

INOAC
AIPOLY
BROADPIPE



PT. INOAC POLYTECHNO INDONESIA

INOAC Profile



Capital Structure

Inoac Group	80%
PT. IRC INOAC INDONESIA	20%

Employees

1767 Persons (Sep./2014)
23 PESONS (JAPANESE)

Capital

USD 20 Million

Factory Space

	Karawang	Tangerang
• Ground :	120,000sqm	80,000sqm
• Building :	22,110sqm	50,000sqm

History



INOAC
PT. INOAC POLYTECHNO INDONESIA

1926

Establish of INOUE Rubber Co.Ltd., production bicycle tires & tubes

1938

Expanding industrial rubber products

1954

Establish of MTP Kasel Co.Ltd, first production polyurethane foam in Japan

1959

Production polyurethane mattress & automobile parts

1973

Inoac first time expand business in Indonesia, join PT. Vita Foam (Inoac Indonesia (VFI), first production & sale polyurethane foam

1977

Inoac expand to PT. Inoue Rubber Indonesia (IRI), first production & sale rubber product.

1980

Establish INOUE MTF Co.Ltd., as a merging industrial rubber, foam & plastic business, first production construction material

1982

Production office automation material

1988

Establish of INOAC Corporation, renewed corporate identity and company name

1990

Establish PT. Inoac Multi Indonesia (IMI), as Indonesia follow changing in line with Inoac corporation global change

1996

Establish PT. IRC Inoac Indonesia (PTI), along expand business in Indonesia, company processed merger between IRI & IMI

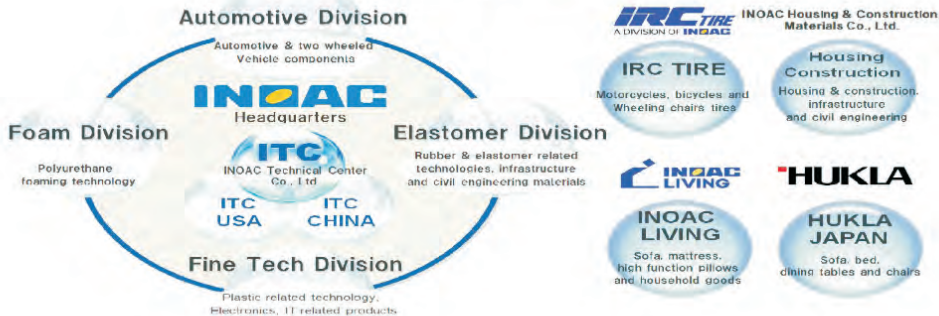
2013

Establish PT. Inoac Polytechno Indonesia (PI), the new company. PTI focus on rubber basic production, & PI focus on polyurethane basic production

Business Outline



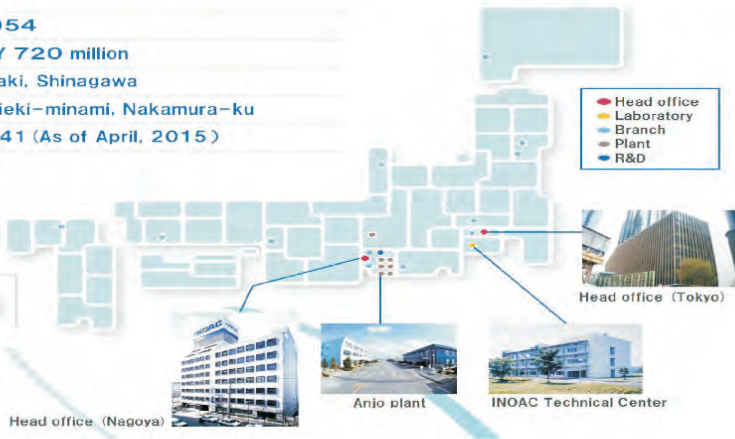
INOAC offers various products including components for automotive, motorcycle, IT sectors such as personal computers, mobile phones, hoses sectors, rubber products, and cosmetics such as bottles and foundation puffs, by manipulating with our technology to realize more comfortable and convenient life.



