

Nupros Inc.

# INDEX


- INTRODUCTION 03
- MISSION STATEMENT 04
- MONOLITHIC INSULATION JOINTS 05
- NUSEAL ADVANTAGES 06
- INSULATING FLANGE ASSEMBLY 08
- FLOW STRAIGHTENER / TUBE BUNDLE 11
- OUR CAPABILITIES 12
- OUR RESOURCES 13
- HEALTH & SAFETY POLICY 14
- CONTACT US 15

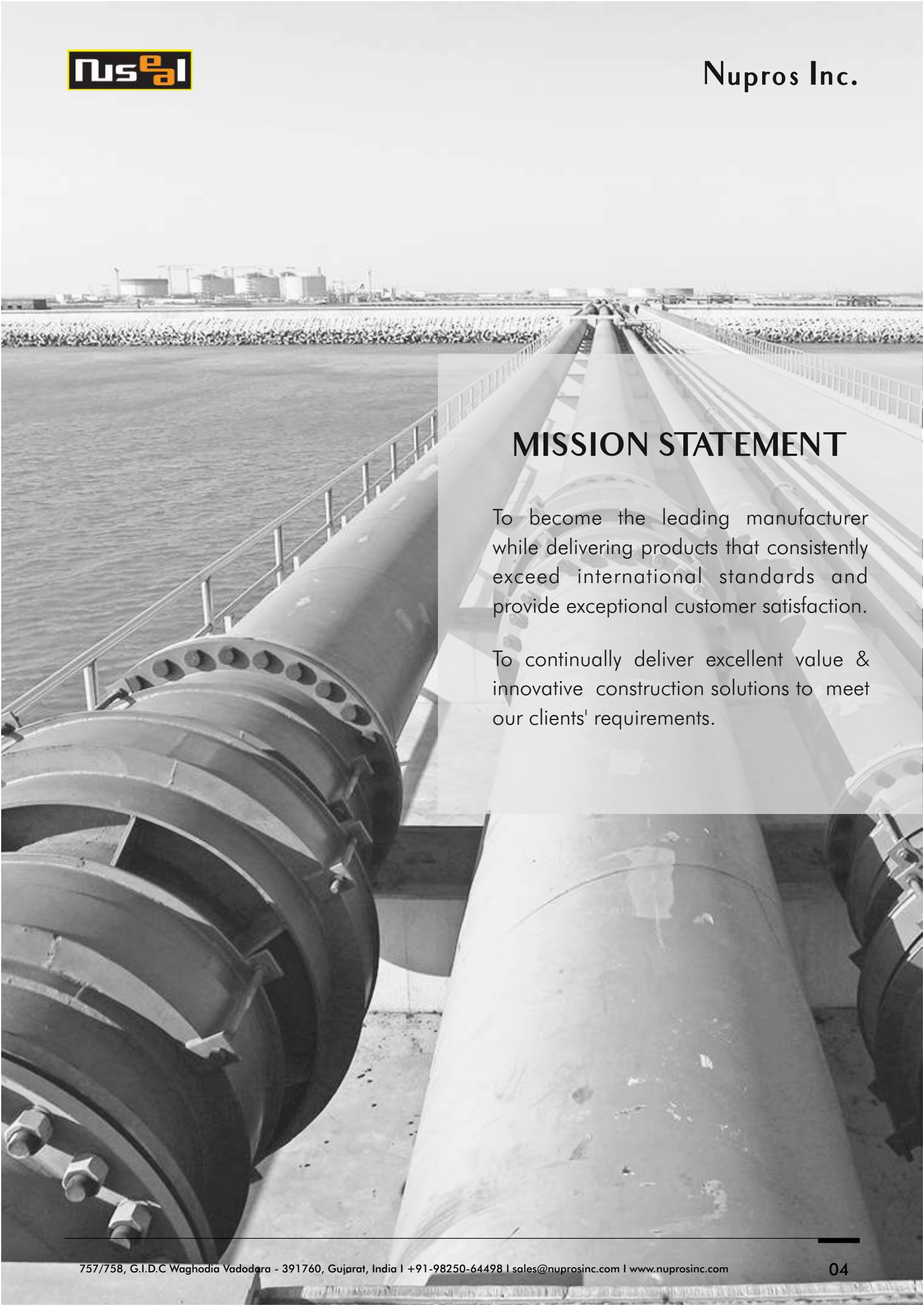


# INTRODUCTION

Nupros Inc. has been established in the year 1999. It is a company started by Mrs. Hetal Samir Kadakia.

