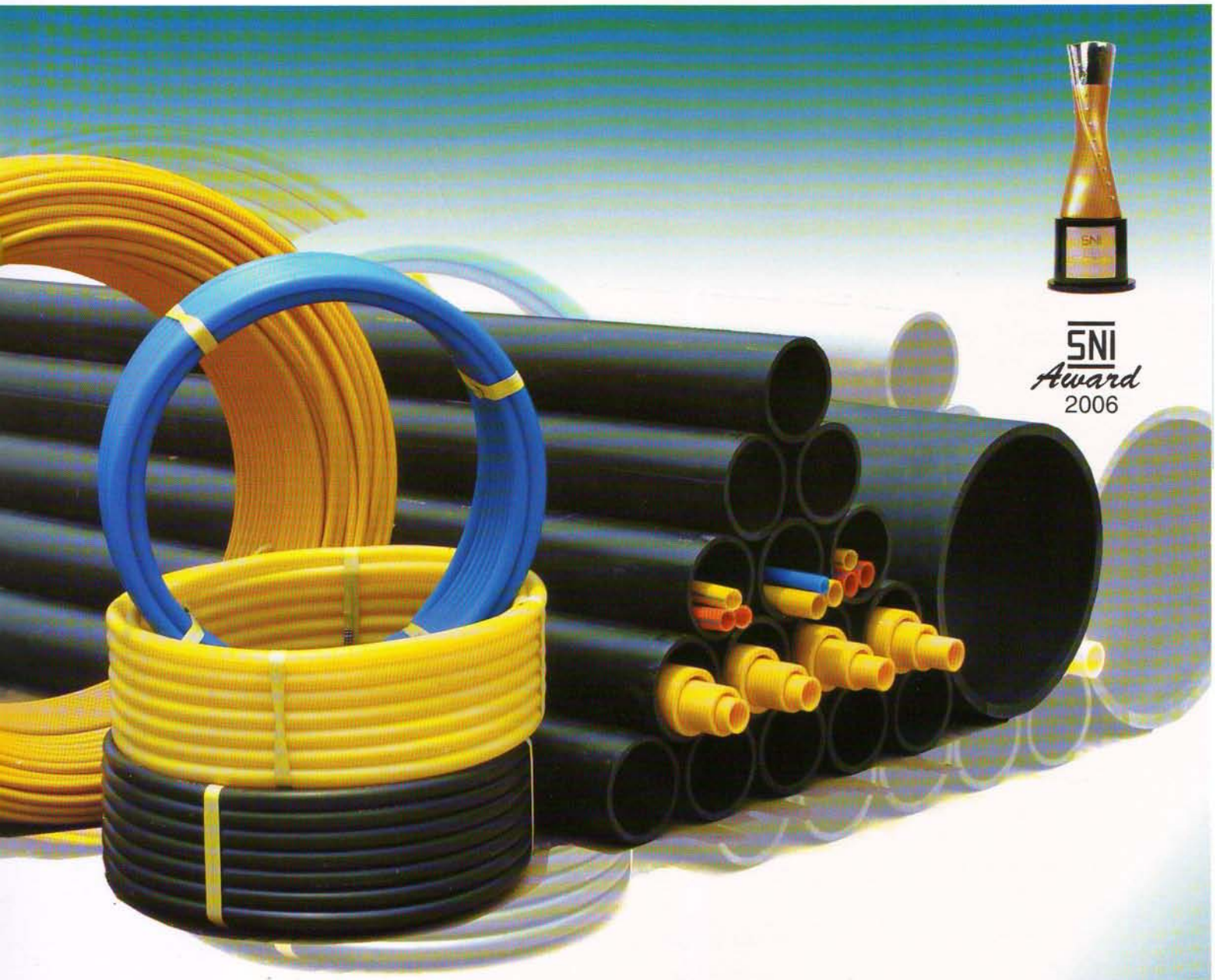
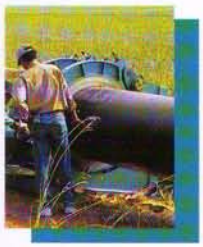
HDPE PIPE