Corporate Profile INOAC (JAPAN)



1954
JPY 720 million
Osaki, Shinagawa
Meieki-minami, Nakamura-ku
1741 (As of April, 2015)



INOAC Group In Asia



Solution for Non

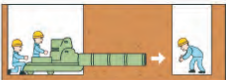
HDPE PIPE



Electric Fusion



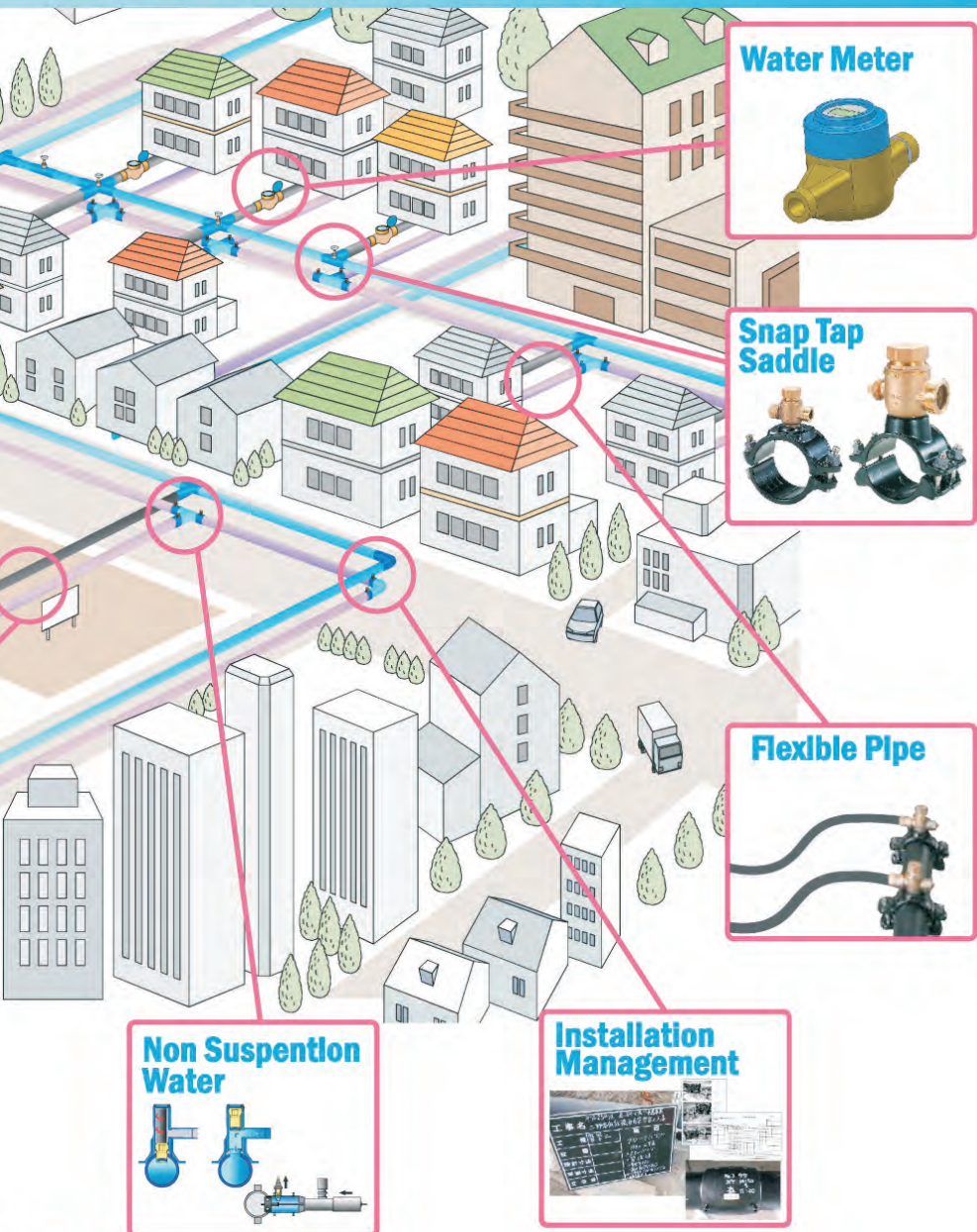
**Pipe
Jacking
Method**



**Solvent
Penetrating
Prevention**



Revenue Water



Non Revenue Water



■ How to improve the NRW (Experience of Japan)

