PVC Agriculture Irrigation Pipe

Submittal Data Sheet

Job or Customer: .....

Engineer: .....

Contractor: .....

Submitted by: ..... Date

Approved by: ..... Date

Order No: ..... Date

Specification: .....

< STANDARDS >

ASTM D17847
ASTM D2241
ASTM D3139
ASTM F477

PVC is the most frequently specified of all thermoplastic piping materials. It has been used successfully for over 60 years. PVC is characterized by distinctive physical properties, and is resistant to corrosion and chemical attack by acids, alkalis, salt solutions and many other chemicals.

PVC Agriculture Irrigation Pipe is used in lower pressure agricultural irrigation systems.

PVC Agriculture Irrigation pipe is manufactured from a PVC compound with a 12454 cell classification (Type 1, Grade 1). The maximum service temperature for PVC is 140°F (60°C), under pressure.

PVC Agriculture Irrigation Pipe is offered 2-1/2" through 4" in SDR-32.5, and 3" through 12" in SDR-41. The Pipe is available in 20' sections, Bell end in SDR-32.5 and SDR-41 or Gasket in SDR-41.

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PVC Agriculture Irrigation Pipe

Submittal Data Sheet

Material Properties

Properties	PVC	Standards
Specific gravity	1.42	ASTM D792
Tensile strength, psi at 73°F	7,000	ASTM D638
Modulus of elasticity tensile, psi at 73°F	400,000	ASTM D638
Flexural strength, psi	14,500	ASTM D790
Izod impact, ft.lbs./in. at 73°F, notched	0.65	ASTM D256
Compressive strength, psi	9,000	ASTM D695
Poisson's ratio	0.38	
Working stress, psi at 73°F	2,000	
Coefficient of thermal expansion in./in./°F (x 10^{-5})	3	ASTM D696
Linear expansion, in./10°F per 100' of pipe	0.36	
Maximum operating temperature under pressure	140°F (60°C)	
Deflection temperature under load, °F at 66 psi	173	ASTM D648
Deflection temperature under load, °F at 264 psi	160	ASTM D648
Thermal conductivity, BTU.in./hr.ft².°F	1.2	ASTM C177
Burning rate	Self extinguish	ASTM D635
Burning class	V-0	UL-94
Flash ignition, °F	730	
Limited oxygen index (%)	43	ASTM D2863-70
Water absorption, %, (24 hrs. at 73°F)	0.05	ASTM D570

PVC Agriculture Irrigation Pipe

Submittal Data Sheet

Pipe Availability

SDR 32.5,Bell End 20′

Nominal Size	Outside Diameter	Min. Wall Thickness	Inside Diameter	Max Working Pressure at 73°F	Wt/100′
2-1/2″	2.875	0.088	2.692	125 PSI	50
3″	3.500	0.108	3.275	125 PSI	75
4″	4.500	0.138	4.213	125 PSI	123

SDR 41, Bell End 20′

Nominal Size	Outside Diameter	Min. Wall Thickness	Inside Diameter	Max Working Pressure at 73°F	Wt/100′
3″	3.500	0.085	3.323	100 PSI	59
4″	4.500	0.110	4.271	100 PSI	99
5″	5.563	0.136	5.28	100 PSI	151
6″	6.625	0.162	6.288	100 PSI	214
8″	8.625	0.210	8.118	100 PSI	362
10″	10.750	0.262	10.205	100 PSI	562
12″	12.750	0.311	12.103	100 PSI	792

SDR 41, Gasket 20′

Nominal Size	Outside Diameter	Min. Wall Thickness	Inside Diameter	Max Working Pressure at 73°F	Wt/100′
6″	6.625	0.162	6.288	100 PSI	221
8″	8.625	0.210	8.188	100 PSI	366
10″	10.750	0.262	10.205	100 PSI	570

Note: Length of pipe: Gasketed is 20ft plus bell

Safe Handling & Storage of Pipe

Care must be taken when handling PVC products to ensure that pipe is not damaged prior to installation. Take the following precautions to ensure PVC products remain in top condition prior to installation.

- Store pipe indoors if possible
- Pipe stored outside must be covered with a wellventilated white tarp
- Always keep pipe clean and covered in its original packaging
- Always store pipe on a flat surface and never store other products on top of pipe
- Do not drop or drag pipe
- Inspect all products for shipping damage prior to installation
- Never install products that are damaged

⚠ WARNING

DANGER: Highly flammable liquid and vapor may form explosive peroxide. Follow guidelines carefully.

⚠ WARNING

During the curing of the solvent welded joints, vapors may accumulate inside the piping system, especially should one end of the line be capped. Nearby sparks from welders or torches may inadvertently ignite these vapors and create a hazardous incident. Attention must be given to removing all vapors using air-blowers or water flushing prior to capping one end of an empty piping system.

Solvent Welding Installation

Introduction

Creating optimal solvent welded connections requires attention to detail, proper preparation of components and an understanding of all instructions provided in this manual.

Safe Handling & Storage of Primers & Solvent Cements

Primer and solvent cement are made from flammable liquids and must be kept away from all sources of ignition. Good ventilation must be maintained to reduce fire hazard and to minimize the breathing of solvent vapors. Refer to ASTM F402, Standard Practice for Safe Handling of Solvent Cements, Primers, and Cleaners Used for Joining Thermoplastic Pipe and Fittings. Always adhere to local jobsite and workplace safety regulations.

- Always provide proper ventilation when applying primers and cements
- Avoid skin or eye contact with primers and cements
- Wash immediately if contact occurs to avoid prolonged
- exposure
- Do not solvent weld joints near open flames or soldering torches
- Use Personal Protection Equipment (PPE) when handling primers and solvent cements
- Always store primer and cement indoors
- For cold weather installation, store primer and cement in a warm location above 40°F
- For hot weather installation, store primer and cement in a cool, shaded location
- Always check bottom of primer and cement cans for date of manufacture and expiry date
- Consult the primer and cement manufacturer directly if unsure that the primer and cement has expired
- Properly discard primer and cement that exceeds its recommended shelf life or expiry date
- Properly discard solvent cement that has hardened or jelled
- Tightly close partially used primer and cement containers
- Always thoroughly shake cement before use

Solvent Welding Basics

To make consistently tight joints, the following points should be followed:

- Dry fit all joints prior to solvent welding to confirm proper interference fit
- Do not solvent weld joints that are too loose or too tight
- Always use bevelling tools to prepare pipe ends before cementing
- Do not solvent weld joints without first bevelling pipe ends
- Follow all solvent welding instructions provided in this manual
- The joining surfaces must be softened and made semifluid with the use of a primer
- Sufficient cement must be applied to fill the gap between pipe and fittings
- Assembly of pipe must be made while the cement coatings on the surfaces are still wet and fluid
- Joint strength will develop as the cement cures. If the joint is made properly, the dissolved surfaces in the tight part of the joint will fuse together

NOTICE

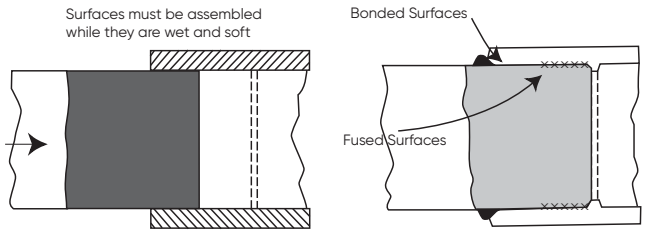
Do not use excessive amounts of primers or solvent cement as it can lead to puddling. Puddling of primer and cement in the pipe and fittings can result in product failures and property damage. Always follow the instructions provided with each can of CPVC primer and/or solvent cement.

Cement Types

Two-Step Method (Solvent Cement) for Joining PVC.

- Solvent Cement: meets ASTM D2564 are typically clear, blue, or gray
- Primer: meets ASTM F656 and plumbing codes require them to be purple

Sufficient cement must be applied to fill the gap in the loose part of the joint. Besides filling the gap, adequate solvent cement layers will penetrate the surfaces. If the solvent cement coatings on the pipe and fittings are wet and fluid when assembly takes place, they will tend to flow together and become one solvent cement layer. Also, if the solvent cement is wet, the surfaces beneath them will still be soft, and these dissolved surfaces in the tight part of the joint will fuse together.



As the solvent dissipates, the solvent cement layer and the dissolved surfaces will dry and harden with a corresponding increase in joint strength. Completed joints must not be disturbed until they have properly set. See the Joint Set Schedule table for details.

Joint strength continues to develop as the solvent cement dries. To determine when solvent cement joints can be pressure tested, see the Joint Cure Schedule table.

Handling & Installation Procedures

Solvent Welding Installation

Step 1 Preparation

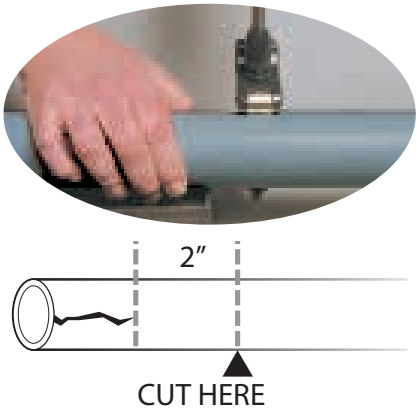
Assemble proper materials for the job. This includes the appropriate cement, primer and applicator for the size of piping system to be assembled, tape measure, contrasting color marker and beveling tool. See Tables for guidelines to estimate the amount of cement required.

⚠ **CAUTION:** Use proper Personal Protective Equipment (PPE) for the job: respirator, safety glasses, gloves and protective clothing.

Step 2 Cutting the Pipe

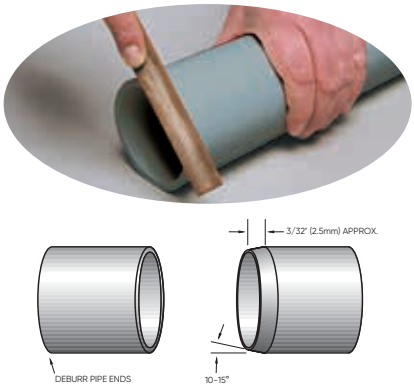
It is important to cut the pipe squarely. A square cut provides the surface of the pipe with the maximum bonding area. Pipe can be easily cut with a wheel-type plastic tubing cutter, chop saw or fine toothed saw. Do not use reciprocating saws.

Tools used to cut pipe must be designed for use with CPVC piping and must be in good condition in accordance with the tool manufacturer's recommendations. If there is any indication of pipe damage or evidence of pipe end cracking, cut off at least 2 inches beyond any visible crack. Use of ratchet cutters is not recommended as they may split the pipe if not properly used and maintained.



Step 3 Preparing Pipe Ends

After cutting, always remove all burrs and filings from both the inside and outside of the pipe and bevel the pipe end using a beveling tool. Remove burrs and filings from the inside of the pipe using a knife edge or file. Failure to remove burrs can scrape channels into pre-softened surfaces, create obstructions inside surface walls, or inadvertently plow cement out of the joint during assembly.



Step 4 Cleaning

Using a clean dry cloth, wipe any dirt and moisture from the fitting socket and the pipe end. Moisture will increase cure times and dirt and grease can prevent adhesion.

Handling & Installation Procedures

Step 5 Dry Fitting

Before applying primer or solvent cement, test all connections (pipe, fittings and accessories) to confirm a proper interference fit exists. Dry-fit contact between properly beveled pipe and fitting sockets is essential in making a good joint. The beveled pipe should easily enter the fitting socket and make contact with the inner fitting socket wall before bottoming out. A proper interference fit is present when the beveled pipe can only be inserted 1/3 to 2/3 of the way into the fitting socket.

CAUTION: We do not recommend the solvent welding of pipe, fittings or accessories that fit loosely together or where pipe bottoms out in a dry fit. Proper joint strength may not be developed. Please contact IPEX to discuss further.

Do not solvent weld pipe, fittings or accessories if a beveled pipe cannot easily be inserted at least 1/3 of the way into the fitting socket. This may cause excessive stresses during assembly leading to joint failure.

Step 6 Marking the Pipe

Measure the socket depth and mark the outside of the pipe with this dimension, followed by a second mark 1 inch further back. The first line will provide a guide for ensuring enough solvent cement is applied on the pipe. Maintaining a 1 inch distance to the second line once the pipe is inserted into the socket will indicate full and proper insertion of the pipe inside the socket.

Step 7 Select Applicator

Ensure that the right applicator is being used for the size of pipe being joined. The applicator size should be equal to half the pipe diameter. It is important that a proper size applicator be used to help ensure that sufficient layers of cement and primer are applied.

Step 8 Primer Application

Using the correct applicator, aggressively work the primer into the socket, keeping the surface and applicator wet until the surface has been softened. More applications may be needed for hard surfaces and cold weather conditions. Re-dip the applicator in primer as required. When the surface is primed, remove any puddles of primer from the socket.

Handling & Installation Procedures

Step 9 Primer Application

Aggressively work the primer on to the end of the pipe to a point 1/2" beyond the depth of the fitting socket.

Step 10 Primer Application

A second application of primer in the socket is required, keeping the surface and applicator wet until the surface has been softened. When the surface is primed, remove any puddles of primer from the socket.

Step 11 Cement Application

Throughly stir the cement or shake can before each use. Immediately and while the surfaces are still wet, using the correct size applicator, aggressively work a heavy, even layer of cement on to the pipe end equal to the depth of the fitting socket. Do not brush it out to a thin paint type layer, as this will dry too quickly.

Step 12 Cement Application

Aggressively work a medium layer of cement into the socket. Avoid puddling cement in the socket by holding the fitting on an angle. If primer has dried, repeat the two Primer Application steps above.

NOTICE: Avoid pulling the cement in the socket. Excessive cement may cause the fitting to weaken due to softening by the trapped solvents.

Step 13 Cement Application

Apply a second heavy, even layer of cement on the pipe. Apply enough solvent cement to completely fill all the gaps between the pipe and at socket entrance.

Handling & Installation Procedures

Step 14 Assembly

Without delay, while the cement is still wet, assemble the pipe. Use sufficient force to ensure that the pipe bottoms in the socket.

If cement has dried before assembly, discard.

Step 15 Assembly

Hold the pipe and socket together for approximately 30 seconds to avoid push out. If push out does occur, the joint will need to be replaced.

Step 16 Assembly

After assembly, a joint should have a ring or bead of cement completely around the juncture of the pipe and socket. If voids in this ring are present, sufficient cement was not applied and the joint may be defective.

Step 17 Removing Excess

With a clean, dry cloth, remove the excess solvent cement from the pipe and socket entrance. This will allow the solvent to evaporate from within the joint and prevent weakening of the pipe.

Step 18 Cement Application

Handle newly assembled joints carefully until initial set has taken place.
(Note: in humid weather, allow for at least 50% more curing time.)

Handling & Installation Procedures

Guidelines for Solvent Cement Set & Cure Times

The information listed below is for reference purposes only. Be sure to follow the cement manufacturer's cure time schedule, as times can vary. Extreme heat, cold, and humidity will also have an effect.

- Set time – time required before the joint can be carefully handled
- Cure time – time required before the system can be hydrostatically pressure tested

Set Time Schedule

Pipe Size Range	Temperature Range (°F)		
	60 – 100°	40 – 60°	0 – 40°
1/2" to 1-1/4"	2 minutes	5 minutes	10 minutes
1-1/2" to 2"	5 minutes	10 minutes	2 hours
2-1/2" to 8"	30 minutes	2 hours	12 hours
10" to 12"	2 hours	8 hours	24 hours

Cure Time Schedule

For hydrostatic test pressure **below 180psi**:

Pipe Size Range	Temperature Range (°F)		
	60 – 100°	40 – 60°	0 – 40°
1/2" to 1-1/4"	15 minutes	20 minutes	30 minutes
1-1/2" to 2"	30 minutes	45 minutes	1 hour
2-1/2" to 8"	1.5 hours	4 hours	72 hours
10" to 12" (up to 100psi)	48 hours	96 hours	8 days

For hydrostatic test pressure **above 180psi**:

Pipe Size Range	Temperature Range (°F)		
	60 – 100°	40 – 60°	0 – 40°
1/2" to 1-1/4"	6 hours	12 hours	48 hours
1-1/2" to 2"	12 hours	24 hours	96 hours
2-1/2" to 8"	24 hours	48 hours	8 days

** Due to the many variables in the field, these figures are to be used as a general guide only. Refer to primer and cement manufacturer for actual cure times.

Pressure Rating VS. Temperature

Temperature (°F)	Pressure De-Rating Factor
73	1.00
80	0.88
90	0.75
100	0.62
110	0.50
120	0.40
130	0.30
140	0.22

Handling & Installation Procedures

Cold Weather

Although normal installation temperatures are between 40°F (4°C) and 110°F (43°C), high strength joints have been made at temperatures as low as –15°F (–26°C).

In cold weather, solvents penetrate and soften the plastic pipe and fitting surfaces more slowly than in warm weather. In this situation, the plastic is more resistant to solvent attack and it becomes even more important to pre-soften surfaces with an aggressive primer. Be aware that because of slower evaporation, a longer cure time is necessary.

Tips for solvent cementing in cold weather

- Prefabricate as much of the system as is possible in a heated work area.
- Store cements and primers in a warmer area when not in use and make sure they remain fluid.
- Take special care to remove moisture including ice and snow from the surfaces to be joined.
- Ensure that the temperature of the materials to be joined (re: pipe and fittings) is similar.
- Use a primer to soften the joining surfaces before applying cement. More than one application may be necessary.
- Allow a longer cure period before the system is used.
- **Note:** A heat blanket may be used to speed up the set and cure times.

Hot Weather

There are many occasions when solvent cementing plastic pipe at 95°F (35°C) temperatures and above cannot be avoided. If special precautions are taken, problems can be avoided.

Solvent cements for plastic pipe contain highstrength solvents which evaporate faster at elevated temperatures. This is especially true when there is a hot wind blowing. If the pipe is stored in direct sunlight, the pipe surface temperatures may be 20°F to 30°F (10°C to 15°C) higher than the ambient temperature. In this situation, the plastic is less resistant to attack and the solvents will attack faster and deeper, especially inside a joint. It is therefore very important to avoid puddling the cement inside the fitting socket and to ensure that any excess cement outside the joint is wiped off.

Tips for solvent cementing in hot weather:

- Store solvent cements and primers in a cool or shaded area prior to use.
- If possible, store fittings and pipe or at least the ends to be solvent welded, in a shady area before cementing.
- Try to do the solvent cementing in cooler morning hours.
- Cool surfaces to be joined by wiping with a damp rag.
- Make sure that the surface is dry prior to applying solvent cement.
- Make sure that both surfaces to be joined are still wet with cement when putting them together. With large size pipe, more people on the crew may be necessary.
- Using a primer and a heavier, high-viscosity cement will provide a little more working time.

Note: During hot weather the expansion-contraction factor may increase. Refer to the expansion-contraction design criteria in this manual.

Handling & Installation Procedures

Gasket Joint Installation

PVC Agriculture Irrigation pipe with gasket joint design meets ASTM D3139. The gasket for this joint is made of an elastomeric ring in compliance with ASTM F477.

Step 1 Preparation

Keep both the spigot and the bell clean. It is good practice to lay PVC pressure pipe with bells forward so that the assembly operation will consist of pushing the spigot into the bell. This will minimize the possibility of contaminating the surfaces with foreign material All assemblies should be concentric. Use only approved lubricant. The use of substitute lubricants may affect water quality or damage the gaskets.

Step 2 Cleaning

Gaskets are factory-installed.

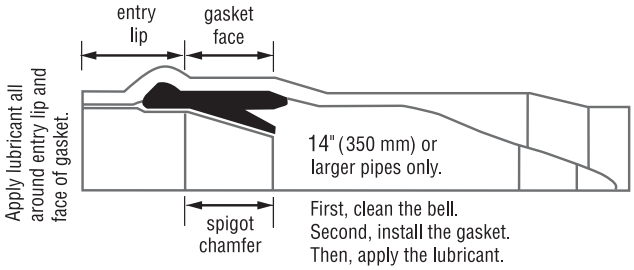
Clean the inside of the bell (including the face of the gasket), and the outside of the spigot with a rag, brush, or paper towel to remove any dirt or foreign material before assembling.

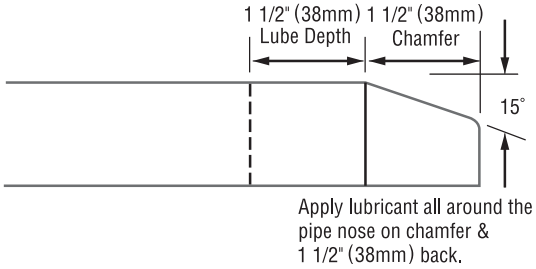
Step 3 Chamfering (if required)

The pipe is shipped with a chamfer on the end of the spigot. If there is no chamfer, follow the example of a factorymade spigot and machine a suitable chamfer.

Step 4 Lubrication

Apply a thin coating of lubricant (equivalent to a brushed coating) using a glove, a rag, or a paint brush The area to be covered is as follows:





NOTE: Gasket drawings are for information only. Actual gaskets may vary.

Handling & Installation Procedures

Gasket Joint Installation

Step 5 Assembly

Keeping the spigot out of the dirt, position it so that the chamfer is resting against the gasket in the bell. Push the spigot into the bell until the assembly line on the spigot is even with the edge of the bell. The assembly effort can be delivered by hand in small diameters with the aid of a twist as the spigot enters the bell, or by using a bar and block. Other assembly methods include lever pullers, hydraulic jacks, and for large diameter pipes the IPEX Pipe Puller.

Notes for Assembly:

Where mechanical means, such as a backhoe, are used, the assembly effort should not be applied directly to the edge of the pipe. A two by four or a plank should be placed between the backhoe bucket and the edge of the pipe. The use of a backhoe bucket has the disadvantage that the backhoe operator is unable to see clearly when the assembly is complete. Thus, a helper should be located near the joint to signal when the assembly is complete.

NOTE: Factory-made assembly lines on the pipe do not indicate correct assembly to fittings.

OVER-ASSEMBLY OF THE JOINT COULD DAMAGE THE BELL OF THIS OR ADJACENT PIPE LENGTHS. MAKE SURE THAT PREVIOUSLY ASSEMBLED JOINTS REMAIN UNDISTURBED.

If resistance is felt to the assembly, it may mean that the sealing gasket has somehow become dislodged. If so, the joint should be disassembled, cleaned, and reconstructed in accordance with the methods given above.

Pressure Pipe

Nominal Size	Insertion Depth (in.)
2″	3.5
2-1/2″	3.75
3″	4.25
4″	5
6″	5
8″	6.75

Handling & Installation Procedures

Additional Handling and Storage Considerations

PVC is a strong, lightweight material, about one fifth the weight of steel or cast iron. Piping made of this material is easily handled and, as a result, there is a tendency for them to be thrown about on the jobsite. Care should be taken in handling and storage to prevent damage to the pipe.

PVC pipe should be given adequate support at all times. It should not be stacked in large piles, especially in warm temperature conditions, as bottom pipe may become distorted and joining will become difficult.

For long-term storage, pipe racks should be used, providing continuous support along the length. If this is not possible, timber supports of at least 3" bearing width, at spacings not greater than 3' centers, should be placed beneath the piping. If the stacks are rectangular, twice the spacing at the sides is required. Pipe should not be stored more than seven layers high in racks. If different classes of pipe are kept in the same rack, pipe with the thickest walls should always be at the bottom. Sharp corners on metal racks should be avoided.

For temporary storage in the field when racks are not provided, care should be taken that the ground is level and free of sharp objects (i.e. loose stones, etc.). Pipe should be stacked to reduce movement, but should not exceed three to four layers high.

Most pipe is now supplied in crates. Care should be taken when unloading the crates; avoid using metal slings or wire ropes. Crates may be stacked four high in the field. The above recommendations are for a temperature of approximately 80°F (27°C). Stack heights should be reduced if higher temperatures are encountered, or if pipe is nested (i.e. pipe stored inside pipe of a larger diameter). Reduction in height should be proportional to the total weight of the nested pipe, compared with the weight of pipe normally contained in such racks.

Since the soundness of any joint depends on the condition of the pipe end, care should be taken in transit, handling and storage to avoid damage to these ends. The impact resistance and flexibility of PVC pipe is reduced by lower temperature conditions. The impact strength for both types of piping materials will decrease as temperatures approach 32°F (0°C) and below. Care should be taken when unloading and handling pipe in cold weather. Dropping pipe from a truck or forklift may cause damage. Methods and techniques normally used in warm weather may not be acceptable at the lower temperature range.

When loading pipe onto vehicles, care should be taken to avoid contact with any sharp corners (i.e. angle irons, nail heads, etc.), as the pipe may be damaged.

While in transit, pipe should be well secured and supported over the entire length and should never project unsecured from the back of a trailer.

Larger pipe may be off-loaded from vehicles by rolling them gently down timbers, ensuring that they do not fall onto one another or onto a hard, uneven surface.

Prolonged Outdoor Exposure

Prolonged exposure of PVC pipe to the direct rays of the sun will not damage the pipe. However, some mild discoloration may take place in the form of a milky film on the exposed surfaces. This change in color merely indicates that there has been a harmless chemical transformation at the surface of the pipe. A small reduction in impact strength could occur at the discolored surfaces but they are of a very small order and are not enough to cause problems in field installation.

Protection – Covering

Discoloration of the pipe can be avoided by shading it from the direct rays of the sun. This can be accomplished by covering the stockpile or the crated pipe with a light colored opaque material such as canvas. If the pipe is covered, always allow for the circulation of air through the pipe to avoid heat buildup in hot summer weather. Make sure that the pipe is not stored close to sources of heat such as boilers, steam lines, engine exhaust outlets, etc.

Handling & Installation Procedures

System Acceptance (Hydrostatic Pressure) Test

After the system has been installed, it is important to test and inspect it for joint integrity. Leave all concealed pipe and fittings uncovered until the required test is completed and approved by the local Authority Having Jurisdiction.

Generally, a test pressure of 1.5 times the system working pressure for the pipe installed is adequate. It is recommended that hydrostatic testing be carried out before commissioning the line into usage. The following hydrostatic test procedure should be followed after all the solvent welded joints, in the section to be tested, have been allowed to cure fully (see tables in Average Joint and Cure Schedule).

Merely filling the pipeline with city pressure will impose some stresses on the pipe and its appurtenances. Here is a checklist to run through before filling the line.

1. Has enough backfill material been placed over the pipe to prevent its movement during test? A minimum of 1-1/2 pipe diameters is recommended.
2. Has provision been made to permit the escape of air from the upper reaches of the pipeline as it is being filled?
3. If the line is not completed, has an adequate means of blocking the test cap or plug been made?

Pressure testing with compressed air is strictly prohibited with PVC.

Prior to testing, precautions must be taken to protect personnel and property in case of test failure.

WARNING

- **NEVER** use compressed air or gas in PVC pipe.
- **NEVER** use or test PVC with compressed air or other gases. Do not use air-over-water boosters. **Use of compressed air or gas in PVC pipe can result in explosive failures and cause severe injury or death.**

Hydrostatic Test Procedure

1. Where possible, visually inspect the installed piping for evidence of physical damage or deficiencies.
2. Split the system into convenient test sections, not exceeding 1,000 feet.
3. Slowly fill the pipe section with water, preferably at a velocity of 1.0 ft/s or less. Any entrapped air must be evacuated by venting from the high points. Do not pressurize at this stage.
4. Leave the section for at least 1 hour to allow equilibrium temperature to be achieved.
5. Check the system for leaks. If clear, check for and remove any remaining air and increase pressure up to 50 psi (345 kPa). Do not pressurize further at this stage.
6. Leave the section pressurized for 10 minutes. If the pressure drops, inspect for leaks. If the pressure remains constant, slowly increase the hydrostatic pressure to 1.5 times the system working pressure but do not exceed the maximum working pressure of any system components.
7. Leave the section pressurized for a period not exceeding 1 hour. During this time, the pressure should not change if the test is successful. If there is a significant drop in static pressure or extended times are required to achieve pressure, either joint leakage has occurred or air remains in the line. Inspect for leakage and if none is apparent, reduce the pressure and check for trapped air. All air must be removed before further testing.
8. Any joint leaks should be repaired and allowed to cure fully before re-pressurizing and testing.

NOTICE

Do not exceed the maximum working pressure of any system components including pipe, fittings, valves, threaded adapters, unions, maintenance couplings or flanges.

- The pressure rating of all components must be reduced when operating temperatures exceed 73°F.
- Exceeding the maximum working temperature or pressure of the system may result in system failure and/or property damage.

PVC Agriculture Irrigation Pipe

Submittal Data Sheet

Specifications

PVC Agriculture Irrigation Pipe

Scope

This specification sheet covers the manufacturers' requirements for PVC SDR 41, & SDR 32.5 Agriculture Irrigation pipe. The pipe meets or exceeds all applicable ASTM standards and is suitable for use in lower pressure agricultural irrigation systems.

Materials

Rigid PVC (polyvinyl chloride) used in the extrusion of SDR 41, & SDR 32.5 Agriculture Irrigation pipe complies with the material requirements of ASTM D1784 (formerly Type 1, Grade 1) and has a cell classification of 12454. Raw material used in the extrusion shall contain the standard specified amounts of color pigment, stabilizers and other additives.

Elastomeric gaskets provided with PVC Agriculture Irrigation pipe conforms to ASTM F477.

Dimensions

Physical dimensions and properties of SDR 41 & 32.5 PVC Agriculture Irrigation pipe shall meet the requirements of ASTM D2241.

Marking

PVC Agriculture Irrigation pipe is marked as prescribed in ASTM D2241. The marking includes the following: Nominal size, AG PIPE PVC-1120, SDR size and pressure rating, ASTM standard.

About the IPEX Group of Companies

As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the world's largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical
- Telecommunications and utility
- Industrial process piping
- Municipal pressure and gravity flow
- Plumbing and DWV and water supply
- Irrigation
- Electrofusion PE for gas and water
- Industrial, plumbing and electrical cements
- PVC, CPVC, PVCO, ABS, PE, PEX, PP and PVDF pipe and fittings