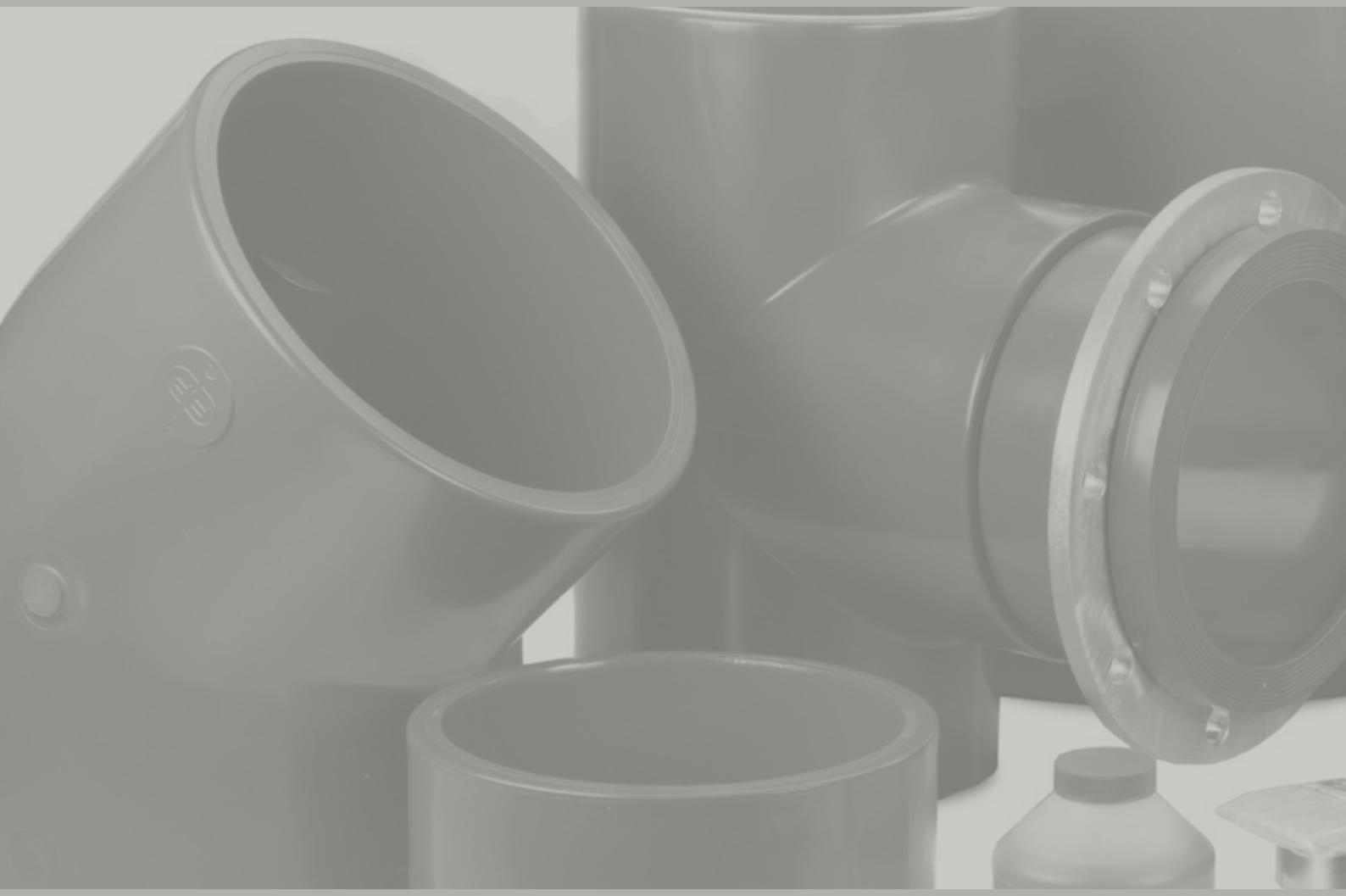
Vinidex by aliaxis

# PVC Large Bore Pressure Fittings

## Solvent Weld Fittings

## Sizes 200mm - 375mm



# PVC-U SCJ Large Bore FIP Pressure Fittings

The FIP PVC-U large bore fittings range is a complete range of large diameter fittings for solvent cement jointing (SCJ) suitable for use in pressure applications.