⇒ Maintain Waterworks pipe Area

1) Changed to HDPE pipe

2) Replaced each Accessories to Reliable products

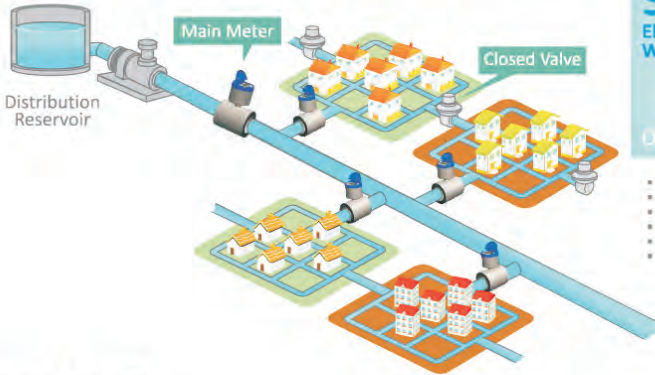
Fittings	⇒	Electro Fusion Fittings
Snap tap Saddle	⇒	Two-in-One Model
Water Meter	⇒	Long life, High Accuracy

3) Establish and Expand Distribution Meter Area (DMA)

Memilih Peralatan yang bisa diandalkan

- Water Meter — Sistem pengukuran elektromagnetik = Akurasi tinggi (tingkat kesalahan hanya dalam 2%)
- Valves — Sistem penyambungan anti bocor Anti-slip

Contoh untuk memperbaiki NRW



Aditi K. Kari Deski has over 20 years experience of delivery process in water management field in india

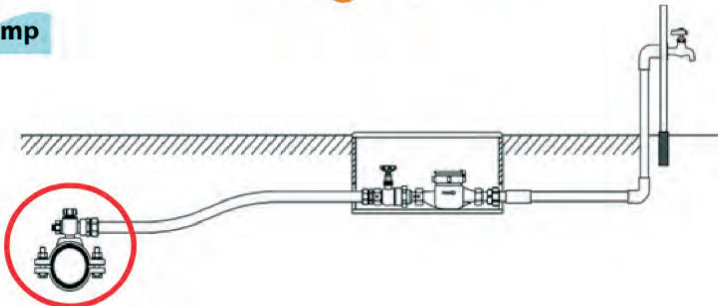
SU Electromagnetic Water Meter

Operation Manual

- Accurate Measurement
- Easy-To-Read
- Negligible Pressure Loss
- Simple Installation
- Easy Access to AMR Devices
- Zero Maintenance

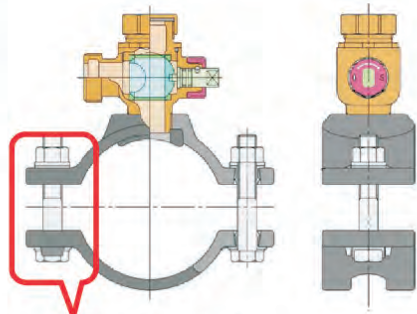


Saddle Clamp



Snap Tap Saddle yang didesign dengan sistem dua dalam satu (Penggabungan)

- Mekanisme penyambungan yang didesign secara baik
- Pilihlah tipe saddle yang cocok untuk menghindari tekanan yang berlebihan ke dalam pipa