# UNILON®

## SYMBOL OF HIGH QUALITY PIPE



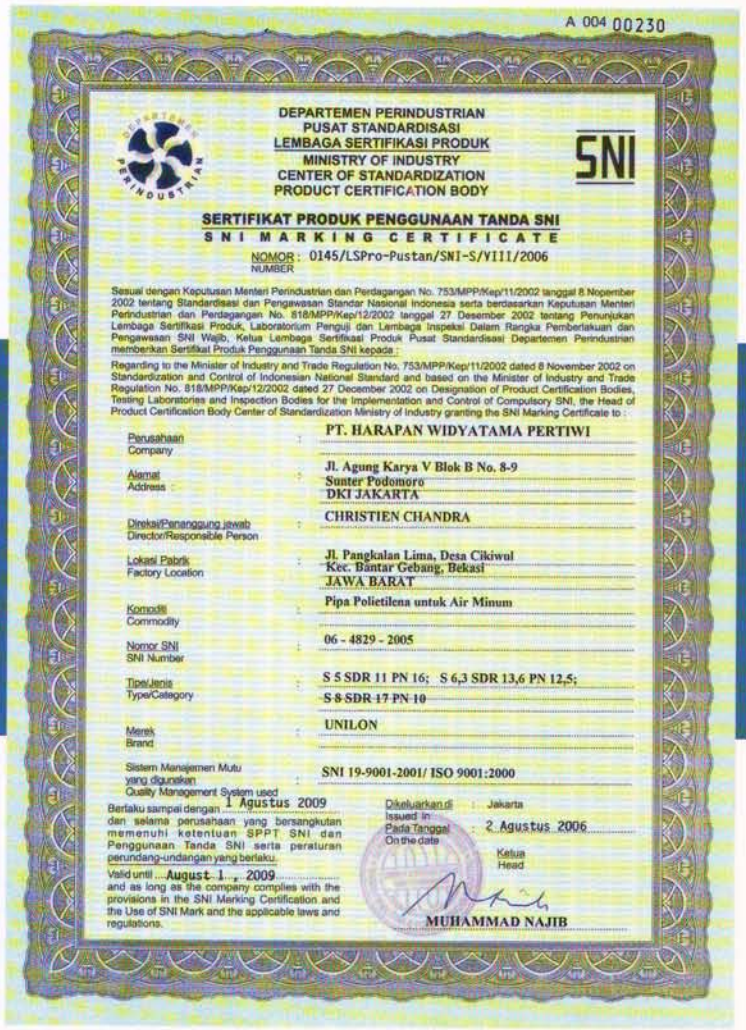



QUALITY
ENDORSED
COMPANY
LIC.No. QEC21530
ISO 9001:2000

Quality System

SAI GLOBAL

# HDPE Pipe



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DEPARTEMEN PERINDUSTRIAN
PUSAT STANDARDISASI
LEMBAGA SERTIFIKASI PRODUK
MINISTRY OF INDUSTRY
CENTER OF STANDARDIZATION
PRODUCT CERTIFICATION BODY

SNI

**SERTIFIKAT PRODUK PENGGUNAAN TANDA SNI**
**SNI MARKING CERTIFICATE**

NOMOR : 0145/LSPro-Pustan/SNI-S/VIII/2006
NUMBER

Sesuai dengan Keputusan Menteri Perindustrian dan Perdagangan No. 753/MPP/Kep/11/2002 tanggal 8 Nopember 2002 tentang Standardisasi dan Pengawasan Standar Nasional Indonesia serta berdasarkan Keputusan Menteri Perindustrian dan Perdagangan No. 818/MPP/Kep/12/2002 tanggal 27 Desember 2002 tentang Penunjukan Lembaga Sertifikasi Produk, Laboratorium Penguji dan Lembaga Inspeksi Dalam Rangka Pemberlakuan dan Pengawasan SNI Wajib, Ketua Lembaga Sertifikasi Produk Pusat Standardisasi Departemen Perindustrian memberikan Sertifikat Produk Penggunaan Tanda SNI kepada :