## APPLICATIONS

- Pumped sewerage and effluent pipelines
- Potable water
- Irrigation and turf watering
- Slurry transport
- Pressure sewerage
- Water supply
- Recycled water

## FEATURES AND BENEFITS

**PVC-U has excellent chemical resistance**
PVC-U is basically inert to most inorganic bases, acids, saline solutions and paraffinic/aliphatic hydrocarbons. However, it is not recommended for use with polar organic solvent, including chlorinated and aromatic types.

**The unique molecular structure grants a low coefficient of thermal conductivity**
$\lambda$ = 0,15 W/m°C according to ASTM C177. It virtually eliminates condensation and offers superior heat retention, reducing heat loss through piping walls.

**Low permeability to oxygen and reduced water absorption**
0,1% at 23°C according to ASTM D 570.

**Good resistance to ageing**
Thanks to the chemical and physical properties of the PVC-U resin.

**All components are suitable for conveying potable water**
The basic PVC-U resin used for manufacturing fittings is NSF approved.

**The material has excellent mechanical characteristics and good impact strength**
These properties make PVC-U suitable for high service pressures. Depending on the fitting, pressure ratings up to PN 16 at 20°C are available.

**PVC-U materials have good fire performance**
The flash ignition temperature is 399°C and flame persists only in extreme conditions, e.g. if the oxygen concentration is two times higher than the atmospheric one, or only in the presence of an external flame source. Limiting Oxygen Index: 45% Class UL 94 rating: V0.

## PRODUCT PROPERTIES

**Size Range**
DN 200 – DN 375

**Pressure Class**
PN4, PN5, PN8, PN10 and PN16

**Location**
Underground or above-ground where not exposed to direct sunlight.

**Temperature**
Maximum operating temperature of PVC-U is 60°C.

**Materials**
PVC-U

**Chemical**
Please refer to the Vinidex Chemical Resistance guide on the Vinidex website www.vinidex.com.au.

**Certifications and Approvals**
Standards
The fittings are compatible with Series 1 PVC-U pressure pipes manufactured to AS/NZS 1477 and Series 1 PVC-M pressure pipes manufactured to AS/NZS 4765. The fittings range is produced using

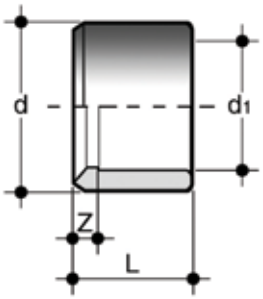
PVC-U resins compliant with the standards EN ISO 1452 and ISO 4422 and in observance of the requirements of DIN 8063 and EN ISO 15493 for the use of plastic pipes in industrial processes. The fittings are produced in accordance with the highest quality standards and in full observance of the environmental practices imposed by current legislation and ISO 14001. All products are manufactured in accordance with ISO 9001 certified quality assurance programme.

## INSTALLATION

**Standards**
Vinidex recommends that PVC-U SCJ pressure pipes are installed in accordance with AS 2032 – Installation of PVC pipe systems.

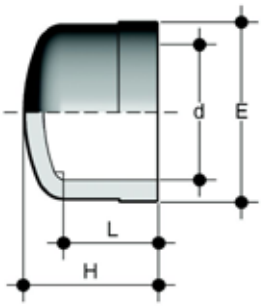
Please refer to the Vinidex website for more information on Installation and Jointing www.vinidex.com.au.

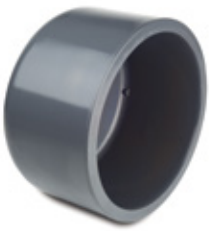
For more information please contact Vinidex or visit the FIP website www.fipnet.com.




