NUPI for DATA CENTERS

AN OVERVIEW OF NUPI'S PRODUCT OFFERINGS FOR DATA CENTERS

NUPI | The Company

FIVE DECADES OF EXPERIENCE

NUPI is a manufacturer of high-quality pipes and fittings for HVAC, plumbing, gas and fuel distribution systems since 1972.

The Company sports innovating know-how, a reliable quality systems, and excellent customer service.

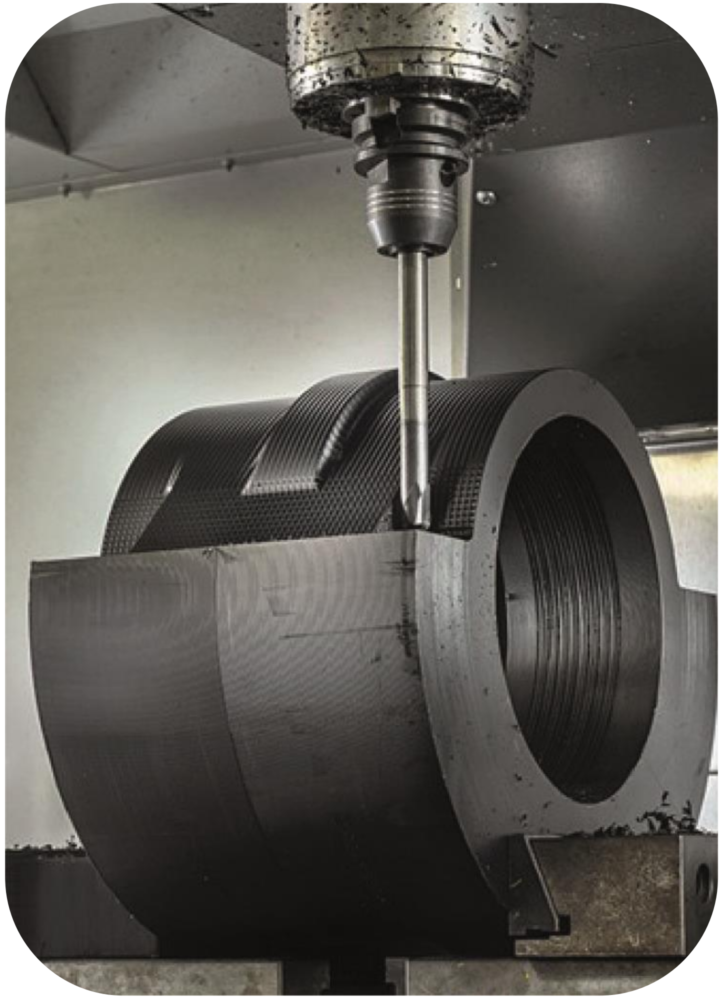
It has an established worldwide reputation and job references in 142 countries.

COMPANY CERTIFICATIONS:

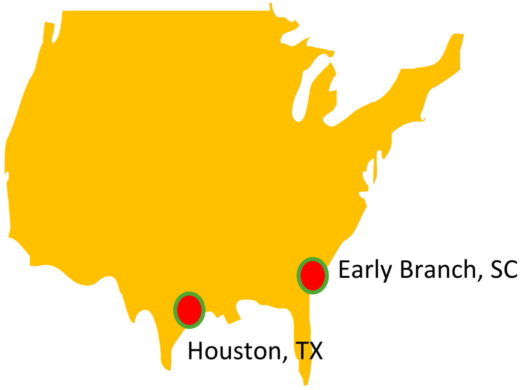
- ISO 9001:2015 for quality & management.
- ISO 14001:2015 for environment.
- ISO45001:2018 for safety at work.

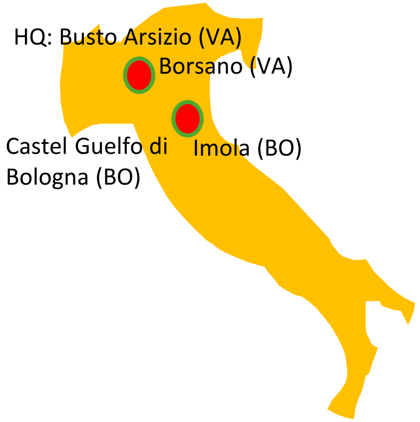
PRODUCT CERTIFICATIONS:

- KIWA, WaterMark , DVGW, NF, SVGW SWISS, EAC, FM, etc.



NUPI | Facilities



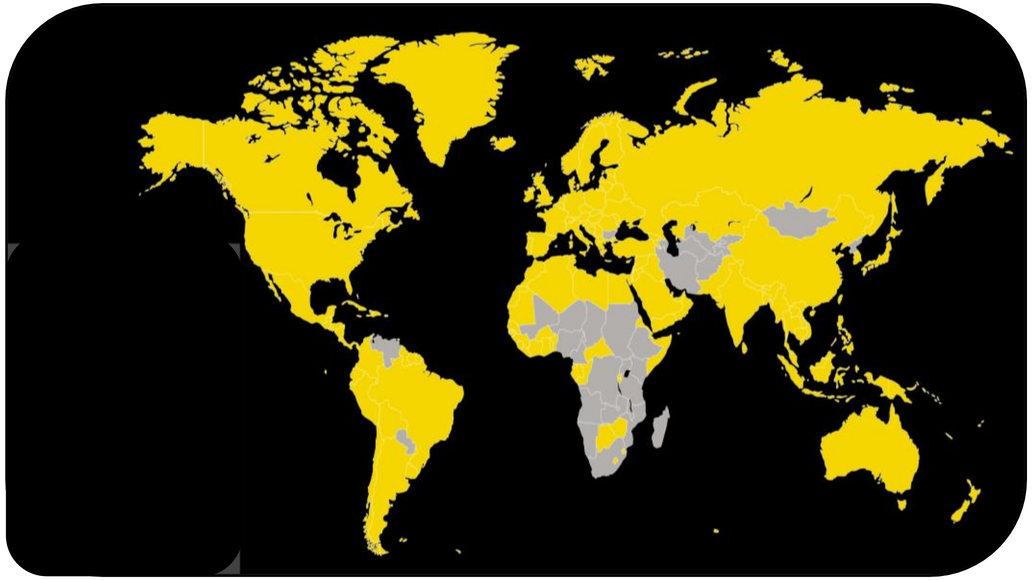


NUPI IN THE WORLD

NUPI has a worldwide presence and can service customers in **142 countries** from its **seven** facilities:

- **Four** production and fabrication facilities in Italy.
- **Two** production and fabrication facilities in the United States.

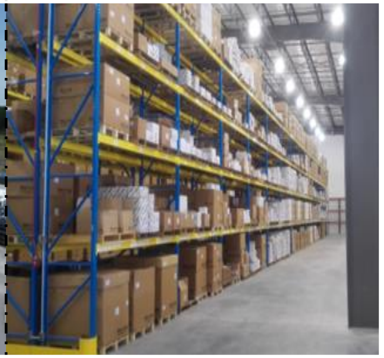
Thanks to its facilities in the country, **NUPI stocks up to $30M of pipe and fitting, produces pipe, and fabricates fittings directly in the United States**, limiting reliance on shipment from Italy and being able to respond quickly to customer's demands.



NUPI | Facilities





Busto Arsizio (VA) - Italy	**Borsano (VA) – Italy**	**Castel Guelfo di Bologna (BO) – Italy**	**Imola (BO) – Italy**	**Early Branch SC – USA**	**Houston TX - USA**
Headquarter Fittings mouldings and warehouse	Fabricated and customized products	Pipe extrusion and warehouse	Pipe extrusion and warehouse	**Pipe extrusion and warehouse**	Warehouse
475,000fts total area 235,000fts production	160,000fts total area	860,000fts total area 215,000fts production	215,000fts total area 65,000fts production	**1,295,000fts total area 110,000fts production**	110,000fts total area 35,000fts warehouse
60 production lines	CNCs, welding stations	13 extrusion lines	4 extrusion lines	**CNCs, welding stations, 3 extrusion lines**	
Training center for authorized distributors		Training center for authorized distributors		**Training center for authorized distributors**	

NUPI | Technical Advantages v. Metal

POLYPROPYLENE & POLYETHYLENE PIPING SYSTEMS
are currently the most suitable solution to the problems caused by metal installations thanks to its characteristics.

