

FLOWGUARD GOLD®

FBC™ SYSTEM COMPATIBLE PROGRAM



CPVC piping systems have been chosen for more than 50 years. Ideally suited for use in new construction, re-piping and repair projects within domestic plumbing, and industrial and fire sprinkler piping, CPVC products are unsurpassed in their corrosion resistance and ease of installation.

In order for CPVC piping systems to achieve peak performance, they must be properly matched with complementary construction products like thread sealants, leak detectors and firestops, among others.

Lubrizol, the FlowGuard Gold® licensee holder and resin supplier, understands the complex dilemma and possible legal ramifications a mismatch can create for contractors and manufacturers alike. To ease the burden associated with researching and selecting accompanying construction products, Lubrizol developed the FBC™ System Compatible Program. This unique and invaluable resource tests and monitors ancillary products to ensure their chemical compatibility with Lubrizol's FlowGuard Gold® CPVC piping systems.

The primary goal of the FBC System Compatible Program is to enhance customer confidence by eliminating the guesswork associated with chemical compatibility. To streamline the selection process, all products in the program display an FBC System Compatible mark on their label. This mark quickly and accurately assures installers of a product's chemical compatibility. And once this mark has been applied, no changes can be made to the formulation of the product without advance written notice and retesting.

The following products meet the standards and are deemed to be FBC™ System Compatible

SYSTEM COMPATIBLE PRODUCT LISTING	
CUTTING OIL	MANUFACTURER
Ace Transul-Kut 3200 Cutting Oil	Lube-Tech
Brecoil	BRECCO
CL-Free PLUS Thread Oil	Walker Emulsion
Endura-Clear™	RIDGID
Thread-Thread Fit® Clear	FPPi
FMT® Pipe System Plus Thread Cutting Oil	Fastenal
FIRESTOP CAST-IN DEVICES	MANUFACTURER
Cast-In-Place Firestop Device	Bio Fireshield
CP 680-P / CP 680-PX	Hilti
Hydro Flame® / Hydro Flame™ Pro Series Sleeving Systems	Holdrite
HydroPreseal®	Holdrite
SpecSeal Cast-in Firestop Device	Specified Technologies Inc.
Top Seal Plug	Hilti
Water Barrier Module	Hilti
White ProSeal Plug	ProSet Systems
FIRESTOP COLLARS	MANUFACTURER
Biostop™ Pipe Collar	Bio Fireshield
CP 643N	Hilti
Metacaulk® Pipe Collar	RectorSeal
Self Seal SSC / Self Seal SSR	Nuco
FIRESTOP SEALANTS	MANUFACTURER
3000 WT Firestop	3M
A/D FIRE BARRIER Intumescent Sealant, Intumescent Sealant II	A/D Fire Protection Systems
A/D FIREBARRIER Silicone™ (red & gray) *Silicone based firestop	A/D Fire Protection Systems
A/D FIREBARRIER Silicone SL™ (red & gray) *Silicone based firestop	A/D Fire Protection Systems
BIOATHERM™ 100 / Self Levelling	Bio Fireshield
BioStop® 350i Firestopping Sealant	Bio Fireshield
BioStop® 500+ Firestopping Sealant	Bio Fireshield
BioStop® 750 Spray, 750SL, 750 Caulk	Bio Fireshield
BioStop® BF 150+ Firestopping Sealant	Bio Fireshield
BlazeMaster® Caulk & Walk	BlazeMaster