## CAT 5 Reducing Bushes SCJ

| Vinidex Code | Nominal Size (mm) | PN | d (mm) | d1 (mm) | L (mm) | Z (mm) | Approx. Weight (kg) |
|---|---|---|---|---|---|---|---|
| 34580 | 200-150 | 16 | 225 | 160 | 119 | 33 | |
| 30409 | 225-150 | 10 | 250 | 160 | 132 | 45 | 1.7 |
| 30410 | 225-200 | 10 | 250 | 225 | 132 | 12 | 1.7 |
| 30411 | 250-200 | 10 | 280 | 225 | 147 | 27 | 4.3 |
| 30412 | 250-255 | 4 | 280 | 250 | 147 | 15 | 2.5 |
| 30414 | 300-200 | 10 | 315 | 225 | 165 | 45 | 5.5 |
| 30415 | 300-225 | 10 | 315 | 250 | 165 | 33 | 6.3 |
| 30416 | 300-250 | 10 | 315 | 280 | 165 | 18 | 3.55 |
| 30417 | 300-150 | 10 | 315 | 160 | - | - | 2.05 |
| 30418 | 375-250 | 5 | 400 | 250 | 206 | 15 | 9.2 |
| 30419 | 375-300 | 5 | 400 | 315 | 206 | 42 | 13.1 |

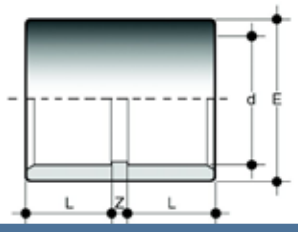


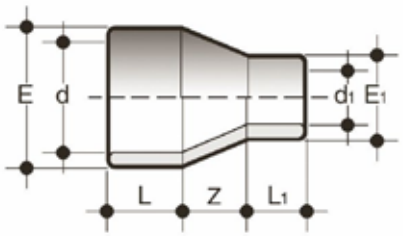
## CAT 6 End Cap SCJ

| Vinidex Code | Nominal Size (mm) | PN | d (mm) | L (mm) | Z (mm) | E (mm) | Approx. Weight (kg) |
|---|---|---|---|---|---|---|---|
| 34705 | 200 | 10 | 225 | 119 | 163 | 260 | 4.1 |

## CAT 7 Couplings SCJ

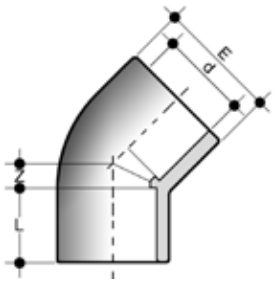



| Vinidex Code | Nominal Size (mm) | PN | d (mm) | L (mm) | Z (mm) | E (mm) | Approx. Weight (kg) |
|---|---|---|---|---|---|---|---|
| 30404 | 200 | 16 | 225 | 119 | 11 | 260 | 2.4 |
| 30405 | 225 | 10 | 250 | 131 | 10 | 286 | 5.45 |
| 30406 | 250 | 10 | 280 | 146 | 10 | 320 | 6.68 |
| 30407 | 300 | 10 | 315 | 164 | 12 | 355 | 8.3 |
| 30408 | 375 | 5 | 400 | 206 | 12 | 432 | 8.3 |



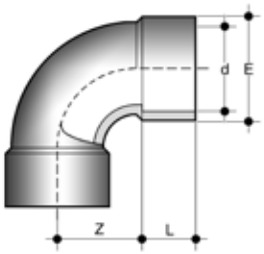

## CAT 8 Reducing Couplings SCJ

| Vinidex Code | Nominal Size (mm) | PN | d (mm) | D1 (mm) | L mm) | L1 (mm) | Z (mm) | E (mm) | E1 (mm) | Approx. Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 30327 | 200-150 | 4 | 225 | 160 | 103 | 86 | 57 | 258 | 190 | 2.2 |
| 30425 | 225-200 | 4 | 250 | 225 | 105 | 103 | 22 | 283 | 258 | 4.5 |
| 30426 | 250-200 | 4 | 280 | 225 | 101 | 103 | 47 | 317 | 258 | 7 |
| 30427 | 250-225 | 4 | 280 | 250 | 101 | 105 | 26 | 317 | 283 | 7 |
| 30355 | 300-150 | 4 | 315 | 160 | 105 | 86 | 135 | 355 | 190 | 10.5 |
| 30428 | 300-200 | 4 | 315 | 225 | 105 | 103 | 79 | 355 | 258 | 10.5 |
| 30429 | 300-225 | 4 | 315 | 250 | 105 | 105 | 57 | 355 | 283 | 10.5 |
| 30430 | 300-250 | 4 | 315 | 280 | 105 | 101 | 31 | 355 | 317 | 10.5 |
| 30431 | 375-300 | 4 | 400 | 315 | 105 | 105 | 40 | 435 | 355 | 12 |