NO CORROSION
PP-RCT pipes are by nature highly resistant to water hardness and to many chemical substances, e.g., alkalis and many acids.

LIMITED HEAT LOSS AND CONDENSATION
Like all plastic materials, PP-RCT is a poor heat conductor and is, therefore, an excellent thermal insulator.

NO SCALING
The inner smoothness of pipes prevents the formation of scale.

FROST RESISTANCE
The elasticity of PP-RCT allows the pipe to increase its section when the volume of the fluid changes as the water freezes.

LOWER NOISE OF THE SYSTEM
The elasticity and the sound absorption of PP-RCT prevent the spread of noise and vibrations due to the passage of water and the water hammer effect.

SUITABLE FOR USE IN SEISMIC AREAS
This feature is recognized by international boards of experts, as PP-RCT is resilient within the structure of a building.

RESISTANCE TO STRAY CURRENTS
PP-RCT is a poor conductor of electricity, so no perforation in the pipe or fitting will ever occur due to stray currents.

DURABILITY
More than 50 years, depending on temperatures and operating pressures.

RESISTANCE TO ABRASION
The high abrasion resistance of polypropylene pipes allows the passage of water at high velocity without erosion problems.

LIMITED HEAD LOSS
PP-RCT pipes have limited head loss thanks to the inner smoothness.

Data Centers | Overview

One of the most crucial tasks for any data center is environmental monitoring and management.
High temperatures and humidity levels can damage IT equipment causing them to fail.
Metrics for an efficient system are Power Usage Effectiveness (PUE), Water usage Effectiveness (WUE), and Carbon Usage Effectiveness (CUE).

Data Centers | Overview

COOLING & POWER CONSUMPTION

Data center investments double every year.
Investments consider 3 fundamental elements:

- Environment impact.
- Energy efficiency.
- Forecast of economic development in the short term.

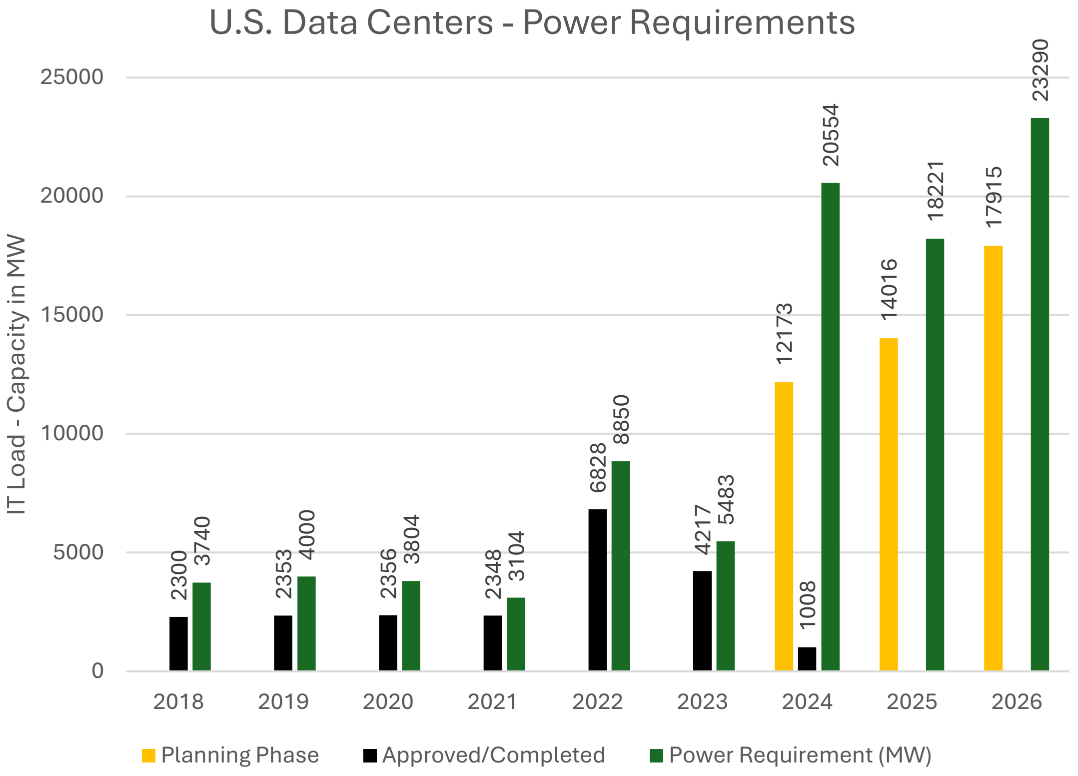
Data Centers must guarantee 24h uninterrupted operation for 365 days and maintain constant room temperature and humidity in winter and in summer. Thus, up to 30% to 40% of power consumption is devoted to cooling.

The energy consumption impact is unparalleled. Global datacenter consumption in 2024 was 1.5% of the total.

- “Hyperscale” large data center: 3,000 kW = 1,000 residential units.
- “On-premise” small/medium data center: 300 kW = 100 residential units.

Under no circumstances must a data center loose efficient cooling capacity and secure energy access.

Cooling systems and power supply must always be guaranteed.



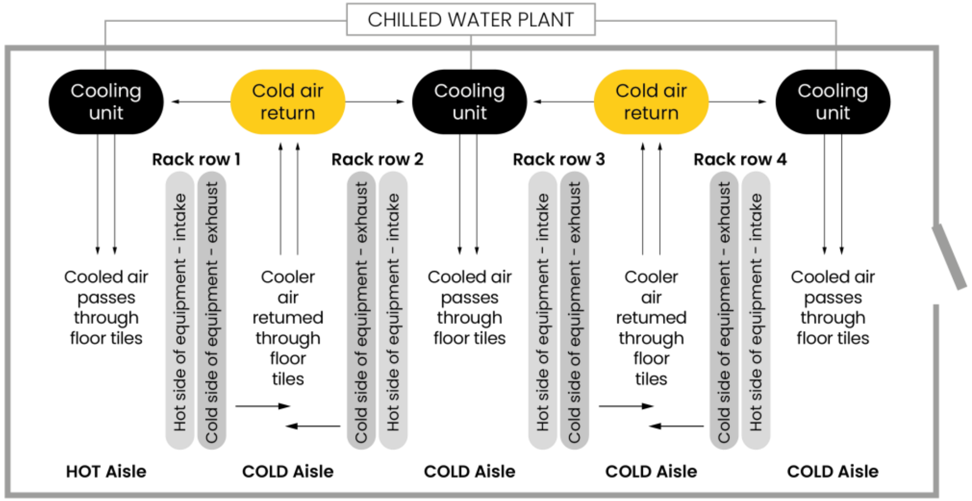
Data Centers | Cooling Systems

Air Cooling - Chilled Water Systems (CW)
Chilled water systems are generally used in medium and large size facilities where chiller plants act as centralized cooling systems.

Chilled water provides cooling to facilities by absorbing heat from the building's spaces. Then, the chiller removes the heat from the water through a cooling cycle.
Cold air is introduced into the data center air handling system, which provides cooling to the machine rooms by blowing air onto an exchanger filled with chilled water.

These CW units can adjust fan speed to maintain a preset static pressure, ensuring that humidity and temperature levels remain stable.

Advantages:
Better energy efficiency and centralized storage of refrigerant, and flexible installation and configuration.



Data Center Layout with Hot and Cold Aisles

Data Centers | Cooling Systems

Liquid cooling
It is an efficient and cost-effective cooling system. Liquid is more efficient than air at transferring heat away from emitting sources. It can support greater equipment and heat generation, such as in high density and edge computing data centers.