Regarding to the Minister of Industry and Trade Regulation No. 753/MPP/Kep/11/2002 dated 8 November 2002 on Standardization and Control of Indonesian National Standard and based on the Minister of Industry and Trade Regulation No. 818/MPP/Kep/12/2002 dated 27 December 2002 on Designation of Product Certification Bodies, Testing Laboratories and Inspection Bodies for the Implementation and Control of Compulsory SNI, the Head of Product Certification Body Center of Standardization Ministry of Industry granting the SNI Marking Certificate to :

| | |
|---|---|
| Perusahaan / Company | PT. HARAPAN WIDYATAMA PERTIWI |
| Alamat / Address | Jl. Agung Karya V Blok B No. 8-9<br>Sunter Podomoro<br>DKI JAKARTA |
| Direksi/Penanggung jawab / Director/Responsible Person | CHRISTIEN CHANDRA |
| Lokasi Pabrik / Factory Location | Jl. Pangkalan Lima, Desa Cikiwul<br>Kec. Bantar Gebang, Bekasi<br>JAWA BARAT |
| Komoditi / Commodity | Pipa Polietilena untuk Air Minum |
| Nomor SNI / SNI Number | 06 - 4829 - 2005 |
| Tipe/Jenis / Type/Category | S 5 SDR 11 PN 16; S 6,3 SDR 13,6 PN 12,5;<br>S 8 SDR 17 PN 10 |
| Merek / Brand | UNILON |
| Sistem Manajemen Mutu yang digunakan / Quality Management System used | SNI 19-9001-2001/ ISO 9001:2000 |

Berlaku sampai dengan 1 Agustus 2009 dan selama perusahaan yang bersangkutan memenuhi ketentuan SPPT SNI dan Penggunaan Tanda SNI serta peraturan perundang-undangan yang berlaku.

Valid until August 1 , 2009 and as long as the company complies with the provisions in the SNI Marking Certification and the Use of SNI Mark and the applicable laws and regulations.

Dikeluarkan di / Issued in : Jakarta
Pada Tanggal / On the date : 2 Agustus 2006

Ketua / Head

MUHAMMAD NAJIB

### General Properties & Appearance

- Material Specification: PE 100 (HDPE) & PE 80 (MDPE)
- Characteristics: Elastic, Rigid Pipe Walls, smooth surface
- Color: Black, Yellow (Gas application), Blue, Orange
- Length: 6 mtr/Length, 200 - 400 mtr/Length (OD 20 - 63 mm pipes are able to be rolled)
- Connection method: Compression Fittings, Butt-Weld method, Electrofusion method.

### Application

- Drinking Water Transport, Liquid Gas Transport, Hot Water distribution, Underground Cable Protection

### Benefits

- High Flexibility, Heat Resist Capability,
- Homogenous Joining, improves joining strength.
- Reduces Fittings application

### Standards

- Drinking Water Application :**SNI - 06 - 4829 : 2005 - PE 100 & PE 80**
- Gas Application :**ISO 4437**
- Underground Cable Protection :**STEL - QA - L - 039 - 2001/Ver.2**

# HDPE PIPE UNILON SNI - 06 - 4829 : 2005 - PE 80 & PE 100

| Series | S - 4 | S - 5 | S - 6,3 | S - 8 | S - 10 | S - 12,5 | S - 16 | S - 20 |
|---|---|---|---|---|---|---|---|---|
| SDR | SDR - 9 | SDR - 11 | SDR - 13,6 | SDR - 17 | SDR - 21 | SDR - 26 | SDR - 33 | SDR - 41 |
| PE 80 | PN -16 | PN -12,5 | PN - 10 | PN - 8 | PN - 6,3 | PN - 5 | PN - 4 | PN - 3,2 |
| PE 100 | PN - 20 | PN - 16 | PN - 12,5 | PN - 10 | PN - 8 | PN - 6,3 | PN - 5 | PN - 4 |
| OD | Wall Thickness | | | | | | | |
| (mm) | (mm) | | | | | | | |
| 16 | 1,8 | 1,6 | - | - | - | - | - | - |
| 20 | 2,3 | 1,9 | 1,6 | - | - | - | - | - |
| 25 | 2,8 | 2,3 | 1,9 | 1,6 | - | - | - | - |
| 32 | 3,6 | 2,9 | 2,4 | 1,9 | 1,6 | - | - | - |
| 40 | 4,5 | 3,7 | 3,0 | 2,4 | 1,9 | 1,6 | - | - |
| 50 | 5,6 | 4,6 | 3,7 | 3,0 | 2,4 | 2,0 | 1,6 | - |
| 63 | 7,1 | 5,8 | 4,7 | 3,8 | 3,0 | 2,4 | 2,0 | 1,6 |
| 75 | 8,4 | 6,8 | 5,5 | 4,5 | 3,6 | 2,9 | 2,3 | 1,9 |
| 90 | 10,1 | 8,2 | 6,6 | 5,4 | 4,3 | 3,5 | 2,8 | 2,2 |
| 110 | 12,3 | 10,0 | 8,1 | 6,6 | 5,3 | 4,3 | 3,4 | 2,7 |
| 125 | 14,0 | 11,4 | 9,2 | 7,4 | 6,0 | 4,8 | 3,9 | 3,1 |
| 140 | 15,7 | 12,7 | 10,3 | 8,3 | 6,7 | 5,4 | 4,3 | 3,5 |
| 160 | 17,9 | 14,6 | 11,8 | 9,5 | 7,7 | 6,2 | 4,9 | 4,0 |
| 180 | 20,1 | 16,4 | 13,3 | 10,7 | 8,6 | 6,9 | 5,5 | 4,4 |
| 200 | 22,4 | 18,2 | 14,7 | 11,9 | 9,6 | 7,7 | 6,2 | 4,9 |
| 225 | 25,1 | 20,5 | 16,6 | 13,4 | 10,8 | 8,6 | 6,9 | 5,5 |
| 250 | 27,5 | 22,7 | 18,4 | 14,8 | 11,9 | 9,6 | 7,7 | 6,2 |
| 280 | 31,3 | 25,4 | 20,6 | 16,6 | 13,4 | 10,7 | 8,5 | 6,9 |
| 315 | 35,2 | 28,6 | 23,2 | 18,7 | 15,0 | 12,1 | 9,7 | 7,7 |
| 355 | 39,6 | 32,2 | 26,1 | 21,1 | 16,9 | 13,6 | 10,9 | 8,7 |
| 400 | 44,7 | 36,3 | 29,4 | 23,7 | 19,1 | 15,3 | 12,3 | 9,8 |
| 450 | 50,2 | 40,9 | 33,1 | 26,7 | 21,5 | 17,2 | 13,8 | 11,0 |
| 500 | 55,8 | 45,4 | 36,8 | 29,6 | 23,9 | 19,1 | 15,3 | 12,3 |
| 560 | - | 50,8 | 41,2 | 33,2 | 26,7 | 21,4 | 17,2 | 13,7 |
| 630 | - | 57,2 | 46,3 | 37,2 | 30,0 | 24,1 | 19,3 | 15,4 |
| 710 | - | - | 52,2 | 42,1 | 33,9 | 27,2 | 21,8 | 17,4 |
| 800 | - | - | - | 47,4 | 38,1 | 30,6 | 24,5 | 19,6 |
| 900 | - | - | - | 53,5 | 42,9 | 34,4 | 27,6 | 22,0 |
| 1000 | - | - | - | 59,3 | 47,7 | 38,2 | 30,6 | 24,5 |
| 1200 | - | - | - | - | 57,2 | 45,9 | 36,7 | 29,4 |
| 1400 | - | - | - | - | 66,7 | 53,2 | 42,9 | 34,4 |
| 1600 | - | - | - | - | 76,2 | 61,3 | 49,0 | 39,3 |