UPDATED: AUGUST 2018 CHEMICAL COMPATIBILITY

SYSTEM COMPATIBLE PRODUCT LISTING		Continuation
FIRESTOP SEALANTS	MANUFACTURER	
CFS-S-S SIL GG; CFS-S SIL SL	Hilti	
Fire Barrier Water Tight Sealant 1000 NS	3M	
Fire Barrier Water Tight Sealant 1003 SL	3M	
FirePro® High Expansion Intumescent Sealant	Rockwool	
FS-One Max	Hilti	
Fyre-Caulk	Tremco	
IC 15 WB+ Firestop	3M	
MC 150+	RectorSeal	
Metacaulk® 1000	RectorSeal	
Metacaulk® 1200 Spray, 1200 SL, 1200 Caulk	RectorSeal	
Metacaulk® 350i, MetaCaulk® 835 + CG/835 + Self Leveling	RectorSeal	
PENSIL® 300	Specified Technologies Inc.	
PyroPro HPE Sealant	FSi	
RectorSeal® Smoke and Acoustic Caulk/Spray	RectorSeal	
Self Seal GG-200; Self Seal GG-266, Self Seal SL-100	Nuco	
SpecSeal® LCI Intumescent Firestop Sealant	Specified Technologies	
SpecSeal® Series AS200 Elastomeric Spray	Specified Technologies	
SpecSeal® Series SIL300	Specified Technologies	
SSS Intumescent Sealant	Specified Technologies	
TREMstop™ Fyre-Sil	Tremco	
TREMstop™ Fyre-Sil SL	Tremco	
TREMstop™ IA	Tremco	
TREMstop™ IA+	Tremco	
WF300 Firestop Caulk	Specified Technologies	
White Lightning Flame Buster Intumescent Silicone Sealant	Sherwin Williams	
White Lightning Flame Buster Silicone Fire & Smoke Blocking Sealant	Sherwin Williams	
FIRESTOP WRAPS	MANUFACTURER	
AD FIREBARRIER Wrap Strip	Fire Protection Systems	
BioStop™ Wrap Strip	Bio Fireshield	
CP 648-S / CP 648-E	Hilti	
Fire Band	Nuco	
Metacaulk® Wrap Strip	RectorSeal	
FREEZE PROTECTION	MANUFACTURER	
BioTherm Fluids Fire 48	Orison Marketing	
FireFighter® GL- 48	Noble Company	
Frost Proof GL- 48	J.C. Whitlam Manufacturing Co.	
Glycerin 48% Antifreeze Solution	Chemfast, LLC	
Superguard G38 and Superguard G48	Superior Oil Company	
GASKET & GASKET LUBRICANT	MANUFACTURER	
LubeFit® Gasket Lubricant	FPPi	
Lubri-Joint® Water Dispersible Gasket Lubricant	LA-CO	
Phoenix™ 27-XL High Performance Water Dispersible Pipe Joint Lubricant	JTM Products	
PROSELECT™ Pipe Joint Lubricant	Ferguson	
Quick Slip Plus	J.C. Whitlam Manufacturing Company	
Shurjoint Lubricant - Model 550h	Shurjoint Piping Products	
Stress Saver® XP Gasket	Garlock	
LABELS	MANUFACTURER	
CPVC-Code Arrows-On-A-Roll	Seton	
CPVC-Code Non-Potable Water Pipe Markers	Seton	
CPVC-Code Pipe Markers	Seton	
LEAK DETECTORS	MANUFACTURER	
megabubble® Leak Detector	Hercules Chemical Company	
MOLD INHIBITORS	MANUFACTURER	
FortiCel™ New Construction	Protective Coatings Group	
moldBLOCK™	MoldStoppers	
New Build 50 (clear, blue, white)	Anabec	
SEISMIC EXPANSION DEVICES	MANUFACTURER	
Fireloop® Expansion Joint for Fire Sprinkler Systems	Metraflex	
Seismic Wire Rope/Cable™ Bracing	Loos & Co.	
SYSTEM ACCESSORIES	MANUFACTURER	
FlexHead® Fire Sprinkler Connections	FlexHead	
Sioux Chief CPVC Transition Fittings	Sioux Chief	
THREAD SEALANTS	MANUFACTURER	
BLUE MONSTER™ Stay-Soft Sealant	Clean-Fit	
Blue Seal	IPS Corporation	
Blue+	RectorSeal	
Great White®	Oatey	
Leak-Tite® Blue	LA-CO	
LH056	PermaBond	
No. 100 Virgin™	RectorSeal	
PipeFit®	FPPi	
Power Seal Plus	J.C. Whitlam Manufacturing Company	
Pro Dope™ Thread Sealant	Hercules Chemical Company	
ProSeal Plus	Lyncar	
Pure White	RectorSeal	
Slickon™ GTS Gold™	Anti-Seize Technology	
Slic-Tite® Paste with PTFE	LA-CO	
T Plus 2	RectorSeal	
TFW™	Jet-Lube	
Tuf-Glide®	Argco	
White Seal Plus	IPS Corporation	

Products are continuously being added to the FBC System Compatible Program. Always refer to
<https://www.lubrizol.com/CPVC/FBC-System-Compatible-Program>
 for the most current list of compatible products

INCOMPATIBLE PRODUCTS

All ancillary construction products coming into direct contact with FlowGuard® pipe & fittings systems must be chemically compatible. This ensures proper performance and functionality.

If an ancillary product is to come into direct contact with a FlowGuard pipe & fittings system and is not included in the FBC™ System Compatible Program, Lubrizol recommends that chemical compatibility be confirmed with that product's manufacturer prior to use.