Designed better fit to
Main pipe

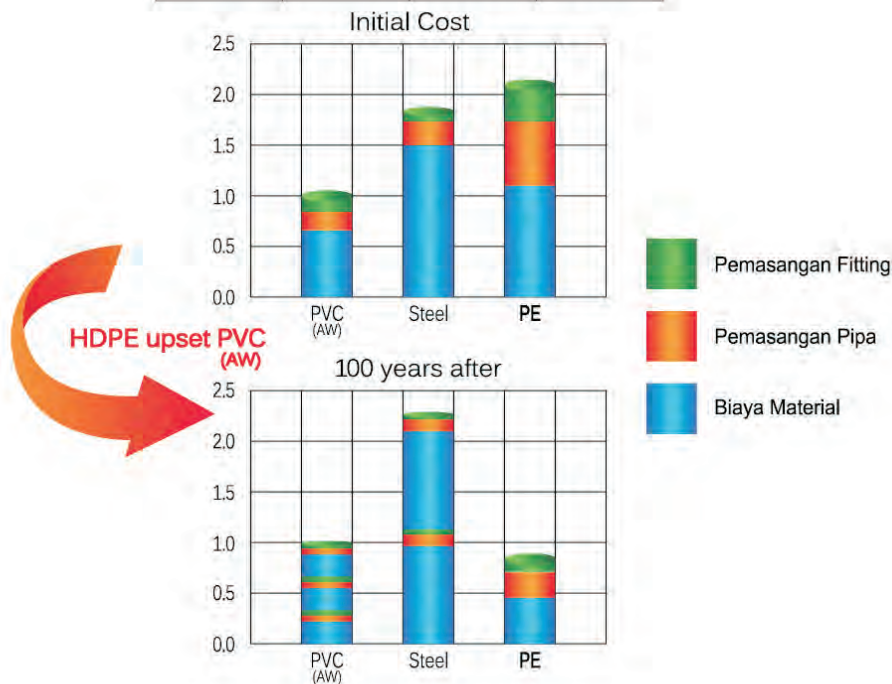
Kenapa harus pipa PE100?

Aipoly Broadpipe menggunakan bahan High Density Polyethelene **bersertifikasi ISO 9080**. Material ini memiliki kekuatan tekanan hydrostatic jangka panjang dengan level paling tinggi di dunia. PE100 adalah bahan Polyethelene yang tahan akan tekanan 10MPa atau bahkan lebih selama periode lebih dari 50 tahun dalam suhu 20c tanpa membuat pipa pecah dibuktikan dengan melalui Tekanan hydrostatic dalam periode waktu yang lama.

Subject	HDPE	PVC (AW)	Pipa Besi	Akibat
Flexibility	✓	X	X	Perubahan bentuk
	Lentur	Kaku	Sangat Keras	
Durability	✓	X	△	Mengurangi life cycle cost
	Tidak ada Noda	Retak	Karat	
Wokability	✓	✓	X	Menghemat waktu konstruksi
	Ringan	Ringan	Berat	
Weatherability	✓	X	△	Menghemat biaya konstruksi
	Tidak ada Masalah	Membusuk	Karat	
Joint method	✓	X	△	Andalan untuk kebocoran
	Fusion	Lem	Welding atau Drat	

◆ Product Life time

Pipa	HDPE	PVC(AW)	Besi
Life time	100 tahun	30 tahun	40 tahun



Single-layered Pipe with Blue stripe

Syarat penggunaan

Tekanan maksimum yang diperbolehkan

(dalam temperature 20c) :