The company was established to cater to the needs of EPC and CP contractors for petrochemical, refineries and power plant industry for their piping requirement.

The company grew over a period of 20 years to become trustworthy manufacturer for the products as under, Insulating gasket kit, insulating flange assembly, monolithic joints, flow profiler, rain caps/ventline flappers, gauge hatch, internal finished meta tubes in CS and SS, fabricated spools for meter runs and flow straighteners.



# MISSION STATEMENT

To become the leading manufacturer while delivering products that consistently exceed international standards and provide exceptional customer satisfaction.

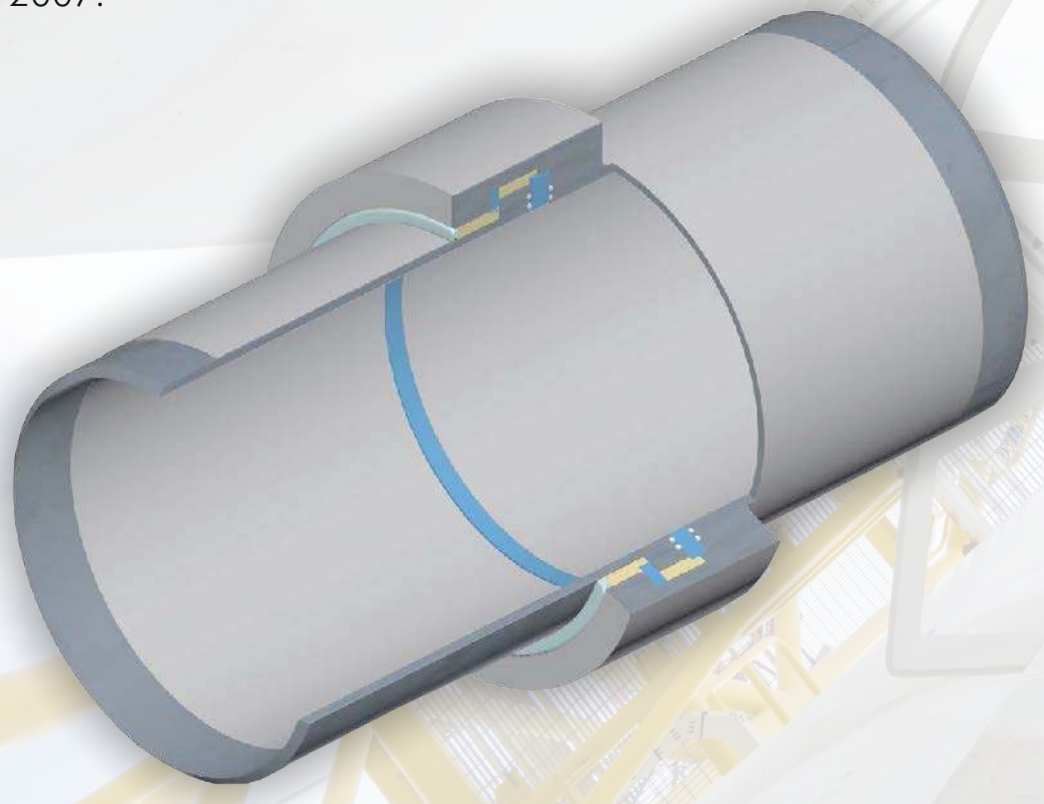
To continually deliver excellent value & innovative construction solutions to meet our clients' requirements.

# MONOLITHIC INSULATION JOINTS

Much of the world runs on pipelines. When you drive your car, the fuel that you use will probably have passed under pressure through pipelines at some stage. The water that you drink the gas that you use to heat your dinner. All these pipelines has monolithic insulating joints. This is because pipelines are subject to corrosion, just like any metal object that is exposed to the elements. Whether overground, underwater or buried underground, pipelines need to be protected against damage from water and air, as well as electric currents generated by lightning.

Monolithic Isolation Joints that are used to provide electrical isolation and cathodic protections in pipeline, tanks and pumping station where petroleum gas & water are carrier fluids. In addition, these Monolithic Isolation Joints are also used to provide electrical sectioning and passive protection against corrosion on inlet and outlet pipes of meters, tanks and pumping station.