Geothermal cooling
The near constant temperature of the Earth below surface level provides stable cooling effect which is not affected by climate. In data centers, geothermal cooling uses a closed loop pipe system with water or another coolant that runs through vertical wells underground, filled with a heat transferring liquid.

Solar cooling
Converts heat from the sun into cooling that can be used in data center air cooling systems. The system collects solar power and uses a thermally driven cooling process to decrease the air temperature in a building. This is useful in areas with a lot of sunlight or data centers looking to supplement their current cooling with a more environmentally friendly method.

Data Centers | NUPI Applications

NUPI’S KEY BENEFITS

NUPI’s complete piping & fitting systems are applicable to a full range of services that go from emergency power supply to liquid cooling in computer rooms. There are several advantages in using NUPI’s product lines in place of metal systems in all relevant applications in Data Centers.

- Lighter weight: plastic densities are 0.03 lbs./in^3 vs. metals 0.28-0.33 lbs./in^3.
- Faster handling and generally no special handling equipment required.
- Less structural steelwork and concrete required.
- Health and safety benefits (less weight to be handled by personnel during installation).
- Improved chemical resistance.

Emergency Power Supply

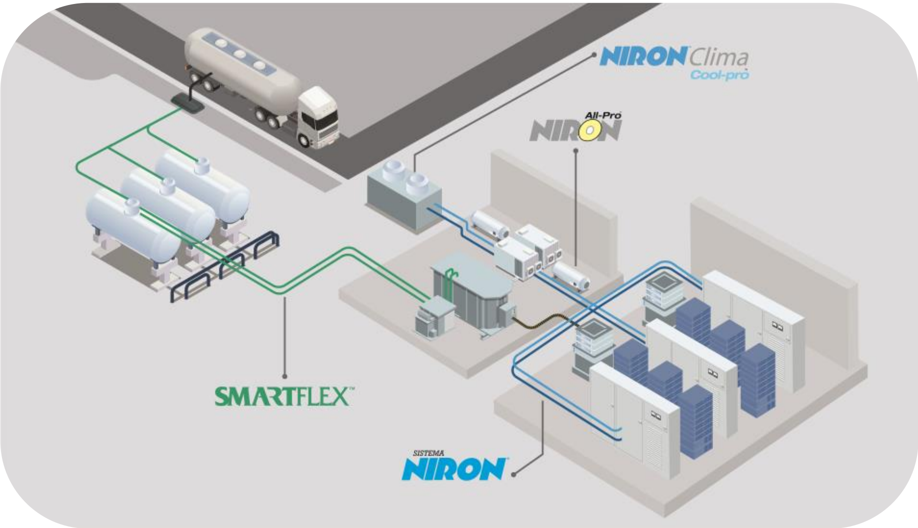
Chilled water for pumping stations and machine rooms

Chilled water on rooftops

Direct liquid cooling in computer rooms

Data Centers | NUPI Applications

APPLICATION OF NUPI'S PIPING SYSTEMS TO DATACENTERS



NUPI offers four state-of-the-art product lines:

- **NIRON Clima** for water conveyance, condensate drainage, chilled water systems.
- **NIRON CoolPro** UV resistant pipe for rooftop installations.
- **NIRON AllPro** preinsulated pipe.
- **SMARTFLEX** for fuel transportation in emergency power supply systems.

FUELING

SMARTFLEX™

HVAC

NIRON®

CoolPro NIRON Clima

OTHER APPLICATIONS

AllPro™ NIRON Clima

NIRON for DATA CENTRES

COOLING SYSTEM & WATER CONVEYANCE SYSTEMS

NIRON | NUPI's Line for HVAC

NIRON

AllPro™ NIRON Clima

CoolPro™ NIRON Clima

NUPI'S POLYPROPYLENE PIPE & FITTINGS FOR HVAC

NIRON is NUPI's state-of-the-art piping and fitting system for water transportation, HVAC systems, hydronic heating, mechanical rooms, and plumbing. Its based material is Borealis' **β-PP-RCT**, the latest evolution of polypropylene resistant to chlorine-based water treatments.

- NUPI extrudes pipe and fabricates fittings up to 24" in the U.S.
- Fittings are produced by injection molding up to 16" in Italy.
- It can be joined by fusion welding technologies (butt, socket, & electrofusion).
- It is well suited for spool prefabrication and installation on site.
- It comes with unique products such as **preinsulated AllPro** and **UV-resistant CoolPro**.
- It has an extensive local representation, distribution, and support network in North America.
- It comes with a 30-year warranty.
- It has a wide field of applications from heating & cooling, chilled water, compressed air, cooling towers, and mechanical rooms.

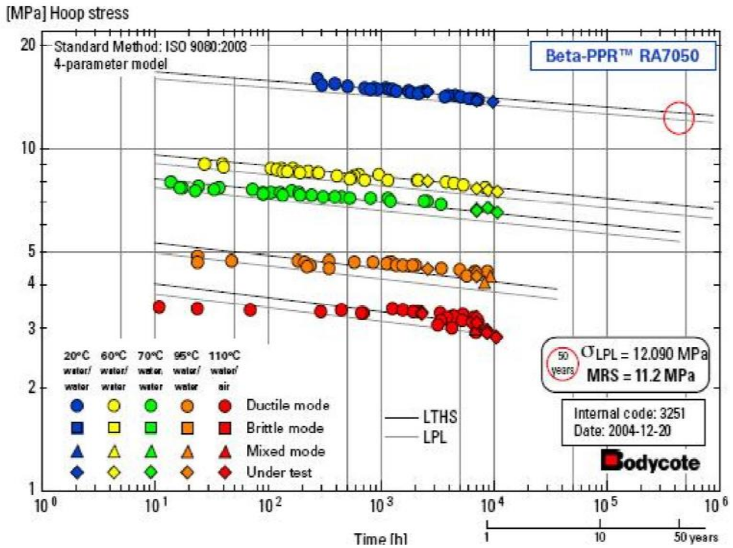
For the above reasons, NIRON stands up as a piping system that combines high quality resin, and extensive product range, and Nupi's five-decade long experience in pipe and fitting production.

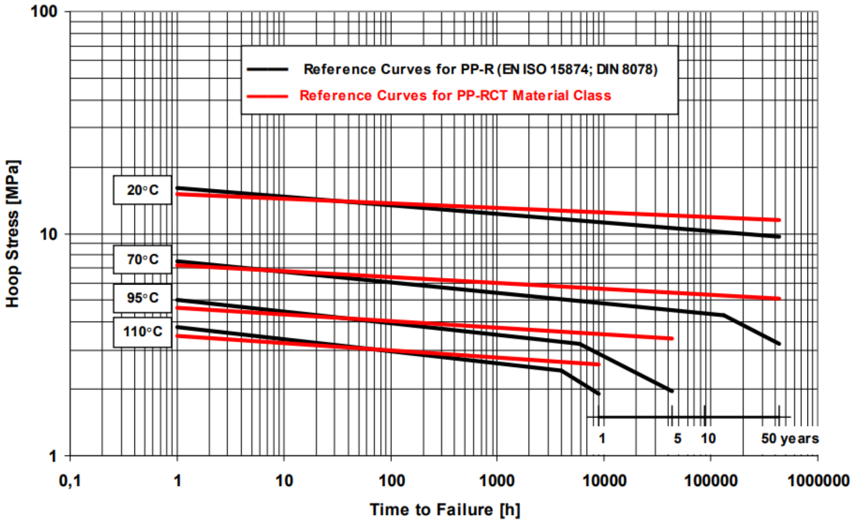
NIRON | Material

NIRON’S STRONGEST ASSET

NIRON is made of Borealis’ **beta-phase, random, crystalline, temperature polypropylene** (**β-PP-RCT**).

The material is produced by Borealis with a patented process and is **β-phase**, unlike the more common α-phase PP-RCT.
β-PP-RCT shows increased chemical resistance, chlorine and chloramine resistance, and pressure performance at high temperatures.
It presents **no weeping, no embrittlement, no knee in the regression curve, and stability at high temperature.**





NIRON | Material

BETTER THAN PPR PIPING

For the above reasons, NIRON pipes and fittings in β-PP-RCT are better performing than regular PPR pipe even at higher temperatures.

