



Living water
IOREX
이오렉스

The world's best Anti-fouling
water treatment system



INNOBIZ FDA



미국 NSF 대한민국 KCC 혁신제품 수도용기압인증 러시아 TRCU 한국특허 미국특허 중국특허 코트라보존인증 ISO 9001/14001 폴란드 위생인증

Water is the source of life

Clean! Healthy Life!
 Living water **IOREX**



Current Status of Water Treatment Management

- Pipe corrosion due to rust and scale
- Discontinuance of water supply due to the maintenance of facility and piping
- Reducing the time limit of endurance of facility and piping
- Continuous increase in facility maintenance/repair
- Occurrence of red water caused by rust

Effects of IOREX Installation

- Prevention and removal of rust and scale
- Sterilization of bacteria contained in water
- Increased efficiency of piping/facility equipment
- Reduction management/maintenance cost of piping/facility equipment
- Extension of lifespan of piping/facility equipment
- Growth promotion in animals and plants
- Resistance against pathogens of animals and plants

Installation Instructions



Specifications

Type	Model	Pipe Diameter		Length		Outside Diameter		Weight		Effective Range	
		inch	mm	inch	mm	inch	mm	pound	kg	yd	m
SCREW	IOR-APT	1/2	15	8.3	190	2.5	60	5.5	2	196	180
	IOR-15	1/2	15	17	410	3.5	90	11.4	5	251	230
	IOR-20	3/4	20	18.5	410	4	105	17.8	6.5	317	290
	IOR-25	1	25	20.5	520	4.5	120	19.8	10	382	350
FLANGE	IOR-32	1 1/4	32	21.5	580	5	140	30.8	16	514	470
	IOR-40	1 1/2	40	21.5	580	5	140	48.5	21	634	580
	IOR-50	2	50	23.5	580	6	170	66.1	33	929	850
	IOR-65	2 1/2	65	27.5	640	6.5	210	99.2	45	1,050	960
	IOR-80	3	80	27.5	700	7	220	132.2	60	1,257	1,150
	IOR-100	4	100	29.5	750	7	265	198.4	90	1,476	1,350
	IOR-125	5	125	29.5	750	8	320	253.5	117	1,695	1,550
	IOR-150	6	150	29.5	750	13	320	341.7	150	1,914	1,750
	IOR-200	8	200	30	775	16.5	405	496	230	2,296	2,100
	IOR-250	10	250	30	775	18	455	639.3	290	2,570	2,350
	IOR-300	12	300	30.5	775	19	475	661.3	307	2,788	2,550
	IOR-350	14	350	31.5	800	20	520	771.6	327	3,280	3,000
	IOR-400	16	400	31.5	800	24	600	837.7	370	3,609	3,300
	IOR-500	20	500	31	800	28	711	1,565.2	710	4,374	4,000
	IOR-600	24	600	33	850	33	850	2,204.6	1,000	4,374	4,000

Structure • Principle

The Best Brand of Scale and Rust Control Apparatus IOREX

IOREX is a water treatment system that can prevent or remove rust and scale in pipelines by simply installing it in any water pipe, for clean and efficient maintenance. Different from the conventional systems which may be hazardous to the environment and/or require complicated chemical process, IOREX is an economical and environment-friendly water treatment system that uses the flow of water as its source of power.

IOREX Process

When water passes through IOREX, it generates static electricity due to friction on the surface. When the electric charge of the static electricity level becomes high, water molecules are decomposed by discharging the electrons to the farthest orbit. Therefore, a strong electric field is formed by the motion of the electrons, and water becomes electrically-charged when it passes through the static electric field.



• Micro Bubble

- Clusters of 30~300
- Forms clusters of 5~6 water molecules
- Generates ion activated water with small zeta potential
- Improves affinity and permeability of water

• Turbulence jet

- From turbulence Jet
- Formed by collision between carbon nozzle and water
- Turbulence generated
- Entropy increased
- Generates strong static electric field