The Monolithic Isolation Joints offered by NUPROS INC. are manufactured using quality material and do not require any kind of maintenance. The usage of monolithic isolating devices in cathodically protected systems is considered by NACE SP0286-2007.



# NUSEAL ADVANTAGES

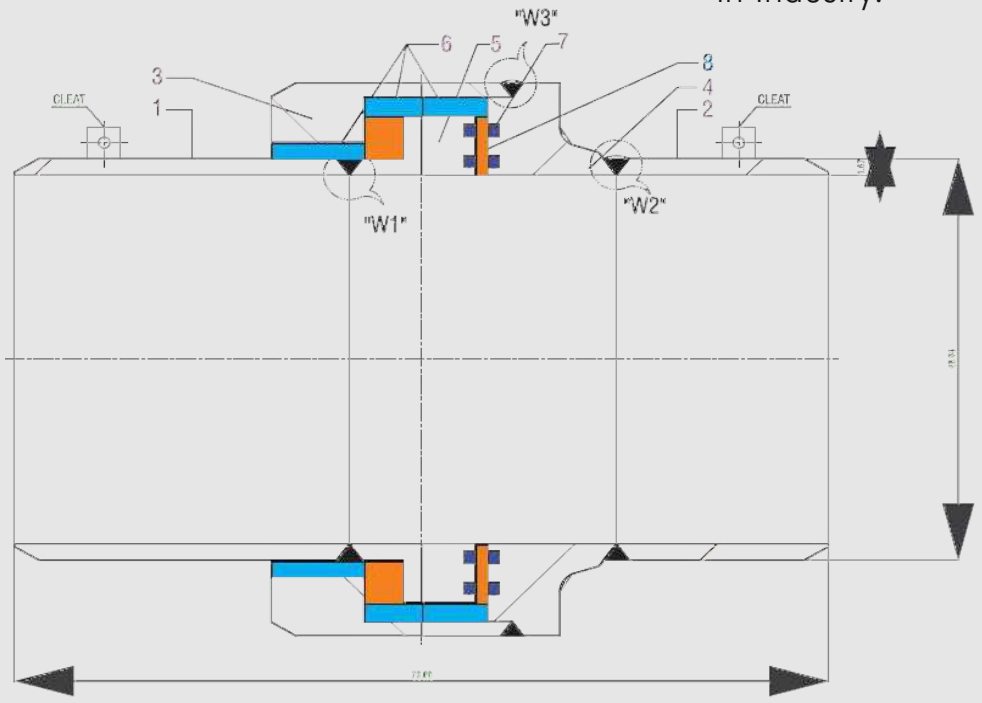
## TECHNICAL SPECIFICATION

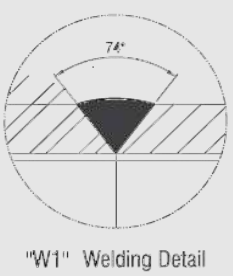
Nupros Inc. offers NUSEAL monolithic joints in various piping grade, pressure class, design temp, corrosion allowance, testing requirements, joint length, electrical properties and coating thickness as per clients specification.

Nuseal Monolithic joints basic tech spec along with cross section view is as under

## TECHNICAL FACILITY

Nupros Inc. has in house testing facility of Hydrotesting, Pneumatic testing, vaccum testing, Hydrobend test rig, Electrical insulation testing, High voltage testing, Coating thickness gauge, measuring instruments are calibrated to national standards. Physical / chemical / micro / hardness test are carried by NABL approved lab & UT, MPT, Radiography by best professional agency in Industry.

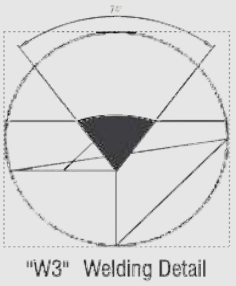


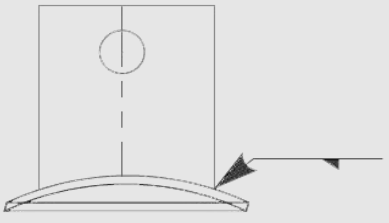

"W1" Welding Detail



"W2" Welding Detail



"W3" Welding Detail



Welding Detail
cs clits

*Sealing system offered by Nupros Inc. are set of O rings, sets of square seals or Useal for high pressure application.*