ALLOWABLE OPERATING PRESSURES FOR PP-R PIPES CONVEYING WATER

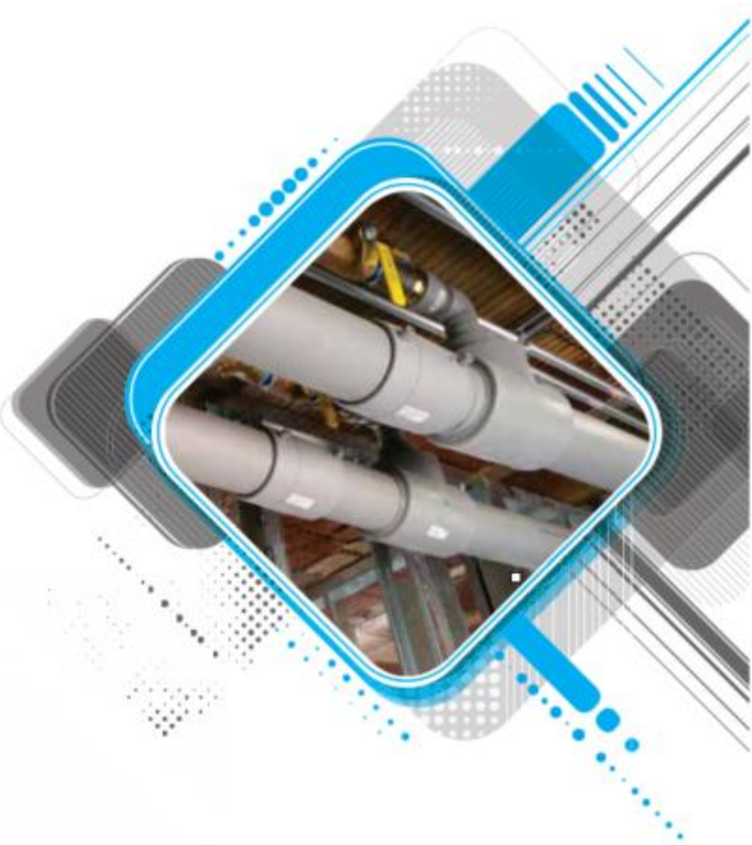
Safety factor (SF) = 1,25

T°	Years of service	S 2,5 SDR 6	S 3,2 SDR 7,4	S 4 SDR 9	S 5 SDR 11	S 8 SDR 17
		ALLOWABLE OPERATING PRESSURE (bar)				
10	1	42,10	33,40	26,50	21,10	13,30
	5	39,70	31,50	25,00	19,80	12,50
	10	38,60	30,70	24,40	19,30	12,20
	25	37,40	29,70	23,60	18,70	11,80
	50	36,40	28,90	23,00	18,20	11,50
	100	35,50	28,20	22,40	17,80	11,20
20	1	35,90	28,50	22,60	18,00	11,30
	5	33,70	26,80	21,30	16,90	10,60
	10	32,80	26,10	20,70	16,40	10,40
	25	31,70	25,20	20,00	15,90	10,00
	50	30,90	24,50	19,50	15,40	9,70
	100	30,10	23,90	18,90	15,00	9,50
30	1	30,50	24,20	19,20	15,30	9,60
	5	28,60	22,70	18,00	14,30	9,00
	10	27,80	22,10	17,50	13,90	8,80
	25	26,80	21,30	16,90	13,40	8,40
	50	26,10	20,70	[illegible]	13,00	8,20
	100	25,40	20,10	16,00	12,70	8,00
40	1	25,90	20,60	16,30	13,00	8,20
	5	24,20	19,20	15,30	12,10	7,60
	10	23,50	18,70	14,80	11,80	7,40
	25	22,60	18,00	14,30	11,30	7,10
	50	22,00	17,40	13,90	11,00	6,90
	100	21,40	16,90	13,50	10,70	6,70

ALLOWABLE OPERATING PRESSURES FOR PP-RCT PIPES CONVEYING WATER

Safety factor (SF) = 1,25

T°	Years of service	S 3,2 SDR 7,4	S 4 SDR 9	S 5 SDR 11	S 8 SDR 17
		ALLOWABLE OPERATING PRESSURE (bar)			
10	1	36,20	28,80	22,8	14,40
	5	35,10	27,90	22,1	14,00
	10	34,70	27,50	21,9	13,80
	25	34,10	27,10	21,5	13,50
	50	33,60	26,70	21,2	13,40
	100	33,20	26,30	20,9	13,20
20	1	31,50	25,00	19,9	12,50
	5	30,50	24,20	19,3	12,10
	10	30,10	23,90	19,0	12,00
	25	29,60	23,50	18,6	11,70
	50	29,20	23,10	18,4	11,60
	100	28,80	22,80	18,1	11,40
30	1	27,30	21,70	17,2	10,80
	5	26,40	20,90	16,6	10,50
	10	26,00	20,60	16,4	10,30
	25	25,50	20,20	16,1	10,10
	50	25,10	19,90	15,8	10,00
	100	24,80	19,70	15,6	9,80
40	1	23,50	18,60	14,8	9,30
	5	22,60	18,00	14,3	9,00
	10	22,30	17,70	14,1	8,80
	25	21,80	17,30	13,8	8,70
	50	21,50	17,10	13,6	8,50
	100	21,20	16,80	13,3	8,40



NIRON | β-PP-RCT

THE APEX EVOLUTION OF PP-RCT PIPING

β-PP-RCT is a **β-nucleated** polypropylene. The material structure is formed by small crystals with a predominant hexagonal structure (type β). **This structure makes NIRON very well performing in high pressure and high temperature.**

Wide beta crystallization changes the nature of the basic polypropylene material making it much stronger as the spaces between the crystals are minimized. Thanks to the hexagonal configuration of the crystals, these spaces are well arranged in the crystalline frame with poor connections between them.

This limits preferential paths for ions and oxidizing agents into structure. In fact, NIRON is proved to have **excellent chemical resistance to oxidation by free chlorine ions (NaHClO) and to disinfection treatments (resistant up to 4,3 ppm of NaClO).**

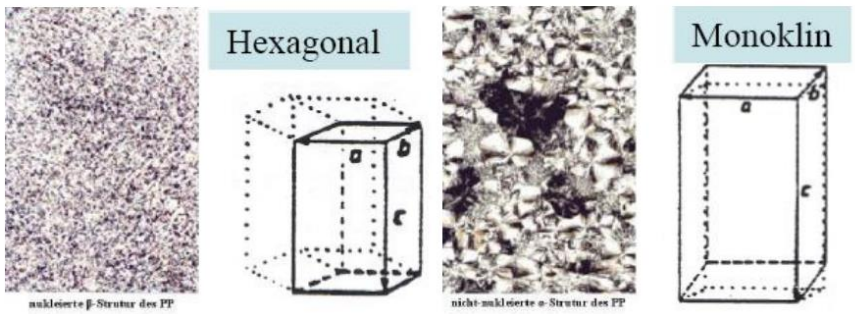


Figure 2: The β-nucleation results in very small crystallites of predominantly the hexagonal structure and an even crystallite size distribution (left) in comparison to the monoclinic structure of non-nucleated PP (right)

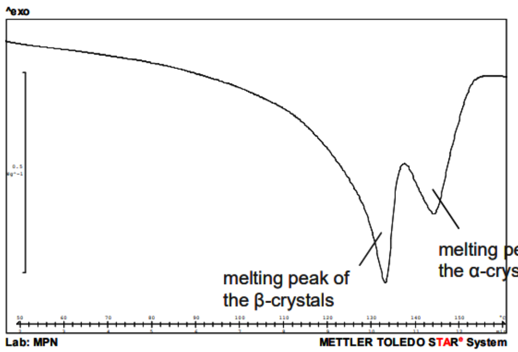


Figure 1: Typical DSC plot of the second heating curve of PP-RCT (measured on Beta-PPR RA7050)

NIRON | β-PP-RCT w/ Fiberglass

- Longer lifetime.
- Larger temperature range: **-0°F to 230°F.**
- Higher Young's modulus: **E = 325,000psi @ 23 °F.**
- Lower thermal expansion coefficient: **α = 1.94e-5 1/°F.**

For these reasons, NIRON is an excellent choice for HVAC systems.