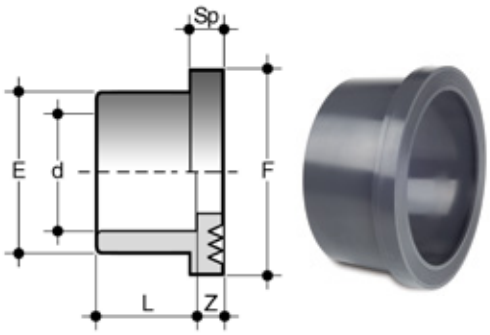

## CAT 10 - 45° Elbows SCJ

| Vinidex Code | Nominal Size (mm) | PN | d (mm) | L (mm) | Z (mm) | E (mm) | Approx. Weight (kg) |
|---|---|---|---|---|---|---|---|
| 30388 | 200 | 10 | 225 | 121 | 55 | 260 | 4.9 |
| 30389 | 225 | 10 | 250 | 131 | 58 | 286 | 7.15 |
| 30390 | 250 | 10 | 280 | 146 | 62 | 320 | 10.8 |
| 30391 | 300 | 8 | 315 | 164 | 66 | 359 | 14.9 |
| 30392 | 375 | 5 | 400 | 206 | 83 | 439 | 23.9 |



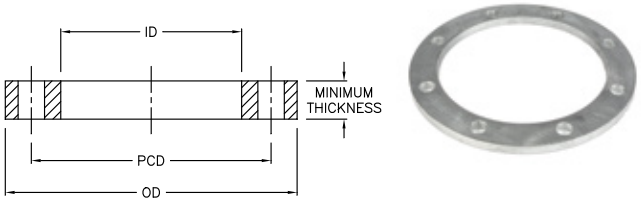

## CAT 13 - 90° Elbows SCJ

| Vinidex Code | Nominal Size (mm) | PN | d (mm) | L (mm) | Z (mm) | E (mm) | Approx. Weight (kg) |
|---|---|---|---|---|---|---|---|
| 30381 | 200 | 16 | 225 | 119 | 171.5 | 258 | 8.7 |
| 30382 | 225 | 16 | 250 | 131 | 188 | 287 | 9.5 |
| 30383 | 250 | 10 | 280 | 147 | 210 | 325 | 15.7 |
| 30384 | 300 | 8 | 315 | 164 | 236 | 359 | 21.2 |
| 30385 | 375 | 5 | 400 | 206 | 202 | 439 | 35 |



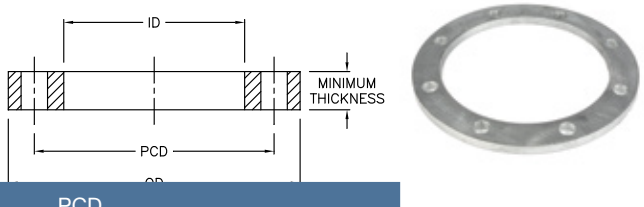

## Stub Flange SCJ

| Vinidex Code | Nominal Size (mm) | PN | d (mm) | F (mm) | L (mm) | Sp (mm) | Z (mm) | E mm) | Approx. Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30420 | 200 | 16 | 225 | 273 | 119 | 25 | 5.5 | 245 | 1.74 |
| 30421 | 225 | 16 | 250 | 306 | 131 | 20 | 8.5 | 270 | 2.15 |
| 30422 | 250 | 10 | 280 | 327 | 147 | 32 | 14.5 | 307 | 3.04 |
| 30423 | 300 | 10 | 315 | 377 | 165 | 32 | 16 | 346 | 4.58 |
| 30424 | 375 | 4 | 400 | 483 | 206 | 30 | 12 | 432 | 8.9 |