## NUSEAL Monolithic Joints Basic Technical Data Sheet

| | |
|---|---|
| CERTIFICATION | EN 10204 3.1 or 3.2 |
| NDT PUP Bevels | 100% MT/UT/ASME V – ASME VIII |
| NDT W3 Closure Weld | 100% MT/UT/ASME V – ASME VIII |
| NDT W1-W2 Butt Weld | 100% RT/UT/ASME V – ASME VIII |
| Pneumatic Test | >2 Bar 10 Min |
| Hydrostatic test | At test Pressure or as per Customer requirements |
| Hydro- fatigue test | 5 Cycles at 80% TP or as per Customer requirements |
| Insulation Resistance | >25 M |
| Dielectric Strength Test | 2 to 10 kv (AC) % 50Hz (1-5 min) |
| Design Code | ASME VIII D.I - ANSI B 31.8/4 |
| Design Factor | 0.2 to 0.6 |
| Max allowable lords | up to 95% SMYS-Based On Customer requirements |
| Insulation | NEMA G10/G11 Thermoseting Epoxy Composite |
| Internal Coating | >150 Micron |
| External Coating | >150 Micron |

## Production Range

| | |
|---|---|
| SIZE | From ½" up to 100" and over |
| RATING | From ANSI 150 to ANSI 2500, API 10000 and over |
| END CONNECTIONS | Butt welded, WNRF, RF, RTJ or per Clients spec. |

# INSULATING FLANGE ASSEMBLY

## NUSEAL Insulating Flange Assembly

Nuseal Insulating Flange Assembly, an alternative to expensive monolithic joints used in pipelines, avoids breakage of expensive insulating gasket kits during the installation process. It can be used best in CP systems, in cases of galvanic corrosion in dissimilar metals and at jetty terminal manifolds. Additionally, Nu seal offers its insulating flange assembly for high temperature services and potable water services, while the gasket of the same is tested in accordance with the NFS guidelines.




## Nuseal Insulating flange assembly for CP system

The Nuseal insulated flange assembly, simplifies the process of corrosion control in Cathodic Protection. CP is a common and important practice by pipeline facility owners, which is beneficial in mitigating the corrosion of buried infrastructure.

If flange are not insulated could draw a great amount of current, which would rapidly decay anodes and thereby require a higher voltage. The idea is to evenly protect the pipeline and not use voltage or current that is too high and can damage the coating.

Also, if a structure (such as a compressor) is hit by lightning, the insulator can prevent the current from damaging a rectifier.

Insulating flange assembly is a pre-fabricated isolation flange assembly, meaning, the joints are fully assembled, tested at our factory and then shipped.

## Nuseal insulating flange assembly for galvanic corrosion

Nuseal insulating flange assembly is used to protect pipelines from galvanic corrosion that occurs when dissimilar metals joints are exist in the pipeline. These are used in the in the petrochemical complex and steel industry. These joints also eliminate use of expensive cladded flanges.

## Nuseal insulating flange assembly for terminal manifold for jetty and tanker/shore isolation

Why Nuseal insulating flange assembly is used in jetty manifolds:

Due to differences in the electrical potential between the tankers and berths, there is a risk of electrical arcing at the manifold during connection and disconnection of the shore hose or loading arm. To enable protection against this risk, there needs to be a means of electrical isolation at the tanker /shore interface. Large currents can flow in electrically conducting pipework and flexible hose systems between the tanker and shore. The sources of these currents are:

- Cathodic protection of the jetty or the hull of the tanker, provided either by an impressed current system (Impressed Current Cathodic Protection - ICCP) or by sacrificial anodes.
- Stray currents arising from galvanic potential differences between tanker and shore, or leakage effects from electrical power sources.

An all metal loading or discharge arm provides a very low resistance connection between tanker and shore and there are dangers of an incendive arc when the ensuing large current is suddenly interrupted during the connection. Similar arcs can occur with flexible hose strings containing metallic connections between the flanges of each length of hose.

Vessels transferring low flash point flammable liquids, at marine terminals, or during STS transfer operations, need to take precautions against potential sources of ignition. One source is the static charge caused in the cargo transfer system, which may discharge and cause a high voltage, low current spark.

As illustrated by us, you can see why we recommend Nuseal Insulating Flange Assembly.

Sizes available: up to 16" and above.
End connection - Flange connection to suit jetty manifolds
MOC: Carbon steel, Alloy steel and Stainless steel
Coating: Internal external coating as per client's requirement

## ADVANTAGES

- Cost effective when compared to monolithic joints.
- Assembled joints eliminate the need for kits and also saves on-site labour.
- Simplifies the installation process, as welding is similar to that of monolithic joints.
- Controlled assembly and pre-testing eliminate the need for adjustments.
- Mechanically designed, as per piping class.
- Servicing and maintenance are simplified.