Effects on Well-being

Secures safety of water quality

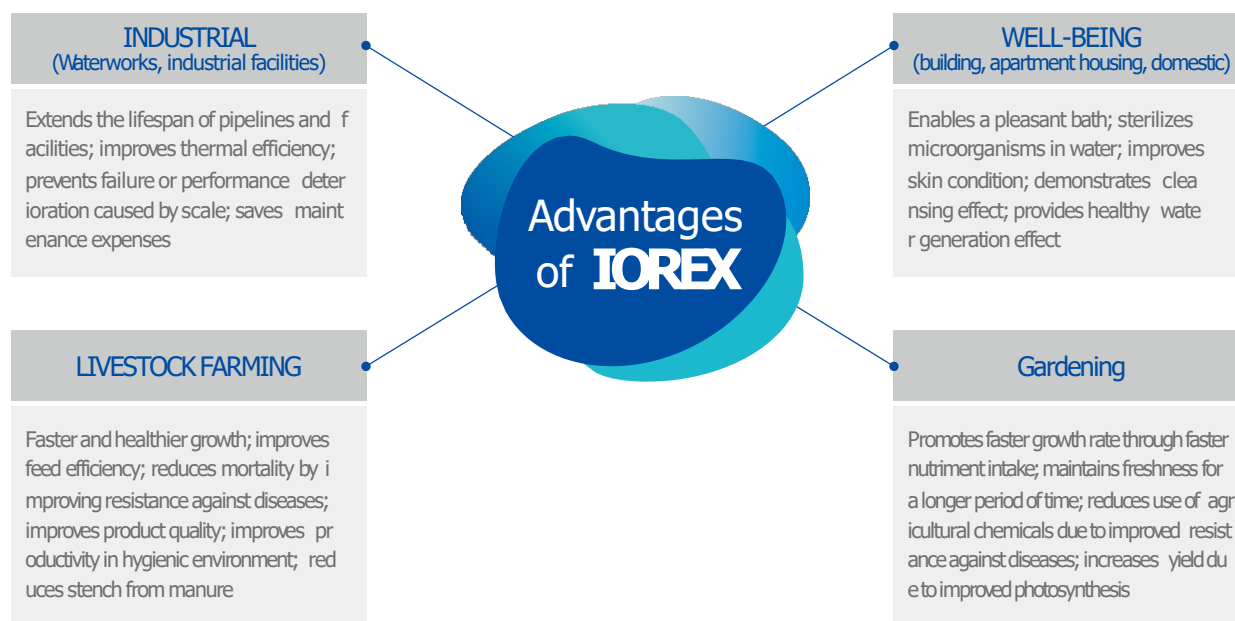
- Water Softening Function
- Sterilization Function
- Solves piping problem

Economic effect

- Removes scale, slime and rust
- Extends the pipe's lifespan
- Increases thermal efficiency

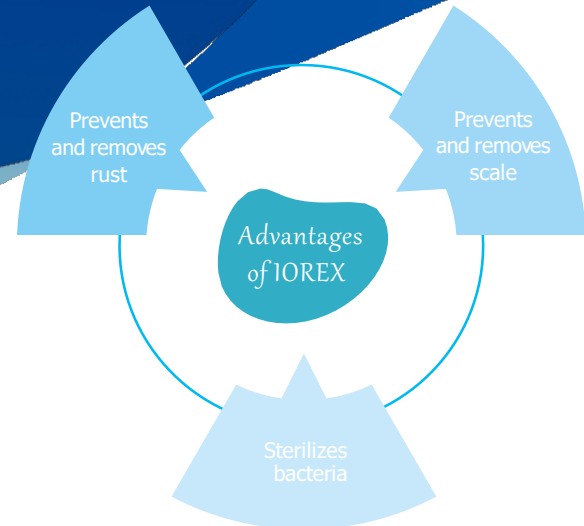
Features

CONVENIENT	Easy installation. Short line shutdown of traffic control
SAFETY	Biocompatible material(carbon) based-maximum safety
ECO-FRIENDLY	No power, no chemical, no maintenance required
ECONOMICAL	Semi-permanent service
PRACTICAL	No pressure drop. Suitable for a wide range of water quality



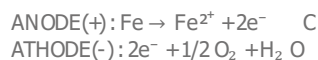
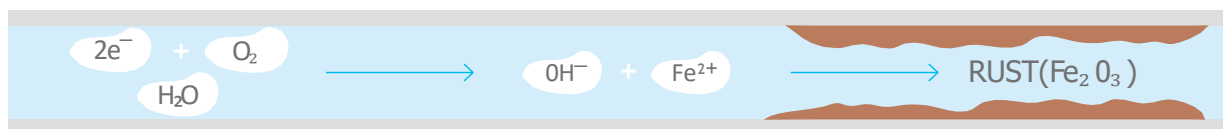
Structure • Principle