SDR 11, 1.6 MPa

Jarak temperature 0-50c

SDR 13.6, 1.25 MPa

SDR 17, 1.0 MPa

PE100										
Outer Diameter	SDR11		SDR13.6		SDR17		SDR21		Length(m)	
	Tickness	weight	Tickness	weight	Tickness	weight	Tickness	weight	Straight Pipe	Coil
	mm	g/m	mm	g/m	mm	g/m	mm	g/m		
D20	2.0	0.12	1.5	0.09	1.2	0.08			6	100
D25	2.3	0.17	2.0	0.15	1.5	0.12				
D32	3.0	0.28	2.4	0.23	2	0.19				
D40	3.7	0.43	3.0	0.36	2.4	0.29				
D50	4.6	0.67	3.7	0.55	3	0.46				
D63	5.8	1.06	4.7	0.88	3.8	0.72				
D75	6.8	1.48	5.6	1.24	4.5	1.02	3.6	0.8		
D90	8.2	2.14	6.7	1.78	5.4	1.47	4.3	1.3		
D110	10.0	3.17	8.1	2.62	6.6	2.18	5.3	1.8		
D125	11.4	4.12	9.2	3.40	7.4	2.78	6	2.3		
D140	12.7	5.30	10.3	4.26	8.3	3.49	6.7	2.9		
D160	14.6	6.76	11.8	5.57	9.5	4.57	7.7	3.7		
D180	16.4	8.51	13.3	7.05	10.7	5.77	8.6	4.7		
D200	18.2	10.50	14.7	8.65	11.9	6.85	9.6	5.8		
D225	20.5	13.29	16.6	10.98	13.4	9.02	10.8	7.4		
D250	22.7	16.34	18.4	13.53	14.8	11.06	11.9	9		
D280	25.4	20.49	20.6	16.95	16.6	13.89	13.4	11.4		
D315	28.6	25.94	23.2	20.57	18.7	17.59	15	14.3		
D355	32.2	32.93	26.1	27.70	21.1	22.39	16.9	18.2		
D400	36.3	41.80	29.4	34.54	23.7	28.30	19.1	23.2		
D450	40.9	52.90	33.1	43.80	26.7	35.90	21.5	29.3		
D500	45.4	65.30	36.8	54.00	29.7	44.30	23.9	36.1		
D560	50.8	81.80	41.2	67.80	33.2	55.50	26.7	45.2		
D630	57.2	103.70	46.3	85.60	37.4	70.30	30	57.1		
D710	64.5	131.90	52.2	109.00	42.1	89.40	33.9	72.8		
D800	72.6	167.30	58.8	138.20	47.4	113.30	38.1	92.3		

Fitur

Tahan Gempa Bumi

Pipa ini mempunya kelenturan yang sangat baik dan dapat lentur seiring dengan pergerakan tanah dan gempa bumi.

Mudah dalam pengerjaan

Polyethylene memiliki beban berat yang ringan dan sangat lentur, mudah untuk dibengkokan tanpa peralatan khusus

Tahan Lama

Ketahanan jangka panjang dalam penggunaan dari Polyethylene (PE100)

Tahan terhadap tekanan

Sistem penyambungan EF dan Butt welding memastikan penyambungan yang sangat merekat yang baik untuk menahan air dan udara

Tahan Karat

Bahan Polyethylene sangat stabil bahkan terhadap zat kimia dan tidak ada resiko karat yang disebabkan oleh tanah

Keamanan

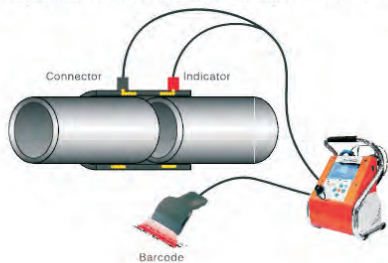
Plastik Polyethylene terbuat dari Carbon dan Hydrogen, maka Polyethylene tidak akan memproduksi gas beracun seperti Dioxin ketika dibakar. dan juga Polyethylene dapat didaur ulang

Tahan terhadap Cuaca

Polyethylene mempunyai ketahanan terhadap cuaca yang sangat baik yang dapat digunakan sebagai pipa luar ruangan yang terbuka

EF Fittings

- ▶ Spesifikasi produk bisa berubah tanpa ada pemberitahuan terlebih dahulu
- ▶ Nomor produksi berbeda seiring dengan produk itu sendiri



EF Sockets



EF Reducers



EF Elbows 45°



EF Tees



EF Reducer Tees



EF Elbows 90°



+



Easy maintenance after EF treatment due to its rotating mechanism.

Male Thread Adapters



Butt Fusion Fittings (Molded)

▶ Product specifications are subject to change without notice

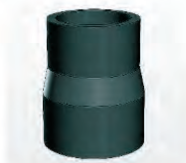
Molded Tees



Flange Adapters



Molded Reducers

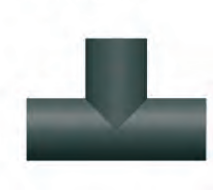


Molded Elbows 90°



Butt Fusion Fittings (Segmented)

Segment Tee



Segment Cross



Segment Y Tee



Segment Elbows 11°



Segment Elbows 22°



Segment Elbows 45°



Segment Elbows 60°



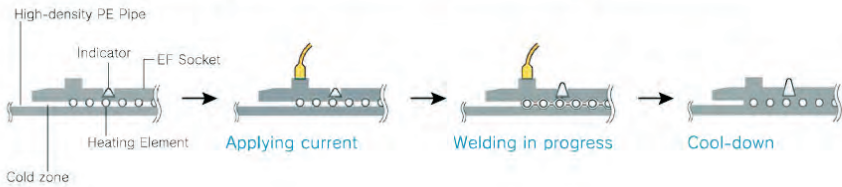
Segment Elbows 90°



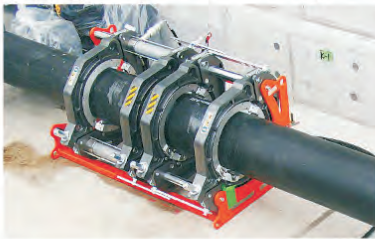
EF Welding (Electro-fusion Welding)



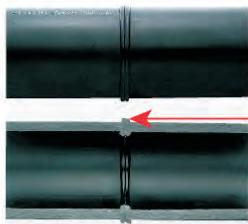
EF welding is a method of connecting pipes and fittings by melting the plastic with electricity, which provides a stable connection with excellent sealability.



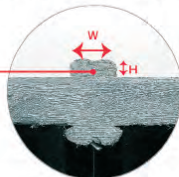
Butt Welding



Butt welding is a method of connecting pipes by heating up the two ends of PE pipes then joining them under a specific pressure.



To measure the size of the bead (W/H)



Aipoly Broadpipe Technical Data

Physical properties of PE 100

Tests Item	Test Method	Unit	Standard value	Tests Item	Unit	Standard value		
Physical properties	Density	ISO 1183	kg/m ³	942~953	Thermal and electrical properties	Linear expansion coefficient ※2	10 ⁻⁵ /°C	11~13
	Water absorption	ISO 62	%	≤0.03		Specific heat capacity	kJ/kg · K	1.9~2.3
	Tensile strength at yield		MPa	≥20		Heat conductivity	W/m · K	0.46~0.50
	Elongation at break	ISO 527-1	%	≥350		Melting point	°C	128~132
	Modulus of elongation		MPa	900~1100		Softening temperature (Vicat)	°C	125~127
Mechanical properties	Poisson's ratio		-	0.46		Brittleness temperature	°C	≥-70
	Bending strength	ISO 178	MPa	24~25		Flammability	-	No performance
	Flexural modulus		MPa	1000~1200		Volume resistivity	MΩ · cm	≥10 ¹⁴
	Hardness (Durometer)	ISO 868	HDD	67~68		Dielectric breakdown strength	MV/m	17.3~23.6
	Impact strength (Charpy)	ISO 179	kJ/m ²	16~18		Permittivity	-	2.30~2.35

※1 : Above are all representative values, not guaranteed values.