# MDPE PIPE UNILON FOR GAS - ISO 4437

| OD | Wall Thickness (mm) | | |
|---|---|---|---|
| (mm) | SDR11-S5 | SDR17-S8 | SDR17.6-S8.3 |
| 20 | 2,0 | | |
| 25 | 2,3 | | |
| 32 | 2,9 | 2,0 | 2,0 |
| 40 | 3,7 | 2,4 | 2,3 |
| 50 | 4,6 | 3,0 | 2,9 |
| 63 | 5,8 | 3,8 | 3,6 |
| 75 | 6,8 | 4,5 | 4,3 |
| 90 | 8,2 | 5,4 | 5,2 |
| 110 | 10,0 | 6,6 | 6,3 |
| 125 | 11,4 | 7,4 | 7,1 |

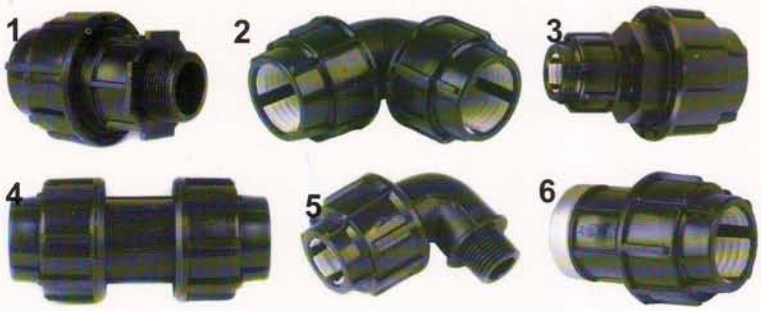
| OD | Wall Thickness (mm) | | |
|---|---|---|---|
| (mm) | SDR11-S5 | SDR17-S8 | SDR17.6-S8.3 |
| 140 | 12,7 | 8,3 | 8,0 |
| 160 | 14,6 | 9,5 | 9,1 |
| 180 | 16,4 | 10,7 | 10,3 |
| 200 | 18,2 | 11,9 | 11,4 |
| 225 | 20,5 | 13,4 | 12,8 |
| 250 | 22,7 | 14,8 | 14,2 |
| 280 | 25,4 | 16,6 | 16,0 |
| 315 | 28,6 | 18,7 | 17,9 |
| 355 | 31,4 | 21,1 | 19,6 |

# HDPE FITTINGS

**Fabricated Fittings**

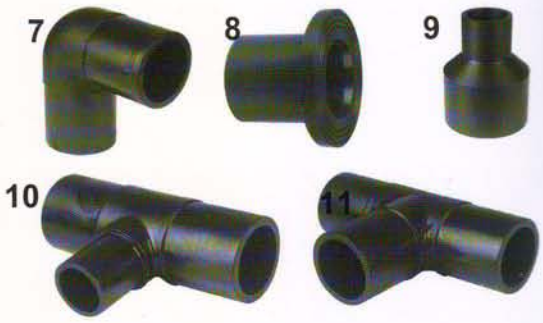
**Compression Fittings Available Stocks**

1. Male Threaded-Compression
2. Elbow 90° All Compression
3. Reducing Compression
4. Straight Coupler Compression
5. Elbow 90° Male Threaded-Compression
6. Female Threaded-Compression




**Butt-Welded Fittings Available Stocks**

Elbow 90° .7
Stub End .8
Reducer .9
Reducing Tee .10
Tee .11




**ElectroFusion Fittings Available Stocks**

Elbow 90° .12
Tee with Butt-Welded Connection .13
Reducer .14
Connection Socket .15

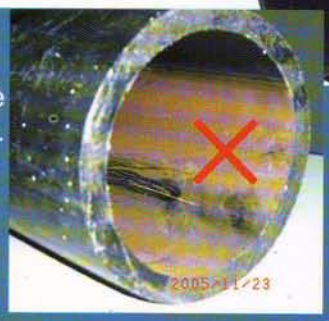
# POLYETHYLENE PIPE WELDING PROCEDURES

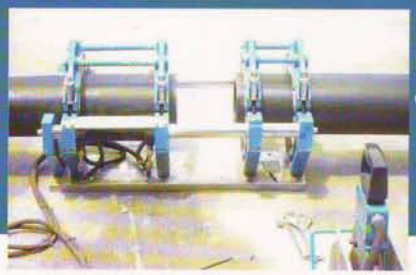
## 1. BUTT WELD METHOD

Set Heater Plate's temperature at:

- 230 °C ± 5 °C for pipes thicker than 20mm
- 215 °C ± 5 °C for pipes with wall-thickness less than 20mm

Clean Pipe ends from Dust, Soil, and other substance for they could reduce the strength of the welded joins.