- Bolt and stud size do not change, thus making joint strong.
- Flange bolt holes have perfect alignment and close tolerance fit to the dielectric sleeves of 0.8 mm thickness.
- Flange studs/nuts are manufactured using alloy steel of ASTM Designation A-193-52T Grade B-7/A-194 Class 2-H, or as required by the pipeline design. Precise machine steel washers are added to accommodate the outer diameter of insulating sleeves for better electrical isolation.
- Precise assembly with accurate torqueing carried out in stages followed by the required hydro testing.
- Tested for minimum resistance of 5 Moh ms.
- Internal flange gap is sealed with epoxy resin to restrict deposition that gets carried away with media, for smooth flow.

## TECHNICAL INFORMATION

NUSEAL Insulating flange assembly, is manufactured in all combinations of flanges, insulating gaskets and insulating sleeves and washers. In doing so, we cater to an array of needs - flange isolation to CP system in high temperature services, potable water services and hydrocarbon services, galvanic corrosion and terminal manifold isolation at jetty.

The material selection is selected as per media characteristics too.

Flange standards to select from: ASME/ANSI B16.5/BS1560 Section 3.1 (Class 150 to 1500), ASME /ANSI B 16.1/BS 1560 Section 3.2 (Class 125, 250), AS 2129- table A to T,AS4087 Class 14,16, 21,35, ISO 7005-1 PN 2010420, DIN 2501-Part 1 (PN 6to PN100), JIS B 221 0:PN5 to PN63 and AWWA standards.

Insulating gaskets materials to select from are: Nema LI 1-2001 G10 (applicable in potable water too)/G11/Fr4, Phenolic and Vermiculite for high temperature.

Insulating Sleeves to select from: Nema LI 1-2001 G 1 0/G11 / FR4, Phenolic, Maylar, Mica and Nomex. One-piece integrated sleeve and washer in Maylar are also available Insulating washers to select from: Nema LI 1-2001 G 10/G 11 /FR4, Phenolic, Maylar, Vermiculite and Mica .

## MANUFACTURING RANGE

Nuseal Insulating flange assembly can be manufactured in the following sizes:

- Line size:½" to 100"
- Line thickness: 3mm to 50mm thickness
- Pressure rating : ANSI 150# to 1500#, PN 5 to PN 420 or as per above stated flange standards
- End Connection: Butt weld, Socket weld, Flanged ends

# FLOW STRAIGHTENER / TUBE BUNDLE

**To stabilize a flow in a pipe upstream of a measuring element**



A flow straightener greatly reduces disturbances in a flow while a conditioner reduces disturbances and also allows a good redistribution of the speed profile, at each point of the section of the pipe.

Thus, these devices make it possible to reduce the upstream straight lengths and to improve the measurement accuracy in the case of a flow measurement. They are therefore to be positioned between pipe fittings or Flanges and a flow measurement element while respecting the distances specified in the standard.

## Importance of Flow Conditioning

***Flow conditioners, or flow conditioning, improve a flow meter's accuracy by delivering a uniform flow profile at the sensor location.***

Anytime there is a change in the size, the direction of a pipe in which gas flows, or a disturbance, the flow profile has been impacted, and accurate flow measurement is hindered. Whenever there is a limited straight run or a developed profile cannot be achieved, flow conditioning becomes necessary to create a known and repeatable velocity profile and to enhance the flow meter's accuracy.

## In-Line Flow Body Style Meter

The flow conditioning is built into the Sage Metering inline flow body meter. The recommended upstream distances ahead of the flow body can be significantly reduced in these cases due to the built-in flow conditioning.

## Insertion Style Meter

It is recommended that insertion style meters use a Captive Flow Conditioner assembly, consisting of two flow conditioner plates positioned between two flanges.