※2 : ASTM D696

Performance Standards for High-density Polyethylene Pipes and Joints

Tests Item	Standard value	Test Method
Tensile strength at yield	≥20.0MPa	
Elongation at break	≥350%	25mm/min
Resistance to pressure	Leak, transformation, breakage, is not permitted	2.5MPa × 2min
Destructive water pressure strength	≥4.0MPa	
Thermal stability	OIT≥20min	200°C, Oxygen
Heat elasticity	±3%	110°C, ethylene glycol × 30min
Hydrostatic Strength	Cracks are not permitted	20°C; 2.48MPa × 100hrs
		80°C; 1.10MPa × 165hrs
Resistance to Chlorine in water	There must be no foam generation	80°C; 1.00MPa × 1000hrs
		60°C, chloride concentration 2000ppm × 168hrs
Environmental Stress Cracking resistance	Cracks are not permitted	ISO4427
Appearance	Cracks are not permitted	
Weathering test	Elongation at break	≥350%
	Thermal stability	≥10min
Low-speed crack progress	Cracks are not permitted	80°C, 0.92MPa × 165hrs
Fusion miscibility	Cracks are not permitted	80°C, 1.10MPa × 165hrs

Pressure and Temperature Limits

Equation for calculating pressure and temperature limits

$$P = \frac{2 \sigma t}{D - t} \quad (\text{Naday's equation})$$

P : Pressure, MPa

t : Pipe thickness, cm

σ : Tensile circumferential stress, MPa

D : Outer pipe diameter, cm

	Unit: MPa						
SDR	20°C	25°C	30°C	35°C	40°C	45°C	50°C
11	1.60	1.49	1.39	1.28	1.18	1.07	0.97
13.6	1.25	1.16	1.09	1.00	0.93	0.83	0.76
17	1.00	0.93	0.87	0.80	0.74	0.67	0.61
21	0.80	0.74	0.70	0.64	0.59	0.53	0.48
Pressure reduction coefficient	1.00	0.93	0.87	0.80	0.74	0.67	0.61

※Safety factor=1.25

The management system of

PT INOAC Polytechno Indonesia

Jl. Agarindo Km 6, Desa Sukamantri, Pasar Kemis,
Tangerang, 15560, Indonesia



has been assessed and certified as meeting the requirements of

ISO 9001:2008

For the following activities

Design and manufacturing of Polyurethane (Industrial, Furniture and Consumer goods) and converting of Hato sheet for consumer products

Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2008 requirements may be obtained by consulting the organisation

This certificate is valid from 11 January 2017 until 15 September 2018 and remains valid subject to satisfactory surveillance audits.

Re certification audit due before 15 August 2018

Issue 5. Certified since 3 January 2005

Authorised by

SGS United Kingdom Ltd
Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK
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0005



SERTIFIKAT PRODUK PENGGUNAAN TANDA SNI (SPPT SNI)

Nomor : 302/S/SA/B/IX.8/2016

diberikan kepada:

PT. INOAC POLYTECHNO INDONESIA

Jl. Agarindo. Km 6, Sukamantri, Ps. Kemis, Kab. Tangerang, Banten

Berdasarkan sistem sertifikasi 5, dinyatakan bahwa perusahaan telah menerapkan Sistem Manajemen Mutu SNI ISO 9001:2008 dan mutu produknya telah memenuhi persyaratan :

- SNI 4829.2:2015 *Sistem Perpipaan Plastik - Pipa Polietilena (PE) dan Fiting untuk Sistem Penyediaan Air Minum - Bagian 2 : Pipa*

untuk alamat pabrik:

Jl. Agarindo. Km 6, Sukamantri, Ps. Kemis, Kab. Tangerang, Banten

Tempat dan tanggal terbit :
Jakarta, 02 September 2016



Disahkan oleh:

TRIYOGA I.W. NURJAYA
Kepala

Sertifikat ini berlaku sampai dengan tanggal **01 September 2020** selama perusahaan masih memenuhi ketentuan dan peraturan yang ditetapkan Balai Sertifikasi Industri dan hanya berlaku jika diperlihatkan bersamaan dengan lampirannya.





INOAC

Borderless&Endless.
Total supplier of living environments

P T. INOAC POLYTECHNO INDONESIA

《Sales Office》

PT. GOLDEN PIPING INDONESIA

Kawasan Multiguna Blok B1/5 Pakualam, Serpong Utara,

Tangerang Selatan 15325 Banten - Indonesia

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