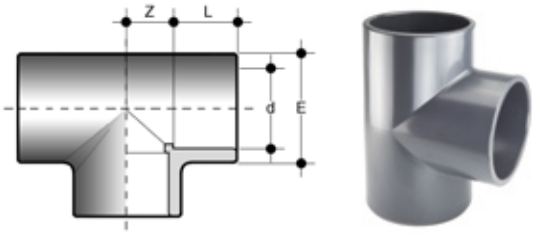

## Backing Rings Galvanised – Table D (Reduced Thickness)

| Vinidex Code | Nominal Size (mm) | OD (mm) | ID (mm) | Min. Thickness (mm) | PCD (mm) | No. Bolts | Bolts Diameter |
|---|---|---|---|---|---|---|---|
| 83454 | 200 | 335 | 252 | 12 | 292 | 8 | M16 |
| 83455 | 225 | 370 | 278 | 12 | 324 | 8 | M16 |
| 83456 | 250 | 405 | 309 | 12 | 356 | 8 | M20 |
| 83457 | 300 | 455 | 349 | 12 | 406 | 12 | M20 |
| 83617 | 375 | - | - | - | - | - | - |
| 83458 | 400 | 500 | 434 | 12 | 521 | 12 | M24 |



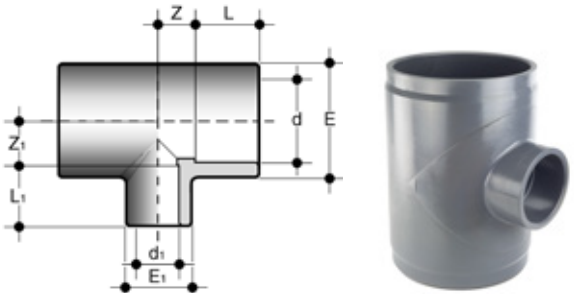

## Backing Rings Galvanised – Table E

| Vinidex Code | Nominal Size (mm) | OD (mm) | ID (mm) | Min. Thickness (mm) | PCD (mm) | No. Bolts | Bolts Diameter |
|---|---|---|---|---|---|---|---|
| 83560 | 200 | 335 | 252 | 19 | 292 | 8 | M20 |
| 83580 | 225 | 370 | 278 | 22 | 324 | 12 | M20 |
| 83585 | 250 | 405 | 309 | 22 | 356 | 12 | M20 |
| 83453 | 375 | | | | | | |
| 83590 | 300 | 455 | 349 | 25 | 406 | 12 | M24 |
| 83618 | 375 | | | | | | |
| 83591 | 400 | 500 | 434 | 32 | 521 | 12 | M24 |




## CAT 3 - Tees

| Vinidex Code | Nominal Size (mm) | PN | d (mm) | L (mm) | Z (mm) | E (mm) | Approx. Weight (kg) |
|---|---|---|---|---|---|---|---|
| 30393 | 200 | 16 | 225 | 119 | 114 | 258 | 9.8 |
| 30394 | 225 | 10 | 250 | 131 | 128 | 286 | 12.5 |
| 30395 | 250 | 10 | 280 | 146 | 144 | 319 | 18.2 |
| 30396 | 300 | 10 | 315 | 164 | 162 | 360 | 24.7 |
| 30397 | 375 | 5 | 400 | 206 | 280 | 432 | 39.5 |




## CAT 4 - Reducing Tees

| Vinidex Code | Nominal Size (mm) | PN | d (mm) | d1 (mm) | L (mm) | L1 (mm) | Z (mm) | Z1 (mm) | E (mm) | E1 (mm) | Approx. Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30436 | 200-150 | 10 | 225 | 160 | 129 | 87 | 86 | 129 | 285 | 193 | 4 |
| 30398 | 250-150 | 10 | 280 | 160 | 146 | 88 | 84 | 153 | 320 | 193 | 16.2 |
| 30399 | 250-200 | 10 | 280 | 225 | 146 | 117.5 | 117 | 150.5 | 320 | 320 | 18.2 |
| 30400 | 300-150 | 8 | 315 | 160 | 164 | 86 | 83 | 161 | 355 | 355 | 22.3 |
| 30401 | 300-200 | 8 | 315 | 225 | 164 | 106 | 102 | 179 | 355 | 355 | 30.3 |
| 30387 | 300-225 | 8 | - | - | - | - | - | - | - | - | - |
| 30403 | 375-300 | 5 | 400 | 315 | - | 165 | 280 | 302 | 432 | 432 | 32 |