IMPROVING THERMAL-MECHANICAL PROPERTIES

β-PP-RCT can be coextruded with fiberglass.
Adding fiberglass results in:

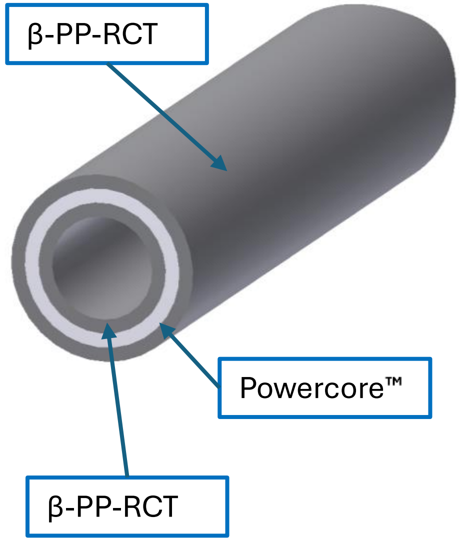
1. A reduced linear thermal expansion of the section during operating cycles, with a coefficient **α = 1.94e-5 1/°F.**
2. The stiffening of the material by increasing Young's modulus to **E = 325,000psi at 23 °F**.

A reduced expansion coefficient prevents damage caused by excessive elongation and contraction, dispelling the onset of deformation or cracks on the pipeline in **underground installations**, where friction with sediments exerts excessive stress on contractions.

Conversely, on **suspended applications**, a lower linear thermal expansion coefficient reduces the need for expansion loops and axial compensators.
Likewise, a stiffening of the pipe reduces sagging of the line and result in **fewer hangers needed to support the pipe**.

For this reason, NIRON is a better material than regular PPR piping for both underground and suspended installations.

NIRON Clima | Indoors HVAC



SDR and Pressure at cold T

- ½" - 14" SDR7.3 (up to 482 psi)
- 1" - 14" SDR9 (up to 381 psi)
- 1¼" - 20" SDR11 (up to 303 psi)
- 2" - 24" SDR17 (up to 191 psi)

NIRON FOR INDOORS & FIELD INSULATED INSTALLATIONS

NIRON Clima is a complete system offering an extensive range of pipes and fittings for cold & hot water transportation.

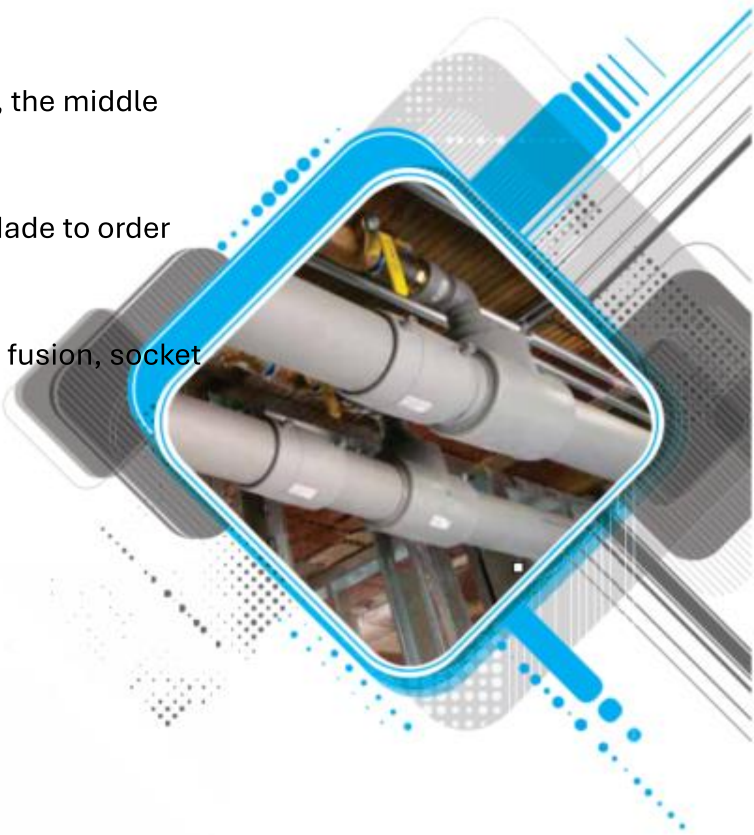
The pipe coextruded, three-layered. The inner and outer layer is pure **β-PP-RCT**, the middle layer is Nupi's ***Powercore™***, fiberglass-mixed **β-PP-RCT**.

Pipe is stocked in standard dimensional ratio (SDR = D/thk) 7.4, 9, 11, and 17. Made to order SDR 21, 26, and 33 are also available.

It comes with a complete set of injection molded and fabricated fittings for butt fusion, socket fusion and electrofusion.

Technical Advantages

- Resistance to pressure up to 482psi.
- Long service life: >1,800Y for chlorinated cold water.
- Excellent chemical ion resistance.
- Non-toxic (NSF14, NSF 51 and NSF 61 approval).
- Resistant to development of legionella colonies.
- Easy installation.
- Low pressure drop.



NIRON CoolPro | UV Resistance

SDR and Pressure at cold T

- 1¼" - 20" SDR11 (up to 303 psi)
- 2" - 24" SDR17 (up to 191 psi)

NIRON FOR OUTDOOR'S AND UV RESISTANT INSTALLATIONS

NIRON CoolPro is a complete system of **UV-resistant** pipes and fittings for cold & hot water transportation in outdoor applications.

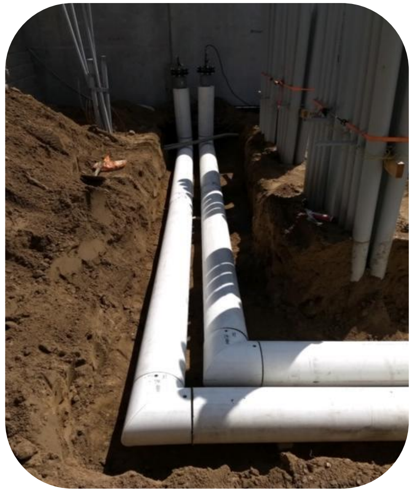
It is a coextruded, three-layer pipe. The inner is pure **β-PP-RCT**, the middle layer is Nupi's ***Powercore™***, and the outer layer is white UV-resistant **β-PP-RCT**.

UV rays have an oxidizing effect on regular PP-RCT. While this is a superficial effect with no hindrance whatsoever on the pipe's performance, it limits the ability to fusion join the pipe.

Technical Advantages

- UV resistance for outdoor applications
- Resistance to pressure up to 303psi.
- Long service life: >1,800Y for chlorinated cold water.
- Excellent chemical ion resistance.
- Non-toxic (NSF14, NSF 51 and NSF 61 approval).
- Resistant to development of legionella colonies.
- Easy installation.
- Low pressure drop.
- Low thermal expansion coefficient.

NIRON AllPro | Preinsulated Pipe



SDR and Pressure at cold T

- ½" - 12" SDR7.4 (up to 482 psi)
- 1" - 12" SDR9 (up to 381 psi)
- 1¼" - 12" SDR11 (up to 303 psi)
- 2" - 12" SDR17 (up to 191 psi)

NIRON'S PREINSULATED PIPE

NIRON AllPro is a complete system of preinsulated pipes and fittings for cold & hot water transportation in outdoor and underground applications.