# OUR CAPABILITIES

## Manufacturing Capabilities Product Size wise

Products manufactured by Nupros Inc. are listed as under,

- Insulating gasket kits – ½" to 100"
- Insulating flange assembly – ½" to 100"
- Monolithic joints – ½" to 36"
- Rain Caps/Flappers – ½" to 16"
- Gauge Hatch – 2" to 16"
- Dismantling joints – 12" to 72"
- AGA 3 /AGA 9 finish pipes in SS and CS – ½" to 40"
- Metering Spools
- Flow Straightener / Flow Profiler – Any given size, Manufactured up to 24"

### A. Manufacturing:

i) In House Manufacturing Activity:

- Fabrication Machining Honing Welding

ii) Out Sourced Manufacturing Activity:

- Blasting Painting
- Packing & Fumigation

### C. Material Handling:

i) Out Source Handling Facility:

- Vehicle for Transportation
- Heavy duty Crane for loading & unloading

### B. Testing:

i) Out Source Testing Facility.

- Raw Material Testing - Physical, Chemical, Micro, Macro, IGC practice B, Hardness, Impact Test, etc.
- Non-Destructive testing –Radiography, UT, MT.
- Calibration of Gauges, Measuring Instruments, Testing Instruments.



# OUR RESOURCES

## A. Manufacturing Equipments

- Hydraulic Press 75Tons – 1 set
- Hydraulic Press 600Tons – 1 set
- Inverter 400 AMP with TIG unit – 1 set
- MIG welding unit 250 amp -1 set
- MIG welding unit 400 amp -1 set
- Inverter 200amp welding unit with TIG – 2 set
- Pillar Drill machine 38mm -2 nos
- Radial Drill machine 38 mm – 1 nos
- Lathe Machine 15" center 18ft long – 1 nos
- Lathe Machine 15" center 14ft long – 1 nos
- Lathe Machine 8" center 6ft long – 1 nos
- Lathe Machine 6" center 4ft long – 2 nos
- Lathe Machine 20" Center 8ft long – 1 nos
- Bench grinders 150mm – 2 nos
- Hand grinders AG7 – 6 nos
- Hand grinders GQ4 – 3 nos
- Hand grinders AG4 – 2 nos
- Flexible Shaft grinders – 2 nos
- Honing Machine- 1 Nos
- Electrode Drying Oven – 1 no
- Gas cutter - 2 sets
- Pug Cutting Machine - 2 nos
- Profile cutting machine – 1 no
- Orbital Pipe Cutting – 1 no

## B. Testing Equipments

I) In House Testing Facility:

- Hydro test pump -0 to 100kg/cm2-1 set
- Hydro test pump-0 to 450 kg/cm2-2 set
- HV testing 10KV – 1 set
- HV testing 20KV – 1 set
- Meggar- 1000M ohms-1 nos
- Dial Bore gauge up to 300mm -1 set
- Vernier Callipers – 8 nos up to 1000mm
- Bore Gauges - 3 Sets up to 450 mm
- Air Blower 20 HP – 1 nos
- Pneumatic testing – 1 set
- Hydro bend Testing – 1 set
- Vacuum Testing – 1 set

## C. Material Handling Equipments

I) In House Handling Facility:

- EOT Crane SWL 5 Tons – 2 Nos
- Chain Pulley Blocks 3 Tons – 2 Nos
- Material Movement Trolley – 2 Nos





# HEALTH & SAFETY POLICY

In order to maintain high standards of Health and Safety protection within all its activities and to assure their continual improvement, Nupros is committed to adopt an Occupational Health and Safety Policy based on the achievement of following main objectives:

- Prevent from exposure to dangers in any areas pertinent to its activities on the basis of principle that all the accidents are preventable.
- Act responsibly in full respect of environmental, health and safety Italian and European legislation, according to the provisions of ISO 45001:2018.
- Protect the Health of its Employees as well as whoever may be involved or affected by its activities, in the optics of "ZERO ACCIDENTS".

## Health and safety at work

- Assuring a constant commitment to comply with all applicable legal requirements, with particular care towards Health, and Safety requirements.
- Achieve Zero accidents or injuries, assuring a constant commitment to prevention of injury and ill health and to a continual performance improvement in health and safety management.
- Assuring a constant commitment to comply with all applicable legal requirements and with the other requirements set out by the applicable technical regulations.
- Providing adequate provision of human, technical and financial resources to achieve the defined targets. Clearly defining the duties and responsibilities of all Employees with regard to health and safety.
- Planning, implementing and ensuring an adequate level of training for all Employee and by maintaining active an effective communication system for all Health and Safety Issues.
- Actively aiming to improve its standards in line with principles of present Policy.
- Arranging periodical reviews (at least once per year ) to review and set health and safety objectives and targets.






# Nupros Inc.

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