The following products have been deemed to be incompatible with FlowGuard pipe & fittings systems. DO NOT USE THE FOLLOWING PRODUCTS

CATEGORY	COMPANY	PRODUCT
CAULKS	British Gypsum	Gyproc Sealant
	OSI Sealants (Dartworth Company) (Ohio Sealants)	Polyseamseal Tub & Tile Adhesive Caulk Polyseamseal All Purpose Adhesive Caulk Pro Series PC-158 Caulk
	John Wagner Associates	Grabber Acoustical Sealant GSCS
	No Nonsense Limited	Nemesis Fire Rated Hybrid Sealant 290ML
	Pecora	AC-20 Acrylic Latex Caulk & Silicone
	Sika Corporation	Sikaflex® Self-Leveling Sealant
	Specified Technologies, Inc.	SpecSeal® Smoke 'N' Sound Sealant
	United States Gypsum	Sheetrock Brand Acoustical Sealant
	White Lightning	3006 All Purpose Adhesive Caulk
	FIRE STOPPING SYSTEMS	3M
BritChem Ltd.		FR Intumescent & Acoustic Acrylic Sealant
Everbuild		Everbuild Fire Mate Sealant C3
Firetherm		Intumastic HP
Flame Stop		Flame Stop V
Hilti		CP506 Smoke and Acoustic Sealant CP606 Flexible Firestop Sealant
No Nonsense Ltd.		No Nonsense Intumescent Acrylic Sealant
Promat		Grafitex
Proset		Proseal Plug, Black Proseal Plug, Red
LEAK DETECTOR (SEE ALSO OTHER COMPATIBILITY CONCERNS)		Federal Process Co.
	G. F. Thompson Co., Ltd.	Masters Leak Detector
	Unipak A/S	Multitec leak detecting spray
	Radnor Welding Products	Radnor® Leak Test Regulator Temperature
	Rectoseal	RectoSeek™ Low Temp
MISCELLANEOUS	WD 40	WD40 Lubricant
	Victaulic	Silicone Pipe Lubricant
	N/A	Peppermint Oil Roofing Tar Vaseline Vegetable Oils
MOLD CLEANERS	Anabec Systems	Anabec Advanced Cleaning Solution
	Coating Systems Laboratories, Inc	Zoonocide
	Fiberlock Technologies	ShockWave IAQ Advanced Peroxide Cleaner No. 8314
	Microban Systems	Microban QCG
MOLD INHIBITORS	X-M Industries	Structure-Guard Mold and Mildew Resistant Coating
	Fiberlock Technologies, Inc.	Fiberlock IAQ200
PIPE CLAMP	Serum Products, LLC	Serum 1000
	LSP Specialty Products	Acousto Clamp, Acousto-Plumb System
PIPE TAPE	Naylon Products	Naylon vinyl-coated wire pipe hangers
	Christy's	Pipe Wrap Tape
	Pro Pak, Inc.	Pipe wrap tape (black)
	Pasco	All Weather PVC Pipe Wrap
THREAD SEALANTS	Wonder	No. 413 Pipe Wrap Tape
	Allied Rubber & Gasket Company (ARGCO)	Super Dope
	Anti-Seize Technology	TFE Paste
	Devcon	Super Lock Hi-Strength, Stud Lock Grade 2271
	General Sealant	GS-600
	G.F. Thompson Co., Ltd.	Masters™ Pro-Dope™ with Teflon®
	Hercules	Brush-on/Blue Block
	Hernon Mfg. Inc.	Powerseal #932
	IPS	White Seal
	JC Whitlam Mfg. Co.	Seal Unyte Thread & Gasket Sealer
	Jet Lube, Inc.	Jet Lube V-2
	Jomar	Tighter-than-Tite
	Loctite	Threadlocker 242; 577
	Lyn-Car Products Ltd.	Proseal
	National Starch & Chemical, Perмамбон Division	Perмамбон LH-050 Perмамбон LH-054
	Permatex Company, Inc.	Permatex 14H
	Rule	High Performance Teflon Thread Sealing Compound

OTHER COMPATIBILITY CONCERNS

CATEGORY	COMPANY	PRODUCT
THREAD SEALANTS	Saf-T-Lok Chemical	Saf-T-Lok TPS Anaerobic Adhesive/Sealant, Industrial Grade TPS
	SOS Products	Teflon Pipe Dope
	Swagelock Company	SWAK
WATERPROOFING	Tremco	TREMproof 250GC single component polyurethane
<p>Chemically incompatible products are added to this list as they are brought to Lubrizol's attention. A product's absence from this incompatibility listing does not imply nor insure CPVC chemical compatibility.</p> <p>Always CHECK the FBC™ System Compatible Program for the most up-to-date compatibility listings. https://www.lubrizol.com/CPVC/FBC-System-Compatible-Program/Incompatible-Products</p>		

Acetone in Primers, Cleaners and Solvent Cements

- Primers, cