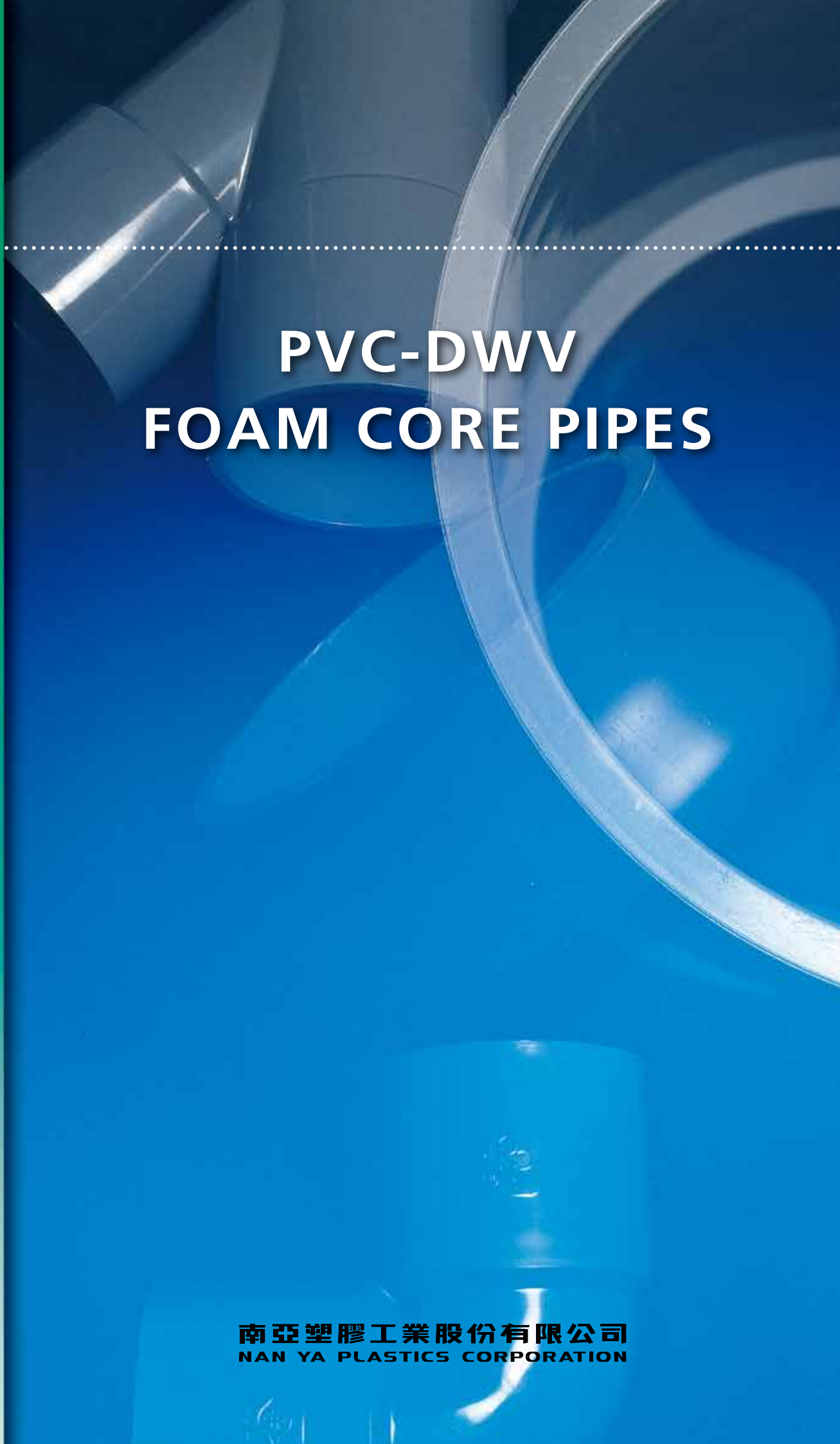


# PVC-DWV
# FOAM CORE PIPES

南亞塑膠工業股份有限公司
NAN YA PLASTICS CORPORATION

# Contents

# 1 Contents

- A best-selling construction material in Europe, the U.S. and other industrialized countries, PVC-DWV foam core pipes are widely used in aqueducts, drainage systems in buildings as well as other pressure-free applications. This lightweight (at a specific gravity of 0.95~1.0) and low-cost product requires installation that is as easy and rapid as any other PVC pipe. Its pressure resistance meets all physical requirements. The most highlighted feature of the PVC foam core pipe is its minimum noise when used in drainage systems.
- Formed by non-foam lining and coat, the PVC-DWV foam core pipe only a foam intermediate layer. Having a glowing and smooth appearance, the construction gives the PVC-DWV foam core pipe the same acid and alkali resistance and corrosion property like any other PVC pipe. This is why it is apt for aqueducts and drainage systems in buildings in large quantities. Because of its sound voltage and electric properties, this material is used in the manufacture of ducts and fittings for the Taiwanese telephone network system.
- The quality PVC-DWV foam core pipes manufactured by this company that comply with both the physical and chemical requirements set by CNS 14589 and ASTM F891 are well positioned in the market as they have won favor of the industry.
- Owning the largest plants and finest technologies for the manufacture of PVC pipes and PVC injected fittings in Taiwan, this company is fully committed to further improving and innovating the skills for mass production of PVC pipes, thus providing more application range to the industry.
- Based on the service philosophy and the nationwide marketing system, this company will keep on serving its customers in an honest and practical fashion.

# 2 Features of the PVC-DWV Foam Core Pipes

**1. Lightweight, easy handling:**
At the density of 0.95~1.0, the lightweight PVC-DWV foam core pipe is an effort-saving material of easy handling, installation and construction.

**2. Low cost:**
This lightweight, low-cost and practical material conserves your piping work expenses.

**3. Optimal acid, alkali and corrosion resistance:**
Feature optimal resistance to acids, alkali and corrosion, the PVC-DWV foam core pipe is apt for ground water works or wastewater works in buildings.

**4. Free of incrustation thanks to minimum fluid resistance:**
The glossy inside of the PVC-DWV foam core pipe allows minimum fluid resistance and higher fluidity when compared with other pipes of identical calibration. The glossy inside keeps incrustation from building up.

**5. Minimum displacement noise:**
The micro cells that form the foaming layer of the PVC-DWV foam core pipe are capable of largely absorbing noise created by drainpipes in buildings.

**6. Good electrical insulation:**
The fine electrical insulation property delivered by the PVC-DWV foam core pipe makes it an ideal material for conduits and telephone network cables.

**7. Good flattening property:**
Flattening tests, stiffness tests and pressure tests conducted on the PVC-DWV foam core pipe have delivered good flattening performance in the criteria of ASTM, CNS and satisfied all relevant requirements.

**8. Easy installation:**
The easy and rapid installation of the PVC-DWV foam core pipe conserves both labor and engineering cost of piping works.

# 3 Applications of PVC-DWV Foam Core Pipes

1. Drain, waste, and vent works in building.
2. Sewer and drain works for under ground burial, outside of buildings.
3. Wastewater works for manufacturing plants
4. Conduits and cables
5. General non-pressure piping works

Buildings

Petrochemical plant

Sewer Engineering

Cable net-work communication engineering

# 4 Physical property of PVC-DWV Foam Core Pipes

## ■ Physical property of PVC-DWV foam core pipe :

| Test Item | | Test Value | | | | | | | Test Standard |
|---|---|---|---|---|---|---|---|---|---|
| Stiffness test | Flattening Test | No cracks or ruptures. | | | | | | | CNS 14589 |
| | Nominal pipe size | 40 | 50~80 | 100 | 125~150 | 200 | 250 | 300 | |
| | Stiffness (Mpa) {kgf/cm$^2$} | 4.12 {42.0} & over | 2.06 {21.0} & over | 1.37 {14.0} & over | 0.83 {8.5} & over | 0.69 {7.0} & over | 0.41 {4.2} & over | 0.34 {3.5} & over | |
| Impact test | | Qualification required | | | | | | | |

# 5 Specifications of PVC-DWV foam core pipes

## 1. Specifications of PVC-DWV foam core pipes (CNS 14589) :

Unit : mm

| Normal pipe size | | Outside diameter & tolerance(1) | Wall thickness | | Approx. inside diameter | Approx. weight (kg/M)(2) |
|---|---|---|---|---|---|---|
| | | | Minimum | Tolerance | | |
| 40 | 1 1/2" | 48±0.15 | 3.6 | +0.8 | 40 | 0.631 |
| 50 | 2" | 60±0.15 | 4.1 | +0.8 | 51 | 0.897 |
| 65 | 2 1/2" | 76±0.18 | 4.5 | +0.8 | 67 | 1.239 |
| 80 | 3" | 89±0.20 | 5.4 | +0.8 | 78 | 1.592 |
| 100 | 4" | 114±0.23 | 6.6 | +1.0 | 100 | 2.505 |
| 125 | 5" | 140±0.25 | 7.0 | +1.0 | 125 | 3.278 |
| 150 | 6" | 165±0.28 | 8.0 | +1.4 | 148 | 4.485 |
| 200 | 8" | 216±0.38 | 9.0 | +1.4 | 197 | 6.600 |

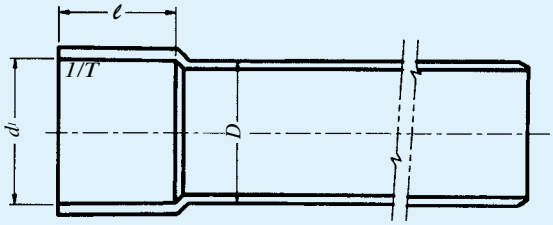
Note :

1. Outer diameter shall refer to the arithmetic mean value of any 2 given O.D. at the right angle to each other.
2. Approximate weight shall be estimated by adding the minimum thickness to 1/2 of the allowable thickness tolerance at the specific gravity of 1.0.
3. PVC-DWV foam core pipes for ground water works shall be of orange color.
4. PVC-DWV foam core pipes for regular applications or telephone network cables shall be of light gray color.

- **PVC-DWV foam core pipes uses the same fittings with CNS PVC fittings.**
- **PVC-DWV foam core pipes will be connected with CNS PVC fittings by PVC rigid adhesive.**

# 5 Specifications of PVC-DWV foam core pipes :

## 2. Specification for PVC-DWV foam core pipes with TS Solvent Cement Socket :




Unit: mm

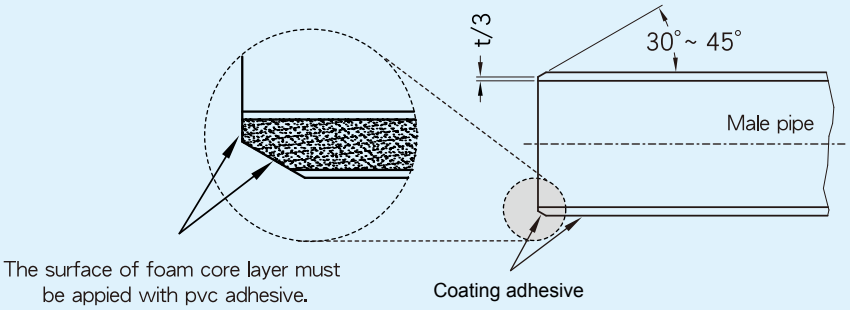
| Nominal Pipe Size | | D | $d_1$ | 1/T | l |
|---|---|---|---|---|---|
| 40 | 1 1/2" | 48±0.15 | 48.7±0.30 | 1/37 | $55\ ^{+5}_{-1}$ |
| 50 | 2" | 60±0.15 | 60.8±0.30 | 1/56 | $70\ ^{+10}_{-5}$ |
| 65 | 2 1/2" | 76±0.18 | 76.8±0.30 | 1/60 | $90\ ^{+10}_{-5}$ |
| 80 | 3" | 89±0.20 | 89.8±0.30 | 1/64 | $90\ ^{+10}_{-5}$ |
| 100 | 4" | 114±0.23 | 115.0±0.35 | 1/68 | $130\ ^{+10}_{-5}$ |
| 125 | 5" | 140±0.25 | 141.2±0.40 | 1/70 | $150\ ^{+10}_{-5}$ |
| 150 | 6" | 165±0.28 | 166.4±0.45 | 1/72 | $170\ ^{+10}_{-5}$ |
| 200 | 8" | 216±0.38 | 217.8±0.55 | 1/74 | $220\ ^{+10}_{-5}$ |