## Priming Fluid

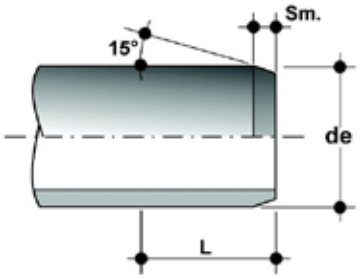
| Vinidex Code | Volume | Min. (Pack) Quantity | Carton Quantity |
|---|---|---|---|
| 82341 | 250ml | 1 | 36 |
| 82342 | 500ml | 1 | 20 |
| 82343 | 1L | 1 | 12 |
| 82344 | 4L | 1 | 4 |
| 82345 | 20L | 1 | 1 |


## Large Bore Pressure Cleaner & Gap-Filling Solvent Cement

| Vinidex Code | Volume | Min. (Pack) Quantity | Carton Quantity |
|---|---|---|---|
| 30432 | 1L | 1 | 6 |

## Rigid PVC-U Pipes and Fittings Theoretical Solvent Cement Consumption

| Nominal Diameter Pipe (mm) | Pipe/Fitting diameter OD (mm) | Number of Joints per 1 Ltr of Solvent Cement | Number of Joints per 1 Ltr of Priming Fluid |
|---|---|---|---|
| 200 | 225 | 6 | 50 |
| 225 | 250 | 4 | 30 |
| 250 | 280 | 2 | 24 |
| 300 | 315 | 2 | 24 |
| 375 | 400 | 1 | 16 |




## Socket Depth, Cement and Chamfer Length

| Nominal Diameter Pipe (mm) | Pipe OD de (mm) | Cementing length L (mm) | Chamfer Sm (mm) |
|---|---|---|---|
| | **Metric Series** | Metric Series | |
| 200 | 225 | 119 | 5/6 |
| 225 | 250 | 131 | 5/6 |
| 250 | 280 | 146 | 5/6 |
| 300 | 315 | 164 | 5/6 |
| 375 | 400 | 206 | 5/6 |

## RECOMMENDATIONS

In the case where the external diameter of the pipe and the internal diameter of the fitting are at opposite extremes of their tolerance values, the dry pipe cannot be inserted in the dry socket of the fitting. Insertion will only be possible after having applied the Vinidex Priming Fluid and Type G Solvent Cement to both parts to be joined.

The Vinidex Solvent Cement is manufactured from the same PVC resin used for the production of the pipes, fittings and valves. Unless otherwise specified, the solvent cement used on the surfaces to join must also be usable with the following tolerances:

- maximum interference 0.2 mm.
- maximum clearance 0.6 mm.

When using the Vinidex Priming Fluid and Solvent Cement, the following precautions should be adopted:

- Use gloves and safety glasses to protect hands and eyes.

- Use the Vinidex Priming Fluid and Solvent Cement in a working environment with sufficient ventilation to avoid the formation of pockets of air containing concentrations of evaporated solvent, which can irritate the respiratory tract and eyes.

- Due to the volatile nature of the solvents in the priming fluid and solvent cement, the containers must be closed immedi ately after use.

- Solvents in the gaseous phase tend to form flammable mixtures. Therefore, remove any ignition sources such as welding operations, accumulation of electrostatic charges, etc. from the work area, and do not smoke. In all cases, it is advisable to adhere strictly to the Vinidex Solvent Cement manufacturer's instruc tions written on the packaging.

- In order to prevent a deterioration in the performance of the Vinidex Priming Fluid and Solvent Cement, the joining opera tions should be carried out within an ambient temperature range of between + 5 and + 40° C.

The amount of Vinidex Solvent Cement used on the joints depends on a number of factors (environmental conditions, pipe size, cement viscosity, operator experience, etc.) which are often difficult to quantify. In this respect, Table "Rigid PVC-U Pipes and Fittings, Theoretical Solvent Cement Consumption" (Page 8) reports the approximate quantities of Vinidex Priming Fluid and Solvent Cement normally used for joining various diameter pipes and fittings.

After having completed all the joints and prior to putting the lines into service, make sure that the insides of the pipes and fittings are completely free of any solvent traces/ vapours. This will prevent contamination of the fluids conveyed.

Table "Most common defects" below reports the most common types of defect found if the correct solvent welding procedure is not followed.

### Most Common Defects

| Solvent Cement too fluid (incorrect diluent addition) | |
|---|---|
| **Immediate effect** | Cement failure. |
| **Consequence** | Joint separation or leaks from between the pipe and fitting. |

| Excess solvent cement | |
|---|---|
| **Immediate effect** | Internal and external runs beyond the joint zone. |
| **Consequence** | Weakening of the outer surface of the joint area and formation of bubbles with micro-cracks/sources of fracture in the base material. |

| Excessively dense solvent cement due to evaporated solvent | |
|---|---|
| **Immediate effect** | Cementing failure |
| **Consequence** | Joint separation or leaks from between the pipe and fitting. Possible surface cracks triggering cracks in the base material. |

| Insufficient and/or incorrect distribution of solvent cement | |
|---|---|
| **Immediate effect** | Cementing failure or local weakness. |
| **Consequence** | Joint separation or leaks from between the pipe and fitting. |

| Incorrect pipe insertion (incomplete, excessive, misaligned) | |
|---|---|
| **Immediate effect** | Imperfect Joint. |
| **Consequence** | Transmission of mechanical stresses from the pipe to the fitting and/or leaks from the joint. |

| Impurities and/or humidity on the surfaces of the parts to join | |
|---|---|
| **Immediate effect** | Imperfect Joint. |
| **Consequence** | Joint separation or leaks (fluid seepage) from between the pipe and fitting. |

## SOLVENT WELDING INSTRUCTIONS

1) Cut the pipe perpendicular to its axis to obtain a clean square section, preferably using a wheeled pipe cutter designed specifically for thermoplastic pipes
(Fig. 1).


Fig. 1

2) Chamfer the outer edges of the pipe in order to ensure that it enters the socket of the fitting at an angle of 15°. The chamfering operation must be carried out at all costs, otherwise the lack of chamfer can lead to the Vinidex Solvent Cement being scraped off the surface of the fitting. (Fig. 2)


Fig. 2

3) Measure the depth of the socket of the fitting to the internal shoulder and mark the corresponding distance on the end of the pipe (Fig. 3 and 4). For more details,
refer to the “Socket depth, cement and chamfer length” table. (Page 8)

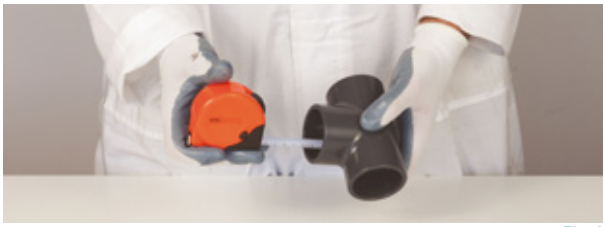


Fig. 3

4) Using a clean paper towel or applicator soaked in Vinidex Priming Fluid, remove any traces of dirt or grease from the outer surface of the pipe for the entire cementing length. Repeat the same operation on the internal surface of the socket of the fitting: leaving the surfaces softened (Fig. 5).


Fig. 4

Leave the surfaces to dry for a few minutes before applying the Vinidex Type G Solvent Cement. Remember that, in addition to cleaning the joint surfaces, the Vinidex Priming Fluid also performs the important role of softening and preparing the surface
to receive the solvent, an operation that enables a perfect joint to be obtained.

Fig. 5

5) Apply the Vinidex Type G Solvent Cement in a uniform manner longitudinally over both parts to be assembled (outer surface of the pipe and internal coupling surface of the fitting) using an applicator or suitably sized coarse brush.

It is advisable to use an applicator/brush of dimension not less than half the diameter of the pipe. The Vinidex Type G Solvent Cement must be applied along the entire length of the joining surface of both the pipe and the fitting:

- for the entire joint length of the pipe previously marked on the outer surface (Fig. 6)
- for the entire depth of the socket as far as the internal shoulder (Fig.7)

6) Fully insert the pipe into the fitting. (Fig. 8)

7) The pipe must be inserted in the fitting as soon and as quick as possible (after no more than 20-25 seconds is recommended).

8) Immediately after fully inserting the pipe in the fitting, apply pressure to the joined parts for a few seconds. Then use a clean cloth to remove any excess solvent cement from the outer surfaces, and from internal surfaces where possible (Fig. 9).

9) Vinidex Type G Solvent Cement drying: the joined parts must be left to stand in order to allow the solvent cement to set naturally without generating any unnecessary stress.
The setting time depends on the amount of stress that the joint will be placed under. In particular, the following minimum setting times must be respected according
to the ambient temperature:

- before handling the joint:
  - from 5 to 10 minutes for ambient T. > 10°C
  - from 15 to 20 minutes for ambient T. < 10°C

- for repair joints on pipes of any size or pressure not subject to hydraulic testing:
  - 1 hour for each atm of applied pressure

- for joints in pipes and fittings of any diameter subject to pressure testing up to PN 16:
  - minimum 24 hours

The solvent cement setting times indicated are valid at ambient temperature (approx. 25°C.). For particular climatic conditions (humidity, temperature, etc…),

Fig. 6

Fig. 7


Fig. 8


Fig. 9


Fig. 10

Vinidex Pty Limited
ABN 42 000 664 942

HEAD OFFICE

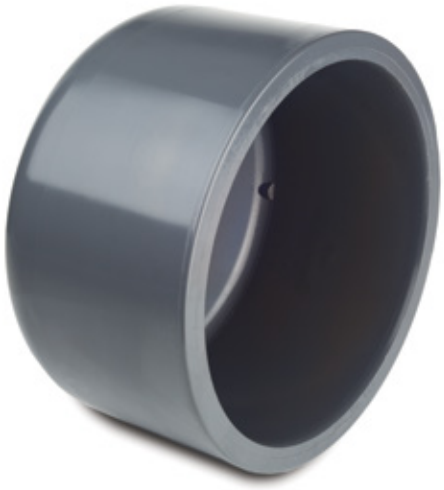
Level 4, 26 College Street
Darlinghurst NSW 2010
PO Box 747, Darlinghurst NSW 1300

Reception: +61 2 8278 0500

CUSTOMER SERVICE

Phone: 13 11 69
Fax: 13 24 43

Email: sales@vinidex.com.au
Web: www.vinidex.com.au



Limitation of Liability

This product catalogue has been compiled by Vinidex Pty Limited ("the Company") to promote better understanding of the technical aspects of the Company's products to assist users in obtaining from them the best possible performance.
The product catalogue is supplied subject to acknowledgement of the following conditions:

1 The product catalogue is protected by copyright and may not be copied or reproduced in any form or by any means in whole or in part without prior consent in writing by the Company. 2 Product specifications, usage data and advisory information may change from time to time with advances in research and field experience. The Company reserves the right to make such changes at any time without further notice. 3 Correct usage of the Company's products involves engineering judgements, which can not be properly made without full knowledge of all the conditions pertaining to each specific installation. The Company expressly disclaims all and any liability to any person whether supplied with this publication or not in respect of anything and all of the consequences of anything done or omitted to be done by any such person in reliance whether whole or part of the contents of this publication. 4 No offer to trade, nor any conditions of trading, are expressed or implied by the issue of content of this product catalogue. Nothing herein shall override the Company's Condition of Sale, which may be obtained from the Registered Office or any Sales Office of the Company. 5 This product catalogue is and shall remain the property of the Company, and shall be surrendered on demand to the Company
6 Information supplied in this product catalogue does not override a job specification, where such conflict arises; consult the authority supervising the job. © Copyright Vinidex Pty Limited.

VIN002-
20191118