



Industrial Grade Cements & Primers Specification Guide



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Introduction





Cements for Industrial Environments

Industrial environments are very demanding, particularly with respect to the life expectancy of the systems' connections.

Industrial systems can be defined as follows:

- **Process systems**

Closed, pressurized systems composed of pipes, valves, fittings (PVFs), pump(s) and storage tanks

- **Drainage systems**

Gravity fed piping systems for the evacuation of spent process media

The need to withstand the following mechanical, thermal and chemical stresses in PVC and CPVC plastic piping systems necessitates greater joint strength than is possible with non-industrial cements:

Mechanical stresses – Vibration, water hammer, bending load, etc.

Thermal stresses – Temperature variation, hot or chilled media causing expansion and contraction of joints. Every degree higher in temperature results in decreased hoop strength (ability to hold pressure) of the piping systems.

Chemical stresses – Loss of tensile strength due to the interaction with the polymer of corrosive chemicals circulating through piping systems.

Industrial systems utilize expensive, high-performing components. Achieving a high performing, fail safe bond using the right solvent cement and primer is the only way to guarantee the integrity of the system, ensuring that the joint has the same life expectancy, pressure rating and safety factor as the piping components being installed. Choosing and expertly applying the right industrial solvent cement and primer is critical to the long-term performance of an industrial piping system.

The best industrial grade cements produced by Weld-On® are specially formulated to withstand the stresses detailed above. These cements are unique and proprietary technical solutions. They contain large amounts of the most effective solvents and the highest quality resins. Some are new **earth friendly**, patented formulations based on revolutionary technology developed by Weld-On. Any and all of these cements when used in conjunction with Weld-On's industrial primers produce the strongest fusion-bond in the contact area between pipe and fitting. This results in:

- A longer lasting, higher performing, more reliable joint
- Assurance that the life expectancy of the solvent weld matches that of the pipe and fittings
- Connections offering the same safety factor of pipe and fittings
- Maintenance free operation
- Increased productivity
- Reduced down-time
- No need for post joining procedures (e.g. stick welding around the mouth of the fitting)





WELD-ON® Industrial Grade Cements

WELD-ON has a proven track record with over 60 years of worldwide experience in the development of cements and primers for the industrial markets. In fact, we helped define most of the performance parameters and installation techniques followed by all cement manufacturers today. Using WELD-ON products gives you the confidence that your installed piping systems will withstand the rigors of industrial applications over time.

WELD-ON industrial cements are formulated specifically to meet the needs of the industrial customer, covering a wide variety of industrial, utility, specialty, and hi-tech manufacturing applications, including water treatment, metal finishing, pulp & paper, pharmaceutical, mining, semiconductor, chemical processing, corrosive fumes ducting, double-containment and general service. (See Weld-On Industrial/Commercial Applications Chart in this guide.)

High performing, Low VOC cements and primers for all needs

- WELD-ON has the right product for every job, including a variety of medium, heavy, and extra heavy bodied cements and primers for use with all classes of PVC pipe and fittings up to 30" diameter and CPVC pipe up to 24". All are formulated, as well as lab and field tested to provide the greatest penetration and the strongest, longest-lasting joints to help you avoid downtime and costly system repairs.
- All WELD-ON products have low emissions, meeting the most stringent Low VOC guidelines per SCAQMD 1168/316A, also adopted by LEED®.
- WELD-ON products meet, and more importantly, exceed ASTM performance standards, as well as the most stringent quality and testing requirements.

State-of-the-art equipment, manufacturing techniques and quality control procedures

- Advanced automated filling and packaging lines of WELD-ON products ensure fast, efficient and accurate completion of product orders. More importantly it guarantees absolute consistency of all Weld-On product quality and performance.
- Our California facility is ISO 9001: 2008 certified for its excellent quality management system. Our products are manufactured to the highest standards available and face stringent quality control tests (from raw materials to finished product) prior to sales and distribution.





- Our laboratory is equipped with state-of-the-art equipment to ensure that formulations and product performance meet the most rigorous quality and performance standards. We retain samples of every batch manufactured for the entire shelf life of the product, so that we can verify the quality of every can of cement out in the field.
- We take great pride in our efforts to be environmentally responsible. Two regenerative thermo oxidizers are utilized in our California facility to eliminate 99% of the volatile organic compound (VOC) emissions from our exhaust system before emitting air into the atmosphere.

Comprehensive Training

- WELD-ON® is the first company that trains and qualifies installers to the stringent requirements of the ASME B31.3 standard. This requirement is present in many specifications, and requires that every installer make a pipe joint that passes a pressure-test. WELD-ON provides the training and the pressure-testing free-of-charge.
- WELD-ON offers superior technical expertise provided by technically knowledgeable customer service agents and tech service experts. This includes product application and job site installation training for customers to ensure selection of the best product and correct installation procedures for every application.
- Pipe joint installation seminars are routinely provided.

Superior After Sales Support and Customer Service

- WELD-ON provides troubleshooting assistance. Should any joint not meet our high quality standards, WELD-ON's highly experienced technical support group will assist any customer in assessing the problems and finding solutions.
- WELD-ON customers can benefit from our state-of-the-art testing facility where technical experts specialize in the evaluation and determination of the root cause of system leaks in industrial applications.
- WELD-ON is the only manufacturer to offer FREE joint failure analysis.
- Comprehensive technical assistance is provided to all our customers by a manned, not pre-recorded, technical hotline (1-877-477-8327).





Weld-On® Cement and Applicator Selection Guide



WELD-ON® CEMENT SELECTION GUIDE

For assistance in selecting the right Weld-On Industrial products for your application, please refer to the selection guide below.

NOMINAL PIPE SIZE		in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10	12	14	24	30
		mm	20	25	32	40	50	63	75	90	110	160	200	250	315	355	600	800
CPVC SYSTEMS	GRAY	729™	[Bar chart showing application ranges for 729™ Gray CPVC]															
	ORANGE	724™*	[Bar chart showing application ranges for 724™ Orange CPVC]															
PVC SYSTEMS	EXTRA HEAVY BODY	GRAY	[Bar chart showing application ranges for 719™ Gray Extra Heavy Body PVC]															
	HEAVY BODY	GRAY	[Bar chart showing application ranges for 711™ Gray Heavy Body PVC]															
	MEDIUM BODY	CLEAR	[Bar chart showing application ranges for 705™ Clear Medium Body PVC]															
	MEDIUM BODY	GRAY	[Bar chart showing application ranges for 705™ Gray Medium Body PVC]															
NOMINAL PIPE SIZE		in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10	12	14	24	30
		mm	20	25	32	40	50	63	75	90	110	160	200	250	315	355	600	800

PIPE FORMAT

Schedule 40, PN3.2, PN4, PN6

Schedule 80, PN10, PN16

* For CPVC and PVC Chemical Piping Systems



WELD-ON APPLICATOR SELECTION GUIDE

Weld-On solvent cements are packaged with can-lid daubers: 3/4" dauber on quarter pint and half pint cans and 1 1/2" dauber on pint and quart cans.

For proper solvent welding of pipe and fittings, the cement applicator **must** be no less than half the size of the pipe. See the following charts for applicator (daubers, swabs, and rollers) recommendations pertaining to pipe size.

DAUBERS	3/4" Pipe	1" Pipe	1 1/4" Pipe	1 1/2" Pipe	2" Pipe
1/2" Dauber	•	•			
3/4" Dauber			•	•	
1 1/2" Dauber					•

ROLLERS & SWABS	SIZE	FOR PIPE DIAMETERS
3020	3" Roller	3"-6"
6020	4" Roller	3"-8"
7020	7" Roller	6" +
4020	4" Swab	6" +
5020	4" Swab	3"-8"
8020	4" Swab	6" +
SuperSwab™	4" Swab	4" - 8"

WELD-ON®

Weld-On® Industrial Product Line



705™ PVC

MEDIUM BODIED

Product Description:

- Medium bodied, fast setting clear or gray Low VOC PVC cement for all classes and schedules through 6" diameter interference fit, Sch. 80 through 4" diameter.
- Can be used without primer on non-pressure systems if local codes permit.
- 3 year shelf life.

Industry Listing:



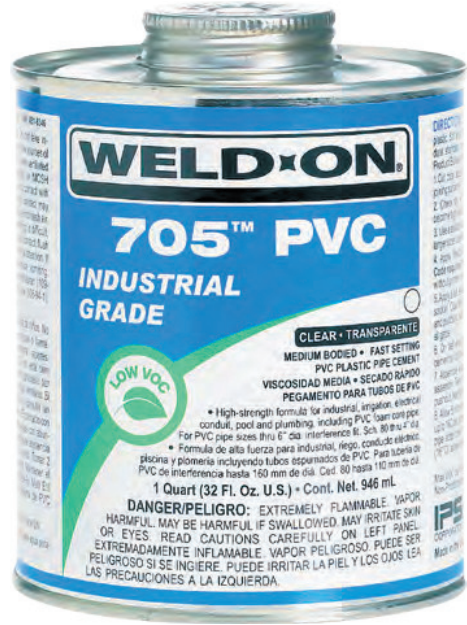
PW-G/DWV/
SW



PW-G/DWV/SW
(Gray Only)



(Gray Only)



Performance Specifications:

Meets and exceeds: ASTM D 2564 NSF/ANSI 14 NSF/ANSI 61 CSA B137.3 CSA B181.2

Color	Stock Number	Size	Units/Case	LBS./Case
	10085	Gal	6	52
	10089	Qt	12	27
	10093	Pt	12	14
	10097	½ Pt	24	15
	10100	¼ Pt	24	8

Color	Stock Number	Size	Units/Case	LBS./Case
	10086	Gal	6	52
	10090	Qt	12	27
	10094	Pt	12	14
	10098	½ Pt	24	15
	10101	¼ Pt	24	8

711™ PVC

HEAVY BODIED

Product Description:

- Heavy bodied, medium setting gray Low VOC PVC cement for all classes and schedules with interference fit through 12" diameter.
- Excellent gap filling properties.
- Medium set allows for more working time in warm weather.
- 3 year shelf life.




Industry Listing:



C US
PW-G/DWW/SW

Performance Specifications:

Meets and exceeds: ASTM D 2564 NSF/ANSI 14 NSF/ANSI 61 CSA B137.3 CSA B181.2

Color	Stock Number	Size	Units/Case	LBS./Case
	10117	Gal	6	54
	10119	Qt	12	28
	10121	Pt	12	14
	10123	½ Pt	24	15

719™ PVC

EXTRA HEAVY BODIED

Product Description:

- Extra heavy-bodied, slow setting white or gray Low VOC PVC cement for all classes and schedules with interference fit through 30" diameter.
- Ideal for fabrication of large fittings and applications requiring high gap filling properties.
- 3 year shelf life.

Industry Listing:



PW-G/DWV/
SW



PW-G/DWV/SW
(Gray Only)



Performance Specifications:

Meets and exceeds: ASTM D 2564 NSF/ANSI 14 NSF/ANSI 61 CSA B137.3 CSA B181.2

Color	Stock Number	Size	Units/Case	LBS./Case
	13078	Gal	6	56
	10156	Qt	12	29

Color	Stock Number	Size	Units/Case	LBS./Case
	10155	Gal	4	37
	10157	Qt	12	29
	10159	Pt	12	15
	12658	10.3 Oz.	24	21

724™ CPVC and PVC

HEAVY BODIED

Product Description:

- Heavy bodied, medium setting orange or gray Low VOC CPVC cement for all classes and schedules with interference fit through 12" diameter.
- Professional grade, high-strength, **chemical-resistant** solvent cement for use with CPVC and PVC piping systems carrying acids, bases, salts, and hypochlorites.
- Approved for use on Corzan® CPVC piping systems.
- 2 year shelf life.

Industry Listing:



PW-G/DWV/SW



Performance Specifications:

Meets and exceeds: ASTM F 493 NSF/ANSI 14 NSF/ANSI 61

Color	Stock Number	Size	Units/Case	LBS./Case
	12233	Gal	6	56
	11659	Qt	12	29
	11890	Pt	12	15

Color	Stock Number	Size	Units/Case	LBS./Case
	12817	Gal	6	56
	12818	Qt	12	29
	13531	Pt	12	15

729™ CPVC

EXTRA HEAVY BODIED

Product Description:

- Extra heavy bodied, slow setting gray Low VOC CPVC cement for all classes and schedules of industrial piping and duct with interference fit through 24" diameter.
- Ideal for applications requiring high gap filling properties and for fabrication of large sized fittings.
- May be used for chemical applications.*
- 2 year shelf life.



Performance Specifications:

Meets and exceeds: ASTM F 493

Color	Stock Number	Size	Units/Case	LBS./Case
GRAY	10844	Gal	4	37
	10845	Qt	12	29

*It is the installer's responsibility to test and verify chemical compatibility prior to use.

P-70™ PRIMER

Product Description:

- Professional grade, industrial strength primer essential for proper softening and preparation of PVC and CPVC pipe and fitting surfaces.
- Specially recommended for use on Schedule 80 (PN 10 and higher) and large size pipe.
- Excellent, even in cold weather applications.
- 3 year shelf life.

Industry Listing:



(Purple Only) PW-G/DWW/SW



Performance Specifications:

Meets and exceeds: ASTM F 656 NSF/ANSI 14 NSF/ANSI 61

Color	Stock Number	Size	Units/Case	LBS./Case
	10220	Gal	6	49
	10222	Qt	12	26
	10224	Pt	12	13
	10226	½ Pt	24	14
	10228	¼ Pt	24	7

Color	Stock Number	Size	Units/Case	LBS./Case
	10221	Gal	6	49
	10223	Qt	12	26
	10225	Pt	12	13
	10227	½ Pt	24	14
	10229	¼ Pt	24	7

BLUE SEAL™

INDUSTRIAL GRADE THREAD SEALANT

Product Description:

- Heavy duty, grit-free formula. Excellent for industrial applications and pipe lines in high vibration environments.
- Contains finely homogenized PTFE particles for filling cracks and thread imperfections – ensuring a leak-proof seal.
- For sealing and lubricating all metal and plastic (ABS, PVC, CPVC, Polypropylene & Nylon) piping systems carrying various materials, including air and gasses (compressed, manufactured, or natural), ammonia, brine, acid (diluted), caustic alkalis (diluted), corrosives, freons, fuel (diesel, gasoline, jet fuel, and kerosene), oils, petroleum, propane, solvents, steam, sugar, and water. Not recommended for oxygen, fluorine or liquid sodium systems.
- Applicable for pipe pressure rating: liquid up to 10,000 PSI and gas up to 3,000 PSI.
- Contains no VOCs.
- 3 year shelf life.



Industry Listing:



PW/DWV/SW

Color	Stock Number	Size	Units/Case	LBS./Case
	87695	Qt	12	38
	87690	Pt	12	22
	87685	½ Pt	24	20

845™ ADHESIVE

FOR INDUSTRIAL BONDING OF METALS AND PLASTICS

Product Description:

- High viscosity, two-component, high strength reactive adhesive.
- Withstands very high pressure over a large temperature range (-30°F/-35°C to 140°F/60°C). Impact resistant and can be used in wet conditions.
- Excellent gap-filling properties. Ideal for fabricating fittings and joining saddles to pipe. Excellent for bonding large diameter PVC and CPVC pipe and fittings. Perfect for small leak repairs.
- Conveniently packaged in a dual cylinder cartridge for easy dispensing and application to the bonding surfaces.
- Applicable for use with PVC, CPVC, ABS, Fiberglass, Acrylic, FRP (fiberglass-reinforced polyester), and Concrete.
- 1 year shelf life.



Description	Stock Number	Size	Units/Case	LBS./Case
845 cartridge	14094	43mL	4	2
845 cartridge	12709	43mL	12	2
845 cartridge	12759	400 mL	4	7
845SK - Starter Kit	12711	2 - 43 mL cartridges 1 - dispensing gun 6 - mixing tips	4	4
845 Manual Dispensing Gun for 43mL cartridge	12471	---	1	1
845 Mixing Tip for 43 mL cartridge	14077	bag	12 / bag	<1
845 Manual Dispensing Gun for 400 mL cartridge	14151	---	1	4
845 Metal Frame Manual Dispensing Gun for 400mL cartridge	14152	---	1	4
845 Mixing Tip for 400 mL cartridge	14040	bag	10/ bag	<1

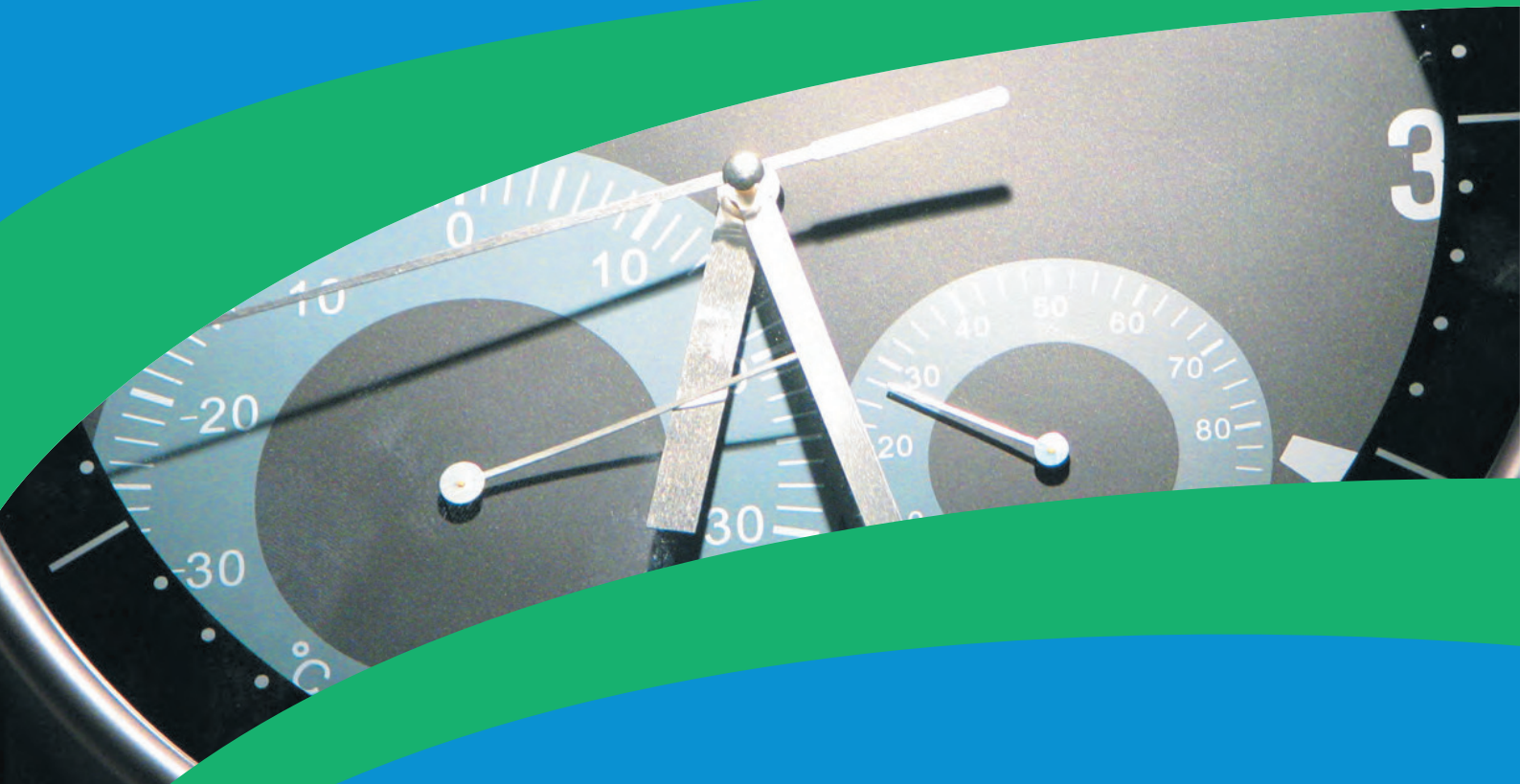
Not for potable water applications

APPLICATORS AND ACCESSORIES

PIPE AND FITTING PULLER	DESCRIPTION	STOCK NUMBER	SIZE	UNITS/CASE	LBS./CASE
	P-0412 PIPE AND FITTING PULLER	12816	4" to 12"	1	40
	P-1420 PIPE AND FITTING PULLER	12815	14" to 20"	1	70
SUPERDAUBER™	DESCRIPTION	STOCK NUMBER	SIZE	UNITS/CASE	LBS./CASE
	SUPERDAUBER™ 75 DAUBER - adjustable length	10832	¾"	50	2
	SUPERDAUBER™ 150 DAUBER - adjustable length	10833	1¼"	50	2
CAP DAUBERS	DESCRIPTION	STOCK NUMBER	SIZE	UNITS/CASE	LBS./CASE
 Note: DP fits ½ pint and pint cans DQ fits quart cans	DP-50 DAUBER - ½" for pipe diameter up to 1"	10003	½"	50	1.5
	DP-75 DAUBER - ¾" for pipe diameter up to 1½"	10004	¾"	50	1.5
	DP-150 DAUBER - 1½" for pipe diameter up to 3"	10005	1½"	50	1.5
	DQ-50 DAUBER - ½" for pipe diameter up to 1"	11831	½"	50	1.5
	DQ-75 DAUBER - ¾" for pipe diameter up to 1½"	12429	¾"	50	1.5
	DQ-150 DAUBER - 1½" for pipe diameter up to 3"	10006	1½"	50	1.7
BRUSHES	DESCRIPTION	STOCK NUMBER	SIZE	UNITS/CASE	LBS./CASE
	PB-1 PLASTIC HANDLE BRUSH	12121	1"	25	3
	CM BCP CAN MATE™ PLASTIC HANDLE BRUSH	10963	1"	25	2
ROLLERS AND SWABS	DESCRIPTION	STOCK NUMBER	SIZE	UNITS/CASE	LBS./CASE
	3020 ROLLER - for pipe 3" - 6"	10007	3"	24	6
	6020 ROLLER - for pipe 3" - 8"	11957	4"	24	4
	7020 ROLLER - for pipe 6"+	10008	7"	20	7
	4020 SWAB - for pipe 6"+	10009	4"	24	5
	5020 SWAB - for pipe 3" - 8"	12071	4"	24	4
	8020 SWAB - for pipe 6"+	13360	4"	24	6
	SuperSwab™ - for pipe 4" - 8". Adjustable length and dual thread cap design that fits quart and gallon containers. The swab tip is replaceable and swab handle is reusable.	14108 (swab and handle)	4"	12	3.5
		14111 (bulk pack)	4"	24	4
		14109 (replacement swab)	4"	3 bags (4 swabs/bag)	3.5
		14112 (replacement swab bulk pack)	4"	24	4

WELD-ON®

Weld-On® Solvent Cement Average Set and Cure Times



WELD-ON® SOLVENT CEMENT AVERAGE SET AND CURE TIMES

AVERAGE INITIAL SET SCHEDULE FOR WELD-ON® PVC/CPVC SOLVENT CEMENTS**

Temperature Range	Pipe Sizes ½" to 1¼" 20mm to 40mm	Pipe Sizes 1½" to 2" 50mm to 63mm	Pipe Sizes 2½" to 8" 75mm to 200mm	Pipe Sizes 10" to 15" 250mm to 380mm	Pipe Sizes 15"+ 380mm +
60°-100°F/16°-38°C	2 minutes	5 minutes	30 minutes	2 hours	4 hours
40°-60°F/5°-16°C	5 minutes	10 minutes	2 hours	8 hours	16 hours
0°-40°F/-18°-5°C	10 minutes	15 minutes	12 hours	24 hours	48 hours

Note - Initial set schedule is the necessary time to allow before the joint can be carefully handled. In damp or humid weather allow 50% more set time.

AVERAGE JOINT CURE SCHEDULE FOR WELD-ON PVC/CPVC SOLVENT CEMENTS**

Relative Humidity 60% or Less	Pipe Sizes ½" to 1¼" 20mm to 40mm		Pipe Sizes 1½" to 2" 50mm to 63mm		Pipe Sizes 2½" to 8" 75mm to 200mm		Pipe Sizes 10" to 15" 250mm to 380mm	Pipe Sizes 15"+ 380mm +
Temperature range during assembly and cure periods	up to 160 psi/ 11 Bar	160 to 370 psi/ 11 to 26 Bar	up to 160 psi/ 11 Bar	160 to 315 psi/ 11 to 22 Bar	up to 160 psi/ 11 Bar	160 to 315 psi/ 11 to 22 Bar	up to 100 psi/ 7 Bar	up to 100 psi/ 7 Bar
60°-100°F/16°-38°C	15 min	6 hrs	30 min	12 hrs	1½ hrs	24 hrs	48 hrs	72 hrs
40°-60°F/5°-16°C	20 min	12 hrs	45 min	24 hrs	4 hrs	48 hrs	96 hrs	6 days
0°-40°F/-18°-5°C	30 min	48 hrs	1 hour	96 hrs	72 hrs	8 days	8 days	14 days

Note - Joint cure schedule is the necessary time to allow before pressurizing system. In damp or humid weather allow 50% more cure time.

** These figures are estimates based on testing done under laboratory conditions. Field working conditions can vary significantly. This chart should be used as a general reference only.

AVERAGE NUMBER OF JOINTS/QUART (1 Kg) OF WELD-ON CEMENT*

Pipe Diameters	½" 20mm	¾" 25mm	1" 32mm	1½" 50mm	2" 63mm	3" 90mm	4" 110mm	6" 160mm	8" 200mm	10" 250mm	12" 315mm	15" 380mm	18" 450mm
Number of Joints	300	200	125	90	60	40	30	10	5	2-3	1-2	¾	½

Note - For Primer: Double the number of joints shown for cement.

* These figures are estimates based on our laboratory tests. Due to the many variables in the field, these figures should be used as a general guide only. **Note: 1 Joint = 1 Socket**

PIPE SIZE EQUIVALENT CHART - INCHES/MILLIMETERS

in.	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	6"	8"	10"	12"	14"	18"	24"	30"
mm.	20	25	32	40	50	63	75	90	110	160	200	250	315	355	450	600	800

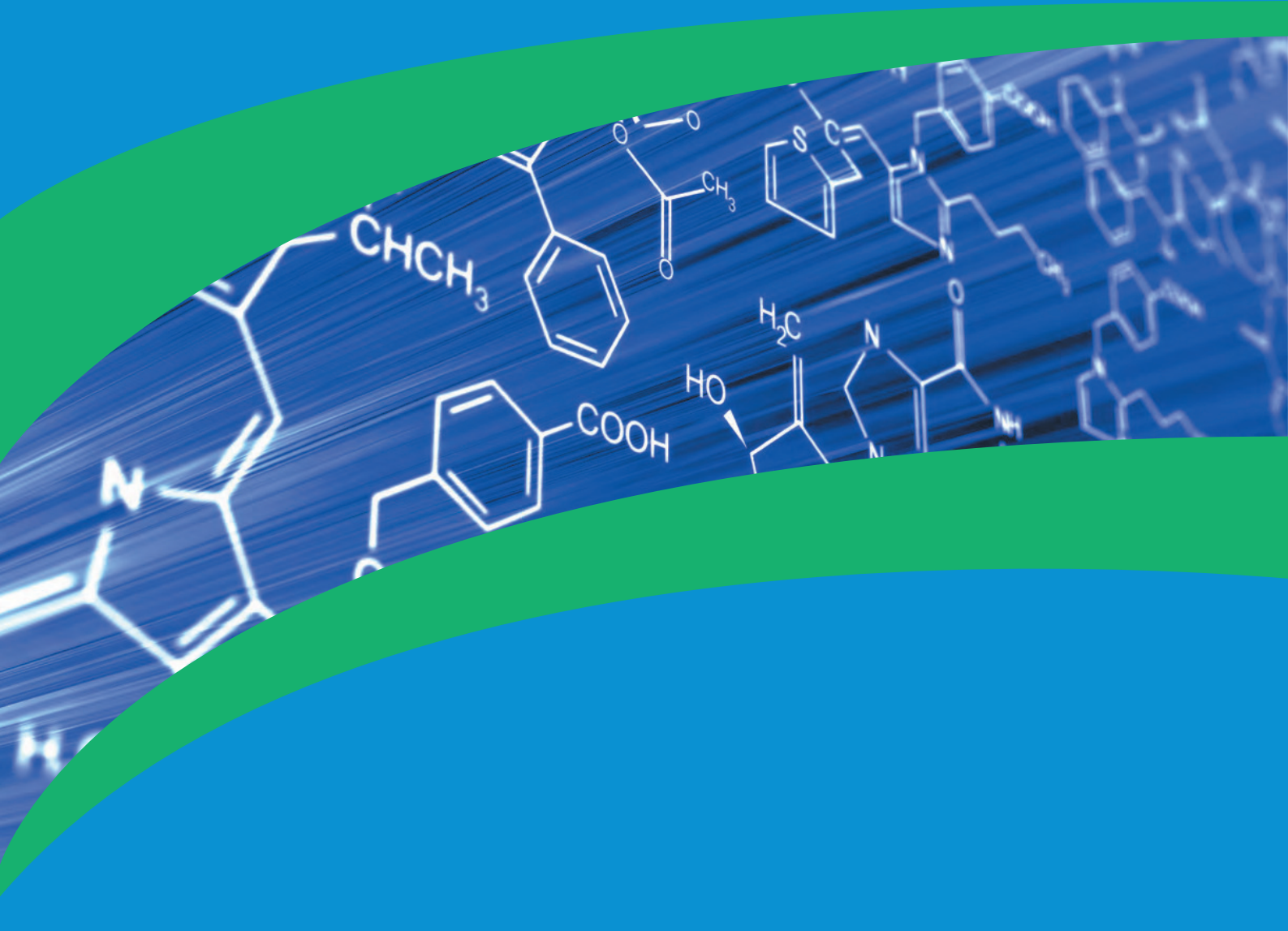
PRODUCT SHELF LIFE	
Weld-On Products	Shelf-life
Primers / Cleaners	3 years
PVC Solvent Cement	3 years
CPVC Solvent Cement	2 years

FAHRENHEIT TO CELSIUS CONVERSION CHART	
C.	40 30 20 10 0 -10
F.	100 90 80 70 60 50 40 30 20 10 0

Download "Weld-On Toolbox" mobile application (iPhone or Android version) for a FREE collection of Weld-On tools and resources. Internet connection or carrier data plan required to download.



Chemical Resistance Data



WELD-ON® 724™ CHEMICAL RESISTANCE DATA

Specifically formulated for joining CPVC and PVC industrial piping systems carrying corrosive chemicals, Weld-On 724™ is the most chemical resistant CPVC solvent cement in the industry; not only is it the original but is also the industry standard. Independent laboratory analysis showed no joint failure even after 2,500 hours of pressure testing in numerous chemical solutions.

This chart applies only to 724™. Be sure to take into consideration the specific use conditions that will apply to your project. There will be variables that will affect the chemical resistance such as: temperature, pressure, chemical concentration, and external stresses that may exist in the design and construction of the system.

Because of the wide variety and numerous use conditions that are found in the process chemical industry, the final decision to use thermoplastic piping should be based on in-service testing and evaluation by the responsible engineer and end-user.

The use of P-70™ Purple Primer is recommended when installing CPVC and PVC piping systems for chemical applications.

724™ SOLVENT CEMENT CPVC CHART

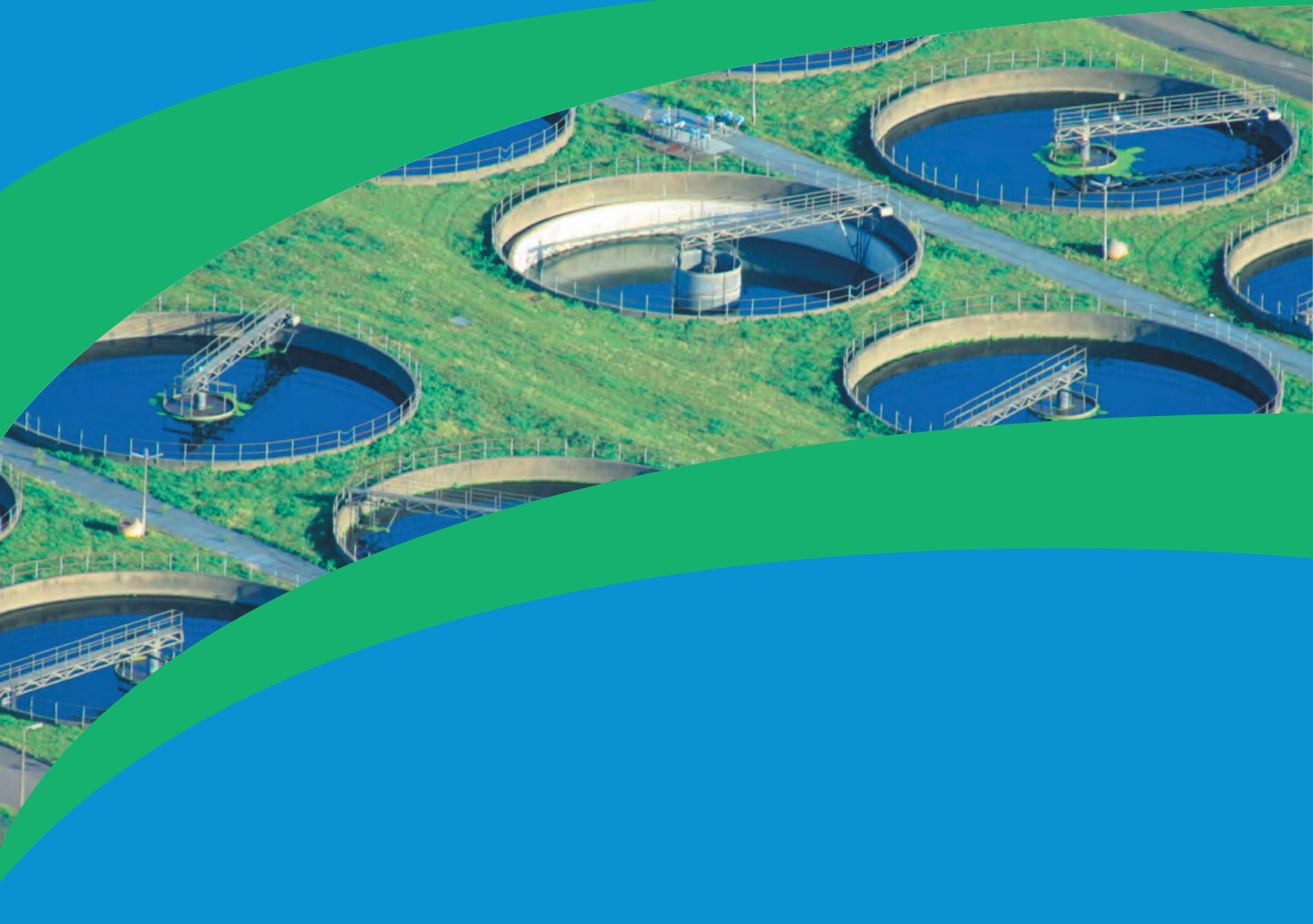
CPVC @ 180° F (82° C)		Hydrostatic Pressure – 100 PSI		Test Duration – 2,500 Hours	
CHEMICAL	CONCENTRATION	TEMPERATURE °F (°C)	PRESSURE PSI (BARS)	HYDROSTATIC TESTING	
Acetic Acid	CH ₃ COOH	20%	180 (82)	100 (7)	No Failure
Chromic Acid	H ₂ CrO ₄	40%	180 (82)	100 (7)	No Failure
Ethylene Glycol	HOCH ₂ CH ₂ OH	50%	180 (82)	100 (7)	No Failure
Hydrochloric Acid	HCl	37%	180 (82)	100 (7)	No Failure
Nitric Acid	HNO ₃	35%	180 (82)	100 (7)	No Failure
Phosphoric Acid	H ₃ PO ₄	85%	180 (82)	100 (7)	No Failure
Propylene Glycol	CH ₃ CHOHCH ₂ OH	25%	180 (82)	100 (7)	No Failure
Sodium Hydroxide	NaOH	50%	180 (82)	100 (7)	No Failure
Sodium Hypochlorite (Bleach)	NaOCl	Fresh chemical added twice weekly	180 (82)	100 (7)	No Failure
Sulfuric Acid	H ₂ SO ₄	80%	180 (82)	100 (7)	No Failure
Water, distilled	H ₂ O	—	180 (82)	100 (7)	No Failure

724™ SOLVENT CEMENT PVC CHART

PVC @ 140° F (60° C)		Hydrostatic Pressure – 100 PSI		Test Duration – 2,500 Hours	
CHEMICAL	CONCENTRATION	TEMPERATURE °F (°C)	PRESSURE PSI (BARS)	HYDROSTATIC TESTING	
Acetic Acid	CH ₃ COOH	20%	140 (60)	100 (7)	No Failure
Chromic Acid	H ₂ CrO ₄	40%	140 (60)	100 (7)	No Failure
Ethylene Glycol	HOCH ₂ CH ₂ OH	100%	140 (60)	100 (7)	No Failure
Hydrochloric Acid	HCl	37%	140 (60)	100 (7)	No Failure
Nitric Acid	HNO ₃	35%	140 (60)	100 (7)	No Failure
Phosphoric Acid	H ₃ PO ₄	85%	140 (60)	100 (7)	No Failure
Propylene Glycol	CH ₃ CHOHCH ₂ OH	100%	140 (60)	100 (7)	No Failure
Sodium Hydroxide	NaOH	50%	140 (60)	100 (7)	No Failure
Sodium Hypochlorite (Bleach)	NaOCl	Fresh chemical added twice weekly	140 (60)	100 (7)	No Failure
Sulfuric Acid	H ₂ SO ₄	90%	140 (60)	100 (7)	No Failure
Water, distilled	H ₂ O	—	140 (60)	100 (7)	No Failure
Ammonium Hydroxide	NH ₄ OH	10%	140 (60)	100 (7)	No Failure

WELD-ON®

**Weld-On®
Industrial/Commercial
Applications Chart**



WELD-ON® INDUSTRIAL/COMMERCIAL APPLICATIONS CHART

Weld-On PVC and CPVC cement is used frequently in the following industrial applications.

INDUSTRY GROUP	SUB-CATEGORIES	PIPE MATERIAL/PROCESS	WELD-ON® CEMENT Product Number (Maximum Pipe Diameter)	PRIMER
Manufacturing	Air Pollution Control Plant	CPVC/steam condensate	724 (up to 12")	P-70
		PVC/mainly water distribution	705 (up to 4"), 711 (up to 12")	P-70
		PVC/drainage	705 (up to 4"), 711 (up to 12")	P-68
	Automotive Industry	PVC/NaOH, H ₂ SO ₄ , CaSO ₄ & water	724 (up to 12")	P-70
	Battery Production (NiCad & Alkali)	CPVC/strong acids & acid by-products	724 (up to 12")	P-70
		PVC/distilled water, CPVC/duct vapors	705 (up to 4"), 711 (up to 12"), 729 (up to 24")	P-70
	Electrolytic Plating	PVC & CPVC/strong acids, alkali	724 (up to 12")	P-70
		PVC/water	705 (up to 4"), 711 (up to 12"), 719 (up to 30")	P-70
		CPVC/hot H ₂ SO ₄ distribution to cathode/anode baths for Cu recovery	705 (up to 6"), 711 (up to 12"), 719 (up to 30"), 729 (up to 24")	P-70
	Inorganic Chemical Production	PVC & CPVC/dilute acids & NaOH	724 (up to 12")	P-70
		PVC/salts & water	705 (up to 4"), 711 (up to 12")	P-68
	Plastic Products Conversion	PVC/chill water distribution	705 (up to 4"), 711 (up to 12")	P-70
		PVC & CPVC/acids, alkalis & salts	724 (up to 12")	P-70
	Printed Circuit Boards	PVC & CPVC/pre-paint metal surface cleaning, weak alkalis	724 (up to 12")	P-70
		PVC/waste water, CPVC/duct vapors	705 (up to 4"), 711 (up to 12"), 729 (up to 24")	P-68
	Printing & Photography	PVC/mainly dilute acetic acids & residual salts & water	724 (up to 12")	P-70
		PVC/ink	705 (up to 4"), 711 (up to 12")	P-70
	Pulp & Paper	PVC & CPVC/White Liquor (NaOH, Na ₂ S), Green Liquor (Na ₂ CO ₃ , Na ₂ SO ₄ , Na ₂ S), sulfur, CaCO ₃ , NaClO	724 (up to 12")	P-70
		PVC & CPVC/water	705 (up to 4"), 711 (up to 12"), 719 (up to 30")	P-70
		PVC & CPVC/water, CPVC duct vapors	705 (up to 6"), 711 (up to 12"), 719 (up to 30"), 729 (up to 24")	P-68
Semi-Conductor	PVC/city water to RO	705 (up to 4"), 711 (up to 12"), 719 (up to 30")	P-70	
	PVC/DI water return loop	705 (up to 4"), 711 (up to 12"), 719 (up to 30")	P-70	
		CPVC/hot DI water return loop, duct vapors	724 (up to 12"), 729 (up to 24")	P-70
Mineral Mining & Petroleum	Coal (Mining) Refining Services	PVC/dilute H ₂ SO ₄ removal, acidic water drainage & filtration	724 (up to 12")	P-70
	Mineral Refining (Copper Roll Mills)	PVC/dilute H ₂ SO ₄ removal, acidic water drainage & filtration	724 (up to 12")	P-70
	Off-shore Oil Drilling	PVC/water distribution	724 (up to 12")	P-70
	Petroleum Refining	CPVC	724 (up to 12")	P-70
PVC/water distribution		705 (up to 4"), 711 (up to 12")	P-68	
Water & Waste Water	Sewage Disposal Plant	PVC/NaOH, Cl ₂ gas, NaCl, NaClO,	705 (up to 4"), 711 (up to 12")	P-70
		PVC/water distribution	705 (up to 4"), 711 (up to 12")	P-70
		CPVC/NaOH, Cl ₂ gas, NaCl, NaClO, duct vapors	724 (up to 12"), 729 (up to 24")	P-70
	Sodium Hypochlorite Production	PVC/H ₂ O & fly ash recovery systems	705 (up to 4"), 711 (up to 12")	P-70
		CPVC/NaClO & biocides for cooling towers	724 (up to 12")	P-70
	Wastewater Treatment Plants (Both Anaerobic & Oxidation Treatment Plants)	PVC/digesting gas, chlorine gas, & sludge	705 (up to 4"), 711 (up to 12"), 719 (up to 30")	P-70
CPVC/digesting gas, chlorine gas, sludge & duct vapors		724 (up to 12"), 729 (up to 24")	P-70	

Note: P-68 is not recommended for process lines in industrial applications.

WELD ON[®]

CSI 3-Part Product Specifications



CSI 3-Part Specification for Combination of WELD-ON® Low VOC 724™ Cement and WELD-ON P-70™ Primer for CPVC and PVC Plastic Pipe

(Specifier Note: The purpose of this guide specification language is to assist the specifier in correctly specifying primer for PVC and CPVC piping (WELD-ON P-70™) and cement for CPVC plastic piping (WELD-ON 724™) for process piping applications. The specifier needs to edit the guide specifications to fit the needs of specific projects. Contact Weld-On to assist in making appropriate product selections. Throughout the guide specification, there are Specifier Notes to assist in the editing of the file.

The language provided is not adequate as a complete stand-alone specification section because it is an accessory product. Recommended section numbers and titles where this information may be appropriately included are Section 40 05 13.73 - Plastic Process Piping; Section 40 23 00 - Water Process Piping or other process piping sections. Language that the specifier may elect to include in each of the 3-Parts has been provided. Article numbering is only for navigating this document and language should be incorporated into the appropriate Article heading in the desired section.

References have been made within the text of the specification to MasterFormat 2004 Section numbers and titles; specifier needs to coordinate these numbers and titles with sections included for the specific project.

*Specifier Notes included in (italicized red text) are included to provide assistance in selecting appropriate text for inclusion in a Specification. **[Bracketed Bold Text]** indicates a selection is required. Text in the brackets may not be the only options available, but are recommended or common selections.*

PART 1— GENERAL

1.1 SECTION INCLUDES

- A. (Accessory) Low VOC Primer and Solvent Cement for Process Piping

1.2 REFERENCES

- A. ASTM International
 - 1. ASTM D 2855 Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
 - 2. ASTM F 493 Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings
 - 3. ASTM F 656 Standard Specification for Primers for use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
- B. NSF International/American National Standards Institute
 - 1. NSF/ANSI 14 Plastics Piping System Components and Related Materials
 - 2. NSF/ANSI 61 Drinking Water System Components - Health Effects
- C. SCAQMD: South Coast Air Quality Management District
 - 1. SCAQMD Rule 1168/316A: Adhesive and Sealant Applications

1.3 SUBMITTALS

(Specifier Note: DELETE Submittal Procedures paragraph when not required. Coordinate requirements with Division 01, Section 01 33 00 – Submittal Procedures.)

- A. Refer to Section **[01 33 00 Submittal Procedures]** **[insert section number and title]**.
- B. Product Data: Submit manufacturer current technical literature for each type of product, including installation instructions.
- C. LEED Submittals:
 - 1. Product Data for Credit **[IEQ 4.1]** **[EQ 4.1]**: For sealants, including printed statement of VOC content.

PART 2— PRODUCTS

(Specifier Note: Product information is proprietary to Weld-On. For Weld-On technical support, contact 877-477-8327.)

2.1 MANUFACTURER

- A. Weld-On, PO Box 379, Gardena, CA 90248-0379; 310-898-3300; www.weldon.com

Continued on back

2.2 SOLVENT CEMENTS

(Specifier Note: Product Information is proprietary to Weld-On.)

A. Primer: Basis of Design - WELD-ON® P70™

1. Characteristics:

- a. Color: **[Clear] [Purple]**
- b. Specific Gravity: 0.858 ± 0.040
- c. Complies with ASTM F 656 for use on potable water, drain, waste, vent, and sewer applications.
- d. Conforms to NSF/ANSI 61- Drinking Water System Components - Health Effects.
- e. VOC Content ≤ 550 g/l, applied as directed, per SCAQMD Rule 1168/316a

B. Cement: Basis of Design - WELD-ON CPVC 724

1. Characteristics:

- a. Color: **[Orange] [Gray]**
- b. Specific Gravity: 0.984 ± 0.040
- c. Meets Complies with ASTM F 493 for use on potable water and chemical transport applications.
- d. Conforms to NSF/ANSI 61- Drinking Water System Components - Health Effects.
- e. VOC Content ≤ 490 g/l, applied as directed, per SCAQMD Rule 1168/316a
- f. Viscosity of 1600 cP @ 73 degrees ± 2 degrees F, minimum.
- g. CPVC Resin Content: 10% minimum
- h. Cement capable of dissolving an additional 3% by weight, of CPVC 41 compound.

PART 3— EXECUTION

3.1 EXAMINATION

- A. Verify pipe to be joined is cut square and deburred. Pipe outside diameter should have a 10-15 degree chamfer, 3/32 inch from the end.
- B. Remove residue from inside and outside of pipe, pipe bell, or fitting socket. Pipe and fitting shall be free of any chemical, paint, coatings, and other residue.

3.2 SOLVENT AND PRIMER APPLICATION

- A. Comply with standard practices indicated in ASTM D 2855.
- B. Apply primer, using a swab or roller, working it into the fitting socket, keeping the surface and applicator wet, until the surface has been softened. Remove any primer puddles. Apply second coat of primer in accordance with primer manufacturer's recommendations.
- C. Apply primer to outside diameter of pipe, in same manner as fitting socket, to a depth equal to the fitting socket.
- D. While primed surfaces are wet, apply an even layer of solvent cement to primed pipe equal to the depth of the fitting socket. Apply second coat of cement in accordance with manufacturer's recommendations.
- E. Immediately after application to outside diameter surface, apply medium layer of solvent cement to fitting socket.
- F. Assemble pipe and fitting while solvent cement is still wet.
- G. Hold joint together as recommended by manufacturer.
- H. Clean excess cement from pipe including bead around socket entrance.
- I. Avoid disturbing joint during curing.

DISCLAIMER: This guide specification language has been written as an aid to the qualified specifier and design professional. The use of this information requires the sole professional judgment and expertise of the design professional to adapt the information to the specific needs for the Owner and the Project, to coordinate with their Construction Document Process, and to meet all the applicable building codes, regulations and laws.

CSI 3-Part Specification for WELD-ON® 724™ Low VOC Cement for CPVC and PVC Plastic Pipe

(Specifier Note: The purpose of this guide specification language is to assist the specifier in correctly specifying solvent cement for CPVC and PVC plastic piping (WELD-ON 724™) for process piping applications. The specifier needs to edit the guide specifications to fit the needs of specific projects. Contact Weld-On to assist in making appropriate product selections. Throughout the guide specification, there are Specifier Notes to assist in the editing of the file.

The language provided is not adequate as a complete stand-alone specification section because it is an accessory product. Recommended section numbers and titles where this information may be appropriately included are Section 40 05 13.73 - Plastic Process Piping; Section 40 23 00 - Water Process Piping or other process piping sections. Language that the specifier may elect to include in each of the 3-Parts has been provided. Article numbering is only for navigating this document and language should be incorporated into the appropriate Article heading in the desired section.

References have been made within the text of the specification to MasterFormat 2004 Section numbers and titles; specifier needs to coordinate these numbers and titles with sections included for the specific project.

Specifier Notes included in (italicized red text) are included to provide assistance in selecting appropriate text for inclusion in a Specification. [Bracketed Bold Text] indicates a selection is required. Text in the brackets may not be the only options available, but are recommended or common selections.

PART 1— GENERAL

1.1 SECTION INCLUDES

- A. (Accessory) Low VOC Solvent Cement for Process Piping

1.2 REFERENCES

- A. ASTM International
 - 1. ASTM D 2855 Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
 - 2. ASTM F 493 Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings.
- B. NSF International/American National Standards Institute
 - 1. NSF/ANSI 14 Plastics Piping System Components and Related Materials
 - 2. NSF/ANSI 61 Drinking Water System Components - Health Effects
- C. SCAQMD: South Coast Air Quality Management District
 - 1. SCAQMD Rule 1168/316A: Adhesive and Sealant Applications

1.3 SUBMITTALS

(Specifier Note: DELETE Submittal Procedures paragraph when not required, coordinate requirements with Division 01, Section 01 33 00 – Submittal Procedures.)

- A. Refer to Section **[01 33 00 Submittal Procedures]** **[insert section number and title]**.
- B. Product Data: Submit manufacturer current technical literature for each type of product, including installation instructions.
- C. LEED Submittals:
 - 1. Product Data for Credit **[IEQ 4.1]** **[EQ 4.1]**: For sealants, including printed statement of VOC content.

PART 2— PRODUCTS

(Specifier Note: Product information is proprietary to Weld-On. For Weld-On technical support, contact 877-477-8327.)

2.1 MANUFACTURER

- A. Weld-On, PO Box 379, Gardena, CA 90248-0379; 310-898-3300; www.weldon.com

Continued on back

2.2 SOLVENT CEMENT

(Specifier Note: Product Information is proprietary to Weld-On. Weld-On recommends the use of WELD-ON® P-70 primer.)

A. Basis of Design - WELD-ON CPVC 724™

1. Characteristics:

- a. Color: **[Orange] [Gray]**
- b. Specific Gravity: 0.984 ± 0.040
- c. Meets ASTM F 493 for use on potable water and chemical transport applications.
- d. Conforms to NSF/ANSI 61- Drinking Water System Components - Health Effects.
- e. VOC Content ≤ 490 g/l, applied as directed, per SCAQMD Rule 1168/316a.
- f. Viscosity of 1600 cP @ 73 degrees ± 2 degrees F, minimum.
- g. CPVC Resin Content: 10% minimum.
- h. Cement capable of dissolving an additional 3% by weight, of CPVC 41 compound.

PART 3— EXECUTION

3.1 SOLVENT CEMENT APPLICATION

(Specifier Note: Manufacturer recommends the use of appropriate primer, prior to application of solvent cement.)

- A. Comply with standard practices indicated in ASTM D 2855.
- B. Apply heavy layer of solvent cement to pipe outside diameter surface.
- C. Immediately after application to outside diameter surface, apply medium layer of solvent cement to fitting socket.
- D. Assemble pipe and fitting while solvent cement is still wet.
- E. Hold joint together as recommended by manufacturer.
- F. Clean excess cement from pipe including bead around socket entrance.
- G. Avoid disturbing joint during curing.

DISCLAIMER: This guide specification language has been written as an aid to the qualified specifier and design professional. The use of this information requires the sole professional judgment and expertise of the design professional to adapt the information to the specific needs for the Owner and the Project, to coordinate with their Construction Document Process, and to meet all the applicable building codes, regulations and laws.

CSI 3-Part Specification for WELD-ON® P-70™ Low VOC Primer for PVC and CPVC Plastic Pipe

(Specifier Note: The purpose of this guide specification language is to assist the specifier in correctly specifying primer for PVC and CPVC piping (WELD-ON P-70™) for process piping applications. The specifier needs to edit the guide specifications to fit the needs of specific projects. Contact Weld-On to assist in making appropriate product selections. Throughout the guide specification, there are Specifier Notes to assist in the editing of the file.

The language provided is not adequate as a complete stand-alone specification section because it is an accessory product. Recommended section numbers and titles where this information may be appropriately included are Section 40 05 13.73 - Plastic Process Piping; Section 40 23 00 - Water Process Piping or other process piping sections. Language that the specifier may elect to include in each of the 3-Parts has been provided. Article numbering is only for navigating this document and language should be incorporated into the appropriate Article heading in the desired section.

References have been made within the text of the specification to MasterFormat 2004 Section numbers and titles; specifier needs to coordinate these numbers and titles with sections included for the specific project.

*Specifier Notes included in (italicized red text) are included to provide assistance in selecting appropriate text for inclusion in a Specification. **[Bracketed Bold Text]** indicates a selection is required. Text in the brackets may not be the only options available, but are recommended or common selections.*

PART 1— GENERAL

1.1 SECTION INCLUDES

- A. (Accessory) Low VOC Primer for Process Piping

1.2 REFERENCES

- A. ASTM International
 - 1. ASTM D 2855 Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
 - 2. ASTM F 656 Standard Specification for Primers for use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings.
- B. NSF International/American National Standards Institute
 - 1. NSF/ANSI 14 Plastics Piping System Components and Related Materials.
 - 2. NSF/ANSI 61 Drinking Water System Components - Health Effects.
- C. SCAQMD: South Coast Air Quality Management District.
 - 1. SCAQMD Rule 1168/316A: Adhesive and Sealant Applications.

1.3 SUBMITTALS

(Specifier Note: DELETE Submittal Procedures paragraph when not required. Coordinate requirements with Division 01, Section 01 33 00 – Submittal Procedures.)

- A. Refer to Section **[01 33 00 Submittal Procedures]** **[insert section number and title]**.
- B. Product Data: Submit manufacturer current technical literature for each type of product, including installation instructions.
- C. LEED Submittals:
 - 1. Product Data for Credit **[IEQ 4.1]** **[EQ 4.1]**: For sealants, including printed statement of VOC content.

PART 2— PRODUCTS

(Specifier Note: Product information is proprietary to Weld-On. For Weld-On technical support, contact 877-477-8327.)

2.1 MANUFACTURER

- A. Weld-On, PO Box 379, Gardena, CA 90248-0379; 310-898-3300; www.weldon.com

Continued on back

2.2 PRIMER

(Specifier Note: Product information is proprietary to Weld-On.)

A. Basis of Design - WELD-ON® P70™

1. Characteristics:

- a. Color: **[Clear] [Purple]**
- b. Specific Gravity: 0.858 ± 0.040 .
- c. Meets ASTM F 656 for use on potable water, chemical transport, drain, waste, vent, and sewer applications.
- d. Conforms to NSF/ANSI 61- Drinking Water System Components - Health Effects.
- e. VOC Content ≤ 550 g/l, applied as directed, per SCAQMD Rule 1168/316a.

PART 3— EXECUTION

3.1 EXAMINATION

- A. Verify pipe to be joined is cut square and deburred. Pipe outside diameter should have a, 10-15 degree chamfer, 3/32 inch from the end.
- B. Remove residue from inside and outside of pipe, pipe bell, or fitting socket. Pipe and fitting surface shall be free of any chemical, paint, coatings, and other residue.

3.2 PRIMER APPLICATION

- A. Comply with standard practices indicated in ASTM D 2855.
- B. Apply primer, using a swab or roller, working it into the fitting socket, keeping the surface and applicator wet, until the surface has been softened. Remove any primer puddles. Apply second coat of primer in accordance with manufacturer's recommendations.
- C. Apply primer to outside diameter of pipe, in same manner as fitting socket, to a depth equal to the fitting socket.

DISCLAIMER: This guide specification language has been written as an aid to the qualified specifier and design professional. The use of this information requires the sole professional judgment and expertise of the design professional to adapt the information to the specific needs for the Owner and the Project, to coordinate with their Construction Document Process, and to meet all the applicable building codes, regulations and laws.





Safety/Warranty Information



Safety Information

For over 60 years, millions of solvent welded joints have been made with only rare cases of mishap. However, since some components in these products are flammable and an irritant, appropriate safety precautions should be used.

All solvent cement and primers for plastic pipe are flammable and should not be used or stored near heat, spark, open flame and other sources of ignition.

Containers should be kept tightly closed when not in use and capped as often as possible when in use. Work should be done in well-ventilated areas to avoid prolonged exposure to vapors.

Carefully read Safety Data Sheets and follow all precautions.

For more specific information on safety precautions, first aid, and storage and handling of solvent cements and primers, review Weld-On's "Guide to Solvent Welding" at www.weldon.com.

Warranty

Weld-On Adhesives, Inc., warrants to all original purchasers of Weld-On products that all new Weld-On products shall be of good quality and free from defects in material and workmanship for the product's shelf life. If any Weld-On product becomes defective, or fails to conform to this written limited warranty under normal use and storage conditions, and if the original purchaser complies with the terms of this limited warranty, then Weld-On will, without charge, replace the nonconforming product.

This limited warranty shall extend to all products manufactured and sold by Weld-On. However, this limited warranty shall not extend to, nor shall Weld-On be responsible for, damages or loss resulting from accident, misuse, negligent use, improper application, or incorporation of Weld-On products into other products. In addition, any repackaging of Weld-On products also shall void the limited warranty provided herein.

Any defective Weld-On products shall be replaced pursuant to the terms of this limited warranty by returning the defective product, with transportation charges prepaid, to Weld-On at the following address:

Weld-On Adhesives, Inc.

Attn: Customer Service
455 West Victoria Street
Compton, CA 90220

Any implied warranty in connection with any Weld-On product hereby is limited in duration to the period of this limited warranty. Weld-On shall not be responsible for, nor does this limited warranty extend to, consequential damage, or incidental damage or expense, including without limitation, injury to persons or property or loss of use. This limited warranty is in lieu of all other express warranties of Weld-On, and Weld-On does not assume, nor does it authorize any person to assume on its behalf, any other obligation or liability.



Frequently Asked Questions (FAQs)



FAQs

What is an Industrial Cement?

An Industrial Cement is a solvent cement specifically formulated to withstand the long-term mechanical, thermal, and chemical stresses of industrial applications.

Industrial application

- Process systems - Closed, pressurized systems composed of pipes, valves, fittings (PVFs), pump(s) and storage tanks.
- Drainage systems – Gravity fed piping systems for the evacuation of spent process media.

Mechanical stresses - Vibration, water hammer, bending load, etc.

Thermal stresses - Temperature variation, hot or chilled media causing expansion and contraction of joints. Every degree higher in temperature results in decreased hoop strength (ability to hold pressure) of the piping system.

Chemical stresses - Loss of tensile strength due to the interaction with the polymer of corrosive chemicals circulating through piping systems.

Why use an Industrial Cement vs. a less expensive, non-Industrial Cement?

An industrial environment is a far more demanding environment, particularly long term, than a non-industrial (e.g. irrigation) application and therefore requires greater joint strength. A system will always fail at the weakest link, which can easily be the joint if the wrong cement is chosen and/or improper joining techniques are used. Choosing the right solvent cement/primer and proper application of these are critical in the success and performance of an industrial piping system.

A solvent cement that produces the strongest bond in the contact area between the pipe and fitting and fills gaps with the correct cell class resin will increase life expectancy and reduce down-time. Industrial grade cements contain a higher percentage of the most aggressive solvents and the highest quality resin which, in conjunction with the use of an industrial primer, are capable of creating deeper penetration and a longer-lasting, reliable joint.

What is the difference among extra heavy-bodied (719™/729™), heavy bodied (711™/724™), and medium bodied (705™) cements used in industrial applications?

The main difference among different body Weld-On® cements is the higher viscosity of the heavier cements. Not exclusively, but among other things, the greater viscosity of Weld-On cements is achieved by having more resin (PVC or CPVC) in the cement formulation. Large diameter pipes and fittings used in most industrial applications will tend to have more tolerance gap, so more resin (present in the heavy bodied cements) is needed to fill these gaps.

Why should I use a heavy bodied cement (e.g. 711™, 724™)?

More resin is needed to fill the larger gaps of large diameter pipes and fittings.

Applying cement to larger diameter systems will also require more time (can be minutes rather than seconds) and since the assembly of the joint must always be done when the cement is still completely wet on both the pipe and fitting, a thin cement (less viscous) would dry on the pipe before assembly, thus resulting in a poor quality joint. Weld-On heavy body cements allow the cement to stay wet longer.

Most importantly, ambient temperature affects the bonding of pipe joints. In hot temperature or when pipe is stored outside in a hot climate, a thin bodied cement will evaporate very quickly preventing penetration of the solvents and resulting in weak bond strength. Heavy bodied Weld-On cement is recommended because it does not evaporate quickly and is ideal for installing systems in hot weather.

Why should I use Weld-On® 719™ for fabrication of large fittings?

Weld-On 719™ PVC plastic pipe cement is a premium, high strength, extra heavy-bodied formulation for large diameter industrial piping systems (up to 30"). Because it is extra heavy-bodied, it contains more resin and is ideally suited for fabrication of large fittings and applications requiring a higher gap filling properties capability (see FAQ #1 and #2).

See the Applications Chart for more information on appropriate applications of 719™.

Why should I use Weld-On 724™ for chemical applications?

Weld-On 724™ plastic pipe cement is a premium, high strength, heavy bodied solvent cement for joining CPVC and PVC industrial piping systems and is specially formulated for chemical resistance to:

- Caustics including hypochlorites
- Mineral acids
- Aggressive water
- Other aqueous salt solutions

When using 724™ in chemical systems, including NaOCl, there is no need for any preventive measures such as stick welding around the fitting entrance. A properly made joint using 724™ and P-70™ will guarantee the same trouble-free life expectancy as the pipe and fitting used to create the joint.

See the Applications Chart for more information on appropriate applications of 724™.

Do I need to use a primer (P-68™, P-70™) in industrial applications?

Primer is an essential component of any solvent welding procedure of either PVC or CPVC systems. For any systems that will be exposed to any combination of high temperatures, pressure and chemicals, the use of primer is a MUST. There is a direct correlation between solvent penetration (into the pipe and fitting walls) and the life expectancy of the connection. Although solvents are also contained in the cements, they will provide only superficial penetration of the substrates. The result will be insufficient softening. This could lead to a more superficial fusion, subject to weakening over time due to exposure to mechanical, thermal and chemical stresses, as well as aging of the material itself. This could lead to joint problems and/or a decreased life expectancy of the joint assembly.

In order to properly break through the hard shell surface of an extruded or injection molded component, an aggressive primer is needed. Primers are a combination of different solvents; the more aggressive the solvent is, the greater the penetration. The more demanding the application is (more penetration needed), the stronger (and more aggressive) the primer should be. Although each solvent has a different function, it can be generalized that THF is the strongest, most penetrating and most efficient solvent available on the market today and best for use in industrial applications.

Which primer (P-68™ or P-70™) should I use in industrial applications?

Weld-On P-70™ has a far greater concentration of THF than P-68™, thus making it the more aggressive of the two and the one recommended for demanding applications such as Sch.80 or PN16 systems, chemical feed systems and all CPVC systems.

See the Application Chart for more specific information on P-68™ and P-70™ applications.

If I install without primer, will it affect the strength of piping?

It will decrease either the life of the joint and/or the safety factor. A solvent welded joint without primer will be more superficial and therefore more subject to failure when exposed to more stressful conditions (exposure to chemicals, expansion and contraction, vibrations, aging, cyclic loading, etc.).

A perfect bond using the right solvent cement and primer is the only bond that will guarantee that the joint has the same life expectancy, pressure rating and safety factor of the piping components being installed.



455 W. Victoria Street, Compton, CA 90220 U.S.A.

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www.weldon.com



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