Note:
1. $1/T = \frac{d_1 - d_2}{l}$ ($d_2$ as the inner diameter of the bottom)

# 6 Installation of PVC-DWV foam core pipes (TS unheating connection)

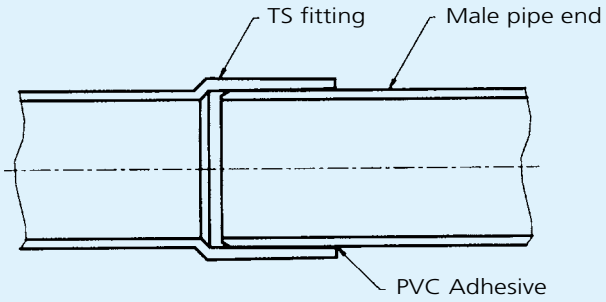
1. Whittle the outside angle of male pipe using a file or sander in 30~45° the remaining edge shall be of 1/3 t, but never less than 1mm (as shown below).

P.S.: If the pipeline was not applied pvc adhesive losses by leakage, is responsible for the installations of their own.




2. Wipe clean the inside of the fitting and outside of the pipe using a piece of dry cloth. Apply vinyl adhesive in proper quantity on the inside of the fitting and the outside of the male pipe, inclued the foam core surface. When the solvent becomes partially volatilized and the adhesion reinforced, insert the pipe and turn it 90°to allow even spreading of the adhesive. Do not turn pipes of medium and large diameters. Though, after the insertion, pad in by slighting hammering in a thick plate or a corner lining into the pipe end. Pipes of large diameters may also be connected using by machinery.

3. When the pipes were installed by NAN YA Vinyl Adhesive do not remove the connected pipes, the pipes will start to transfer water after wait for 24 hours. But if the temperature is under 5℃, the pipes need to heep 48 hours waiting after installed, then start to transfer water.



# 7 Instructions for installation of PVC-DWV foam core pipes

1. PVC-DWV foam core pipes shall be installed by following the same procedure of an ordinary PVC pipe, though TS unheating connection method shall prevail and the adhesive shall be a PVC type.
2. The following table suggests the supporting pitch for fittings protruding the PVC-DWV foam core pipe.
3. Keep PVC-DWV foam core pipes from falling when handling or installing them. Do not drop the PVC-DWV pipes when unloading them.
4. The injected fitting for installation of PVC-DWV foam core pipes is an ordinary product.
5. No PVC-DWV foam core pipe shall be used for drinking water works having internal pressure and other piping of general use.
6. During slab grouting, plumbers and electricians shall be available on the worksite for accidents.
7. Orange PVC-DWV foam core pipes and fittings shall be used for sewerage works. Light gray ones shall be used in other non-pressure applications.

Unit: mm

| Nominal diameter | Longitudinal pitch | Horizontal pitch |
|---|---|---|
| 40m/m(11/2")~65m/m(21/2") | 1.5 | 1.0 |
| 80m/m(3")~100m/m(4") | 2.0 | 1.5 |
| 125m/m(5")以上/and up | 2.5 | 2.0 |

# 經濟部標準檢驗局正字標記證書

廠　商　名　稱　南亞塑膠工業股份有限公司

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代 表 人 姓 名　吳嘉昭

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生產製造工廠地址　嘉義縣太保市南新里北港路2段201號

品管評鑑制度　CNS 12681/ISO 9001:2008

產　品　名　稱　硬質聚氯乙烯塑膠芯層發泡管

適用國家標準　總號　14589　類號　K3119

證　書　號　碼　台正字第　7077　號

**上記產品依標準法第11條第1項規定審查合格，核准使用正字標記。**

局長 陳介山

中　華　民　國　92　年　5　月　29　日

代表人姓名變更　102年11月13日　換發此證

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