must, on its arrival at FluoroSeal Inc.'s plant, be found to be in first-class condition; if not, cost of putting in saleable condition will be deducted from credit memoranda; (b) a handling charge deduction will be made from all credit memoranda issued for material returned; (c) transportation charges, if not prepaid, will be deducted from credit memoranda.

SHIPMENTS

All products sent out will be carefully examined, counted and packed. The cost of any special packing or special handling caused by Buyer's requirements or requests shall be added to the amount of the order. No claim for shortages will be allowed unless made in writing within ten (10) days of receipt of a shipment. Claims for products damaged or lost in transit should be made to the carrier, as FluoroSeal Inc.'s responsibility ceases, and title passes, on delivery to the carrier.

SPECIAL PRODUCTS

Orders covering special or non-standard products are not subject to cancellation except on such terms as FluoroSeal Inc. may specify on application.

PRICES AND DESIGNS

Prices and designs are subject to change without notice. All prices are F.O.B. Point of Shipment, unless otherwise stated.

TAXES

The amount of any sales, excise or other taxes, if any, applicable to the products, shall be added to the purchase price and shall be paid by Buyer unless Buyer provides FluoroSeal Inc. with an exemption certificate acceptable to the taxing authorities.

NUCLEAR PLANTS

Where the products, engineering design or fabrication is for nuclear plant applications, Buyer agrees (a) to take all necessary steps to add FluoroSeal Inc. as an insured supplier under the American Nuclear Insurers (ANI) pool and under the Mutual Atomic Energy Reinsurance Pool (MAERP) for property damage and liability insurance and if necessary steps could have been taken, but are not taken, Buyer shall hold FluoroSeal Inc. harmless against all such losses which could have been thus covered; (b) Buyer agrees to hold FluoroSeal Inc. harmless with respect to any personal injury or death, property damage or any other loss in a nuclear incident which is caused directly or indirectly by defective design, material, or workmanship, furnished by FluoroSeal Inc. and which is covered by insurance maintained by Buyer (or which could be so covered but with respect to which Buyer has elected to self-insure), and further agrees to waive subrogation by its carriers of such insurance against FluoroSeal Inc.; (c) as to nuclear hazards for which Buyer cannot obtain insurance coverage, the liability of FluoroSeal Inc. for any personal injury or death, property damage or any other loss directly caused by defective design, material, or workmanship furnished by FluoroSeal Inc. shall not exceed the value of the material furnished by FluoroSeal Inc. at the time of the loss occurrence.



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