Formation of Rust and Scale, and Operation Principle of IOREX



Formation of Rust

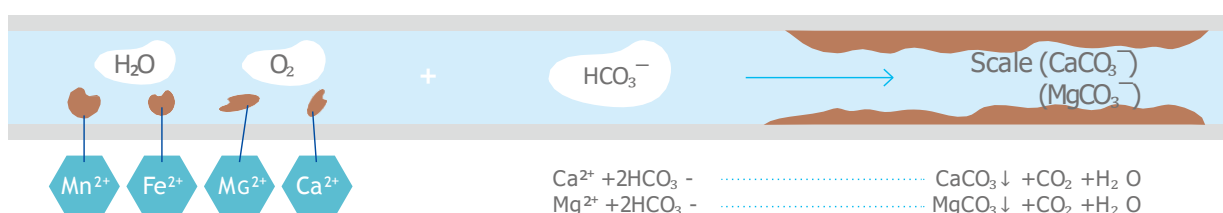
- To lose an electron is called oxidation, and iron rusting is called oxidation reaction.
- Electrons coming out of iron when iron loses electrons undergo oxidation, and water combines with oxygen in a pipe.
- Fe^{2+} ion formed on the surface of iron creates Fe_2O_3 combining with 2OH^- .



Formation of Scale

- Metallic components(acicular structure) such as iron, calcium, manganese and magnesium and non-metallic components such as nitrogen and salts dissolve in water.
- Scale is formed when the cation of metals and the anion of nonmetals combine and crystallize due to the effect of temperature, etc., and these attach inside the pipes and other materials.
- Rust or fur is formed first, and then scale is formed on it.

Pipe



Prevention and Removal of Rust

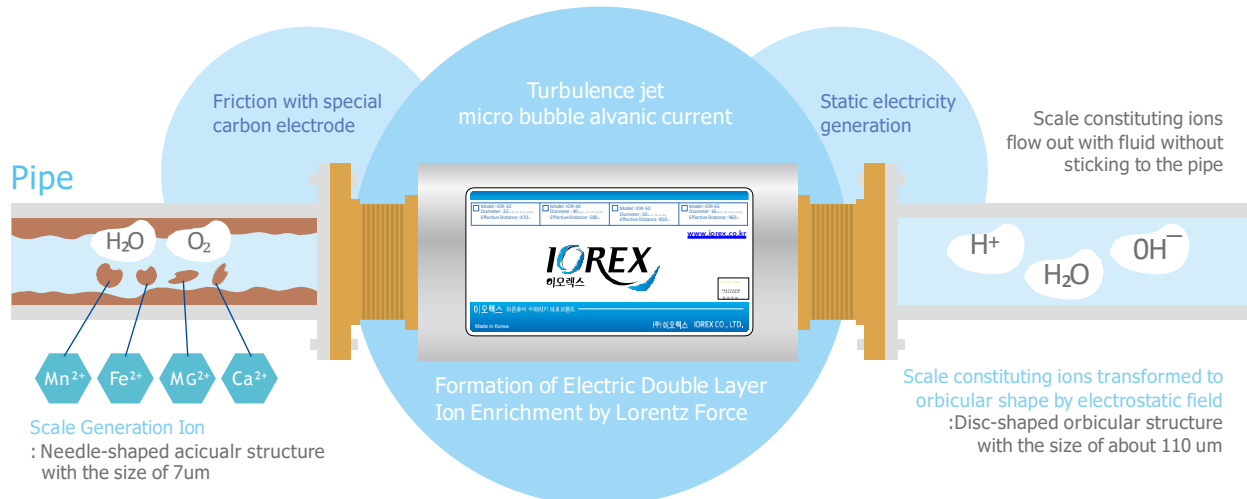
- Generated electrons prevent the occurrence of rust through reaction with red rust.
- It takes about 1 - 4 weeks to prevent the formation of rust. Rust comes out when it is washed away and flows by the existing fluid pressure. The formation of rust stops afterwards.
- Subsequently, through the continuous help of electrons, it is maintained as iron (Fe) that is no longer ionized, and the existing rust slowly dissipates.

Pipe(Fe) :



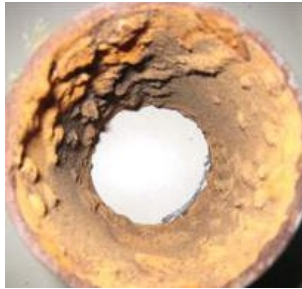
Prevention and Removal of Scale

- Scale particles of the acicular structure change to the disc-shaped orbicular structure by chemical reactions and static electricity, as they attach to scale configuration ions receiving static electricity when IOREX passes.
- Ionized H⁺ and OH⁻ ions further suppress the combination/formation with scale configuration ions.
- Scale structure gradually breaks down, after the scale changes to soft form through the separation of the combination of cation(+ ion) and anion(- ion) as the relaxation action in the structure is accelerated when needle shape becomes orbicular.