Place both pipe ends on the clamping unit.

Use the Plenary Cutter to flattening both pipe ends. Apply some pressure from the pipes toward the cutter during cutting process.

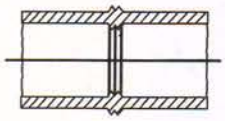
Press both pipe ends toward the Heater Plate when the plate's temperature is appropriate. Apply pressure as calculated to produce beads with the right size.

Lift the Heater Plate as soon as possible. Press both molten pipe ends toward each other.

Leave the pipes to cool down for a period as calculated. Maintain pipe ends' pressure level during cooling period.

**Precautions:**

- **Pipe ends cleanliness,**
- **Heater Plate's Temperature,**
- **Maintain both pipes on a single axis,**
- **Wall Thickness must be consistent,**
- **All parameters must be calculated prior the welding process,**
- **Only trained personnel are allowed to perform the welding process.**
- ***As part of our Service, we will provide trainings and continuous follow-ups for customers who installs UNILON PE Pipes.***



# POLYETHYLENE PIPE WELDING PROCEDURES

## 2. ELECTROFUSION WELDING METHOD


Clean the pipe's ends and Fittings.
Push the pipe into the fitting.
Mark the length of the pipe to be welded.


Peel the Pipe's ends surface using the scrapper.
Do not peel too deep or exceed the marked line.
Clamp both pipe with the fittings on the supporting frame.
Maintain both pipes and fitting are inline.


Prepare Power source for the Welding Machine.
Activate the machine.
Connect the cathode wires from the machine to the fittings.


Enter the welding parameters into the machines.
Maintain close supervision during welding process.
**Only trained personnel are allowed to perform the welding process.**

## 3. COMPRESSION JOINING METHOD

1. Clean the pipe end from dirt or chips.

2. Insert the Locking Nut and the compression ring.

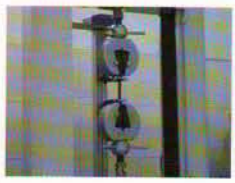
3. Insert the Rubber Ring at the pipe end.

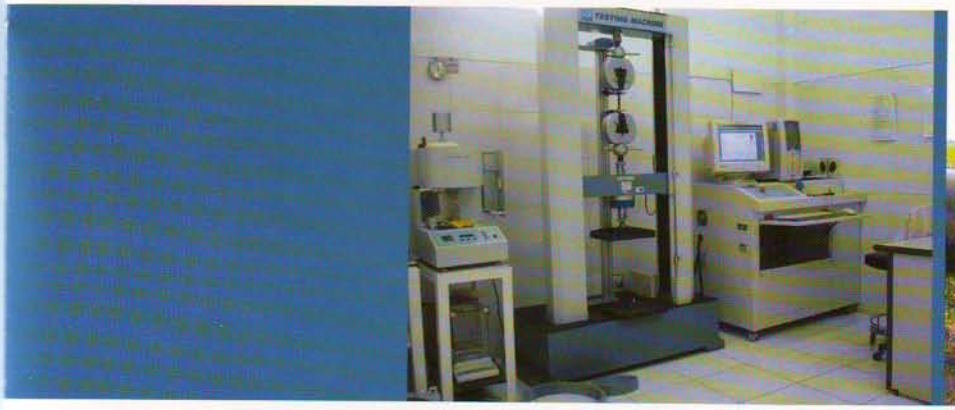
4. Connect the pipe and the rings into the Fitting's Body.

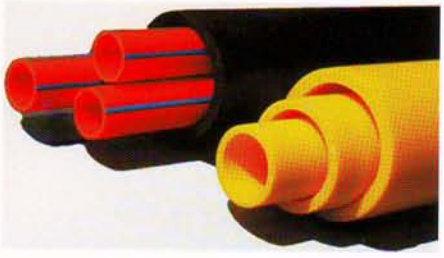
5. Use chain wrench to fastened the Locking Nut.

6. The Locking Nut must fully cover threads on the Fitting's body

# CUSTOMER SERVICES





UNILON constantly strives to provide our customers with an excellent and diverse range of services.

Our sales and marketing team consist of qualified, fully trained and experienced professionals.

We are committed to provide timely deliveries to enable our customers to minimize their inventory costs. However our service by no means ends with accurate and on-time delivery of products.

In other cases, we have to provide Specific Pipe Installation Technique Training or On-Site Installation Services. For PE Pipes, the jointing methods are different from the conventional PVC pipes. PE Pipes requires welding equipment that must be operated by trained personnel only. These equipments are available upon customers' request. For customers who wish to improve their knowledge and skills regarding this welding technique, UNILON will provide brief theory introduction and on-hand practice with the actual equipment and PE pipe.

UNILON provides other After Sales Services such as Lab Testing and On-site Inspections to monitor the quality of the pipe's installation. UNILON will always continue to look for new ways to meet its commitments to customers' needs.

# Quality System Management Cert.

# ISO 9001:2000

Quality Endorsed Company

CERTIFICATE OF REGISTRATION

**PT. Harapan Widyatama Pertiwi**

**Head Office: Agung Karya V, Blok B No. 8-9 Sunter Podomoro Jakarta 14340, INDONESIA**

**Factory: Jl. Pangkalan V, Desa Cikiwul Kecamatan Bantar Gebang Bekasi, Jawa Barat, INDONESIA**

complies with the requirements of

**AS/NZS ISO 9001:2000**
Quality management systems – Requirements

for the following capability

The registration covers the Quality Management System for the manufacture and sale of UNILON uPVC, HDPE pipes and fittings

**Registered by:**

SAI Global Certification Services Pty Ltd (ACN 108 716 669) 286 Sussex Street Sydney NSW 2000 Australia with PT SAI Global Indonesia ("SAI Global") and subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, SAI Global accepts responsibility only for proven negligence. The certificate remains the property of SAI Global and must be returned to SAI Global upon its request.

**Certificate No.:** QEC21530 **Certified Date:** 17 June 2002
**Issue Date:** 24 June 2005 **Expiry Date:** 16 June 2008

Alex Ezrakhovich
General Manager Certification
for and on behalf of
SAI Global

Authorised Local Signatory, SAI Global

SAI GLOBAL IAF ANAB IAS-ANZ KAN IQNet

IQNet
THE INTERNATIONAL CERTIFICATION NETWORK

*CERTIFICATE*

IQNet and SAI Global hereby certify that
the organization

**PT. Harapan Widyatama Pertiwi**

**Head Office: Agung Karya V, Blok B No. 8-9 Sunter Podomoro Jakarta 14340, INDONESIA**

**Factory: Jl. Pangkalan V, Desa Cikiwul Kecamatan Bantar Gebang Bekasi, Jawa Barat, INDONESIA**

for the following field of activities

The registration covers the Quality Management System for the manufacture and sale of UNILON uPVC, HDPE pipes and fittings

has implemented and maintains a

**Quality Management System**
which fulfills the requirements of the following standard

**ISO 9001:2000**

**Certificate No.: AU QEC21530** **Certified Date: 17 June 2002**
**Issue Date: 24 June 2005** **Expiry Date: 16 June 2008**

IQNet SAI GLOBAL

*Dr. Fabio Roversi*
*President of IQNet*

Alex Ezrakhovich
*General Manager Certification*
***SAI Global Limited***

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Distributor for Indonesia
**PT. GAPURA FAJAR *LANGGENG***
*Supply & Install POLYETHYLENE Piping Systems*

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