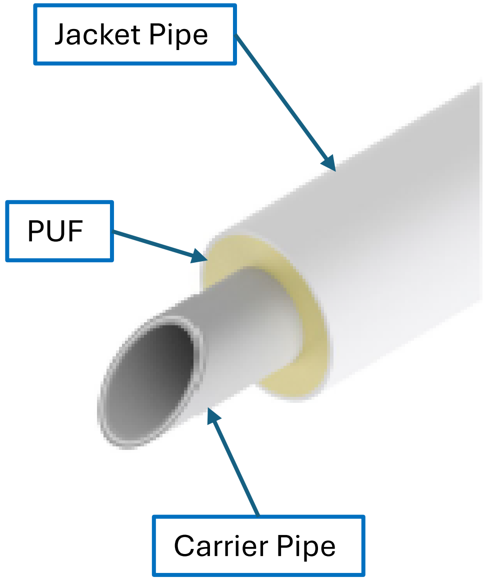
The inner carrier pipe is **β-PP-RCT NIRON Clima**, while the outer jacket pipe is UV-resistant white **β-PP-RCT**. The insulation is provided by polyurethane foam (**PUF**), resulting in an exceptionally high insulation. It comes with fully preinsulated fittings and can be joined by **electrofusion** and **simultaneous butt fusion** (both the primary and jacket pipe are fused).

It can be either installed in trench or by directional bore and is well suited for prefabrication.

Technical Advantages

- Excellent thermal insulation.
- UV resistance for outdoor applications.
- Resistance to pressure up to 303psi.
- Long service life: >1,800Y for chlorinated cold water.
- Excellent chemical ion resistance.
- Non-toxic (NSF14, NSF 51 and NSF 61 approval).
- Resistant to development of legionella colonies.
- Low pressure drop.
- Low thermal expansion coefficient.

NIRON AllPro | Preinsulated Pipe



JACKET PIPE

The polyurethane insulation layer is protected by a jacket pipe made of **UV resistant β-PP-RCT**. Pipes are available in 20’ and 40’ bars in the range DN 32 - DN315, with SDR 7,4 - 11 - 17 to meet the operating conditions of the applications.

THERMAL INSULATION (PUF)

The insulation of the primary pipe is obtained thanks to a rigid polyurethane foam compliant with standard EN 253 and free from Freon. The thermal conductivity coefficient is 0.027 W/mK at an average temperature of +50°C.

PRIMARY PIPE

The primary pipe for transporting the heat transfer fluid is **β-PP-RCT, three-layered NIRON Clima**.

NIRON | Joining Fusion Methods

MULTIPLE OPTIONS FOR DIFFERENT SITUATIONS

NIRON is a versatile and complete system of pipe and fittings that can be joined by the three most common methods for fusion welding available for thermoplastic resins.

NIRON's pipes and fittings can be be fusion joined by:

- **Socket fusion (S/F)** from ¼" to 4".
- **Butt fusion (B/F)** from 2" to 40".
- **Electrofusion (E/F)** from ½" to 24" pipe.

Together with these, NIRON pipe can be also branched through:

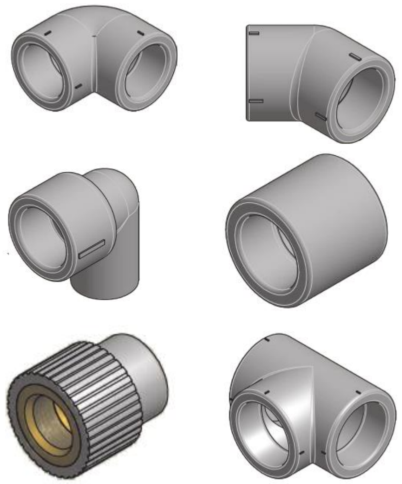
- **Instabranch®** (cold tapping socket fusion).
- **Electrolet®** (cold and hot tapping electrofusion).

NIRON AllPro furthermore joins by:

- **Simultaneous Butt Fusion (BFX2),** where both the primary and secondary pipe are butt fused, making it suited for directional boring.
- **Simultaneous Electro Fusion (EFX2),** where both the primary and secondary pipe are electro fused.

Unlike with metal welding, **all the above techniques result in the joint being a more resistant portion of the line than the pipe and fittings alone.**

NIRON | Socket Fusion



SOCKET FUSION WELDING

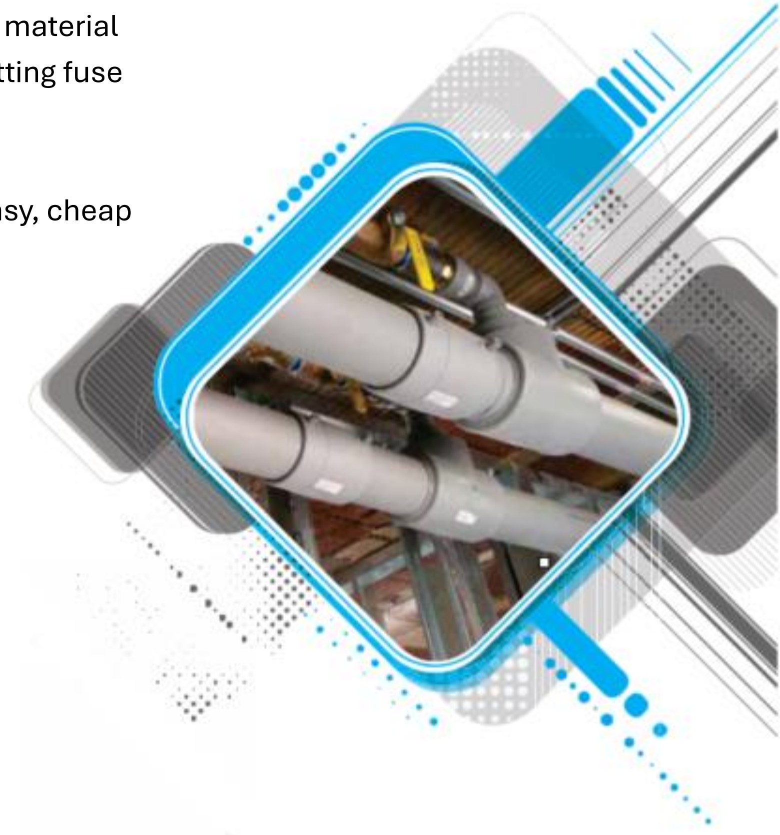
Socket fusion is a fusion joining technique applicable **from ½” to 4”**. The fitting’s “socket” is heated internally, and the pipe is simultaneously heated externally. When the material temperature is high enough, the pipe is inserted in the socket. The pipe and fitting fuse together, merging in a single element.

Instabranch welding is used for branching out of the main line. It offers an easy, cheap method for joining small diameter reducing branches into an existing pipe.

This method works best when it is performed in a bench-type or table-top. However, it can be done in the field.

Specification

- Higher pressure rating than all pipe.
- Easy to perform with minimal equipment.
- Available with full range of injection molded fittings.
- Sockets meet ASTM F2389 dimensions.
- Full range of lead-free brass and stainless-steel NPT transitions.
- Standard welding parameters according to DVS 2201-11 (2017).



NIRON | Butt Fusion

BUTT FUSION WELDING

Butt fusion is a fusion joining technique applicable **from 2” to 40”**. It is a face-to-face welding method that works by heating the scrapped face of the pipe and fittings to melting temperature and pressure joining them to merge them in a single element.

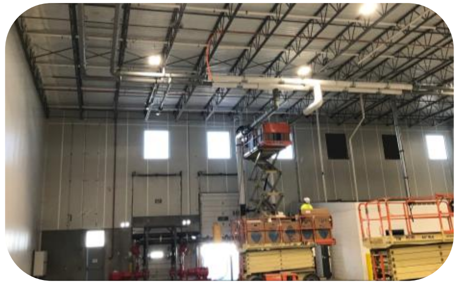
It is well suited for large installations in site (e.g., underground installations) and prefabrication.

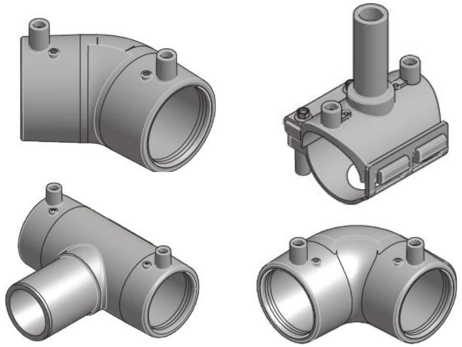
Specification

- ✅ Higher pressure rating than all pipe.
- ✅ Injection molded fittings, fabricated fittings available up to 40”.
- ✅ Welding parameters follow DVS 2207-11 (2017).
- ✅ Standard equipment can be used from McElroy, Widos & Ritmo.




NIRON | Electro Fusion





ELECTRO FUSION WELDING

Electro fusion is a fusion joining technique applicable **from ½" to 24"**. The pipe is inserted in a fitting that heats up and joins by running an electrical current through a metallic coil in the inner face of the fitting.

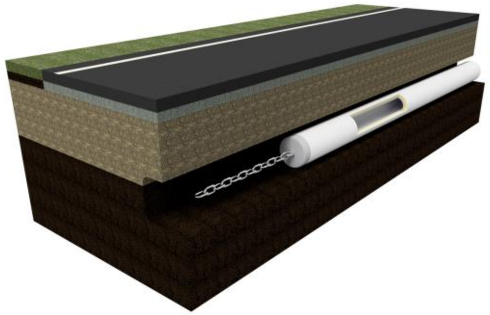
Electrolet® welding is a subset of the electrofusion fusion welding used for branching out of the main line. It allows reducing branches to be installed vertically or horizontally exactly where you need them, and straight every time.

It is a versatile system that is well suited for use together with butt fusion.
It is an excellent substitute for flanged connections between spools.

Specification

- Electrofusion is a fusion joining technique applicable from ½" to 24" pipe.
- Most fittings are injection molded from ½" to 8", couplings offered up to 24".
- Downloadable report of every weld, storage in NUPI's Welding Cloud.
- NUPI's welder controllable with Smartphone.
- Utilizes barcode scanning for ease of use.

NIRON AllPro | BFX2 & EFX2



NIRON ALLPRO SPECIFIC WELDING METHODS

NIRON AllPro has two specific welding methods in addition to the five already mentioned: these are **simultaneous butt fusion (BFX2)**, and **simultaneous electrofusion (EFX2)**.

- **BFX2** is a butt fusion welding that butt fuses both the primary and the jacket pipe, creating a seal-tight joint that effectively makes AllPro a double-wall piping system.* This method of welding can be done with the same welding units as standard butt fusion and allows for directional boring.

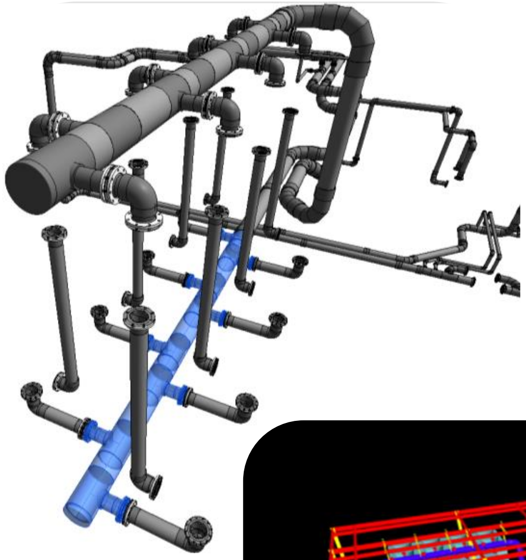
- **EFX2** is an electro fusion welding that fuses both he primary and the jacket pipe, creating a seal-tight joint that effectively makes AllPro a double-wall piping system.* This method of welding can be done with the same welding units as standard electrofusion.

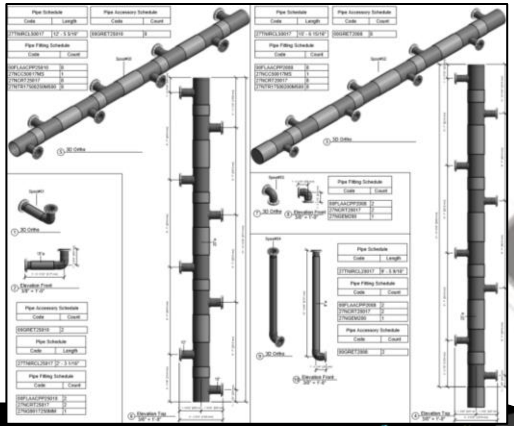
*Pressure rating of the jacket pipe however is still lower than the primary pipe.

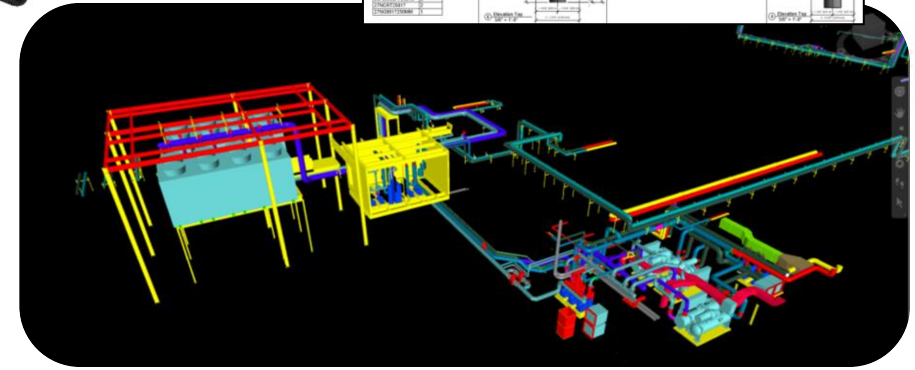
NIRON | Prefabrication

CUSTOMIZED MANIFOLDS FOR PROJECT

All NIRON product lines are well suited for prefabrication at shop, especially by means of butt fusion. **NUPI** designs and fabricates spools in its **Early Branch, SC** plant. Most of our distribution network is also equipped for prefabrication.







NUPI | BIM Library

AMERICAS

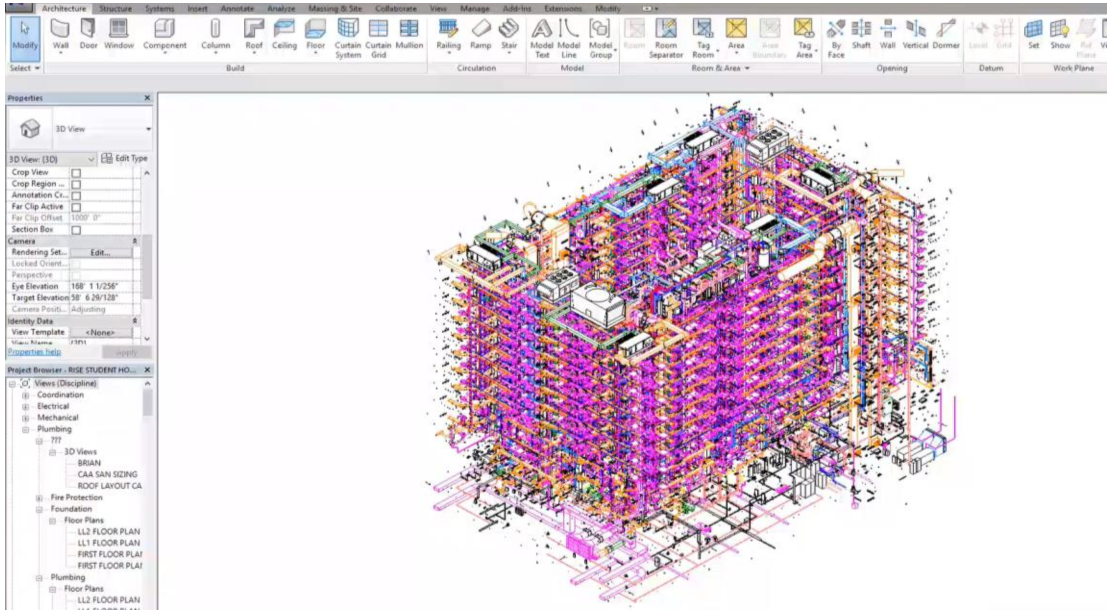
NIRON®

SMARTFLEX™

NUPI BIM LIBRARY FOR FREE DOWNLOAD

NUPI provides complete BIM libraries that benefit committee, designers and suppliers.

- Suitable for different project type and applications regardless of size or implementation phase.
- Improve design efficiency with higher visibility, flexibility and coordination.
- Improve space usage, reduce construction and installation errors.
- Improve coordination of the supply chain.
- Integrate project information for consultation for construction phase and maintenance phase.



NUPI | Thirty-Year Warranty

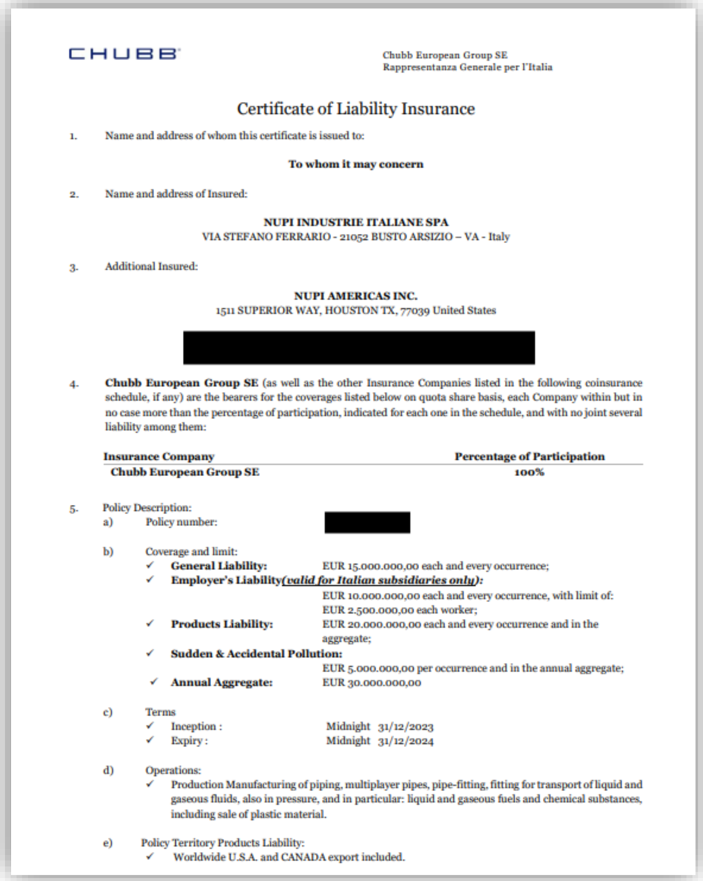
NUPI'S UNMATCHED WARRANTY

NUPI Americas offers on all products:

- 30-year product warranty.
- Backing by high limit liability insurance.

This is the longest warranty available in the market. **NUPI Americas** provides proper training and support for installation or the system.

*"**NUPI Americas** warrants that products sold by it which are included in its **NIRON** Piping System shall be of good materials and workmanship and free from functional defects for a period of thirty (30) years from the date of sale."*



CHUBB

Chubb European Group SE
Rappresentanza Generale per l'Italia

Certificate of Liability Insurance

1. Name and address of whom this certificate is issued to:

To whom it may concern

2. Name and address of Insured:

NUPI INDUSTRIE ITALIANE SPA
VIA STEFANO FERRARIO - 21052 BUSTO ARSIZIO – VA - Italy

3. Additional Insured:

NUPI AMERICAS INC.
1511 SUPERIOR WAY, HOUSTON TX, 77039 United States

[redacted]

4. **Chubb European Group SE** (as well as the other Insurance Companies listed in the following coinsurance schedule, if any) are the bearers for the coverages listed below on quota share basis, each Company within but in no case more than the percentage of participation, indicated for each one in the schedule, and with no joint several liability among them:

Insurance Company	Percentage of Participation
Chubb European Group SE	**100%**

5. Policy Description:

a) Policy number: [redacted]

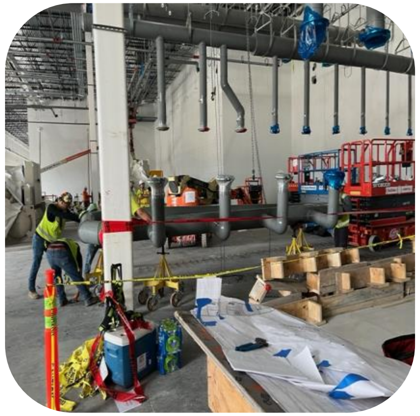
b) Coverage and limit:
- ✓ **General Liability:** EUR 15.000.000,00 each and every occurrence;
- ✓ **Employer's Liability*(valid for Italian subsidiaries only)*:** EUR 10.000.000,00 each and every occurrence, with limit of: EUR 2.500.000,00 each worker;
- ✓ **Products Liability:** EUR 20.000.000,00 each and every occurrence and in the aggregate;
- ✓ **Sudden & Accidental Pollution:** EUR 5.000.000,00 per occurrence and in the annual aggregate;
- ✓ **Annual Aggregate:** EUR 30.000.000,00

c) Terms
- ✓ Inception : Midnight 31/12/2023
- ✓ Expiry : Midnight 31/12/2024

d) Operations:
- ✓ Production Manufacturing of piping, multiplayer pipes, pipe-fitting, fitting for transport of liquid and gaseous fluids, also in pressure, and in particular: liquid and gaseous fuels and chemical substances, including sale of plastic material.

e) Policy Territory Products Liability:
- ✓ Worldwide U.S.A. and CANADA export included.

NUPI | Job References



NUPI | Job References

NUPI AMERICAS

SMARTFLEX for DATA CENTERS

ENERGY SUPPLY SYSTEMS

SMARTFLEX™

SMARTFLEX | NUPI's Fuel Pipe

SMARTFLEX™

NUPI'S PIPE FOR FUEL TRANSPORTATION FOR EMERGENCY POWER GENERATORS

SMARTFLEX is NUPI's state-of-the-art HDPE complete system of **single wall** and **double wall** piping and fittings for fuel transportation.

This cutting-edge product is the result of over 40 years of experience in pipe manufacturing for the safe transportation of hydrocarbons and natural gas in oil fields, distribution, and fuel stations.

SMARTFLEX has been successfully installed in fuel stations in 142 countries, including the United States. In data centers, it is suitable for power supply units to ensure uninterrupted system running.

TECHNICAL ADVANTAGES

- Electrofusion fittings.
- Excellent chemical resistance to fuel spills and vapors.
- Excellent resistance to high water table pressure.
- Excellent resistance to ground movement.
- UL HDPE sumps with industry leading minimum wall thickness.
- Venting pipe.
- Conduit pipe (SMART Conduit).

SMARTFLEX | Material

SMARTFLEX

IP

Certified

SMARTFLEX'S STRONGEST ASSET

SMARTFLEX pipe and fittings base material is **high-density polyethylene** (**HDPE**).

HDPE is an extremely durable material and is suitable for the typical harsh conditions of underground fuel transportation.

Excellent protection from fuel percolation is achieved by multiple layers of proprietary liner impermeable to hydrocarbons.

This combination of materials together with a double wall structure makes **SMARTFLEX** compliant with environmental and safety regulations for fuel transportation.

TECHNICAL ADVANTAGES

- UV-8 stabilizer enriched.
- Electrofusion fittings.
- UL HDPE sumps.
- Excellent chemical resistance to fuel spills and vapors.
- Excellent resistance to high water table pressure.
- Excellent resistance to ground movement.
- Industry leading minimum wall thickness.

SMARTFLEX | Contacts

SMARTFLEX POINTS of CONTACT

For information about SMARTFLEX, please contact:

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