VISION COMPARISON

KOREA - Seoul Hana Building - 2007



Before installation (August 18, 2007)



1st inspection (January 29, 2008)



2nd inspection (July 25, 2008)



3rd inspection (May 6, 2009)

MALAYSIA - ALCOM BHD - 2008



The pipe is almost clogged with scale.



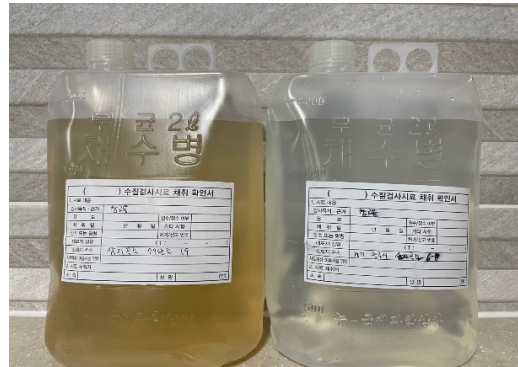
40day after: Scale is notably reduced.



USA – POCOMOKE CITY - 2018



KOREA - WATER DEPARTEMENT - 2022



REFERENCE - KOREA

Saemangeum Industrial Complex
Development Project _ IOR-600A



Jeonju Mansung development area
(Judicial officer town)_ IOR-400A



Jindo Seokkyo Elementary School
_ IOR-50A



Seoul National University of
Education _ IOR-100A



Chungbuk JeungPyeong
Swimming Pool _ IOR-80A



Sejong Prime Minister's Office
_ IOR-65A, 150A



Daejeon Korail
_ IOR-50A, 65A, 100A



Kindergarten
_ IOR-40A



Gyeongsangbuk-do Technical Center
for Agricultural Cooperative _ IOR-80A



Gyeonggi-do pyeongtaek-si Leechoong
Cultural and sports centre _ IOR-80A



Jeonbuk Small and medium Bus
iness Administration _ IOR-65A



Ulsan Economic Promotion Agency
_ IOR-100A



REFERENCE - UNITED STATES OF AMERICA

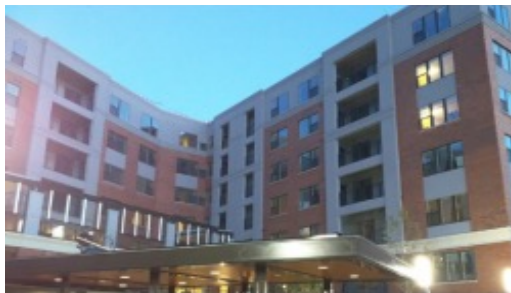
Harborside Hotel, IOR-100N



Faust Hotel _ IOR-80N



Brightview Senior Living _ IOR-100N



Aloft Hotel _ IOR-80N



Symphony house _ IOR-100N



Windsor Suites Hotel _ IOR-80N



Pocomoke City, Maryland: 47ABC NEWS – IOREX solve the rust problem of 40 years _ IOR-150N



REFERENCE - GLOBAL

Ho-Chi-Minh Mausoleum [Vietnam] _ IOR-80A×7



Hai Phong [Vietnam]

_ IOR-150A



Sawaco [Vietnam]

_ IOR-150A



Smit Chemistry plant [China]

_ IOR-40A



Alliance holdings, co. [Russia]

_ IOR-25A, 50A



DV-ALYANSSTROI, LLC [Russia]

_ IOR-300A



Good Morning Enterprises Inc [Canada]

_ IOR-20A, 25A, 50A, 65A



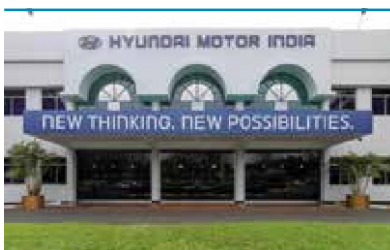
BIOGENIC GROUP IND ECOM LTDA [Brazil]

_ IOR-20A, 25A, 50A



HYUNDAI MOTORS (India)

_ IOR-100A



Water World Science [Canada]

_ IOR-20A, 25A

Magma BioTechnology Co., Ltd [China]

_ IOR-15A, 20A, 25A, 40A, 50A, 200A

Satang Jaya [Malaysia]

_ IOR-APT

Moscow City [Russia]

_ IOR-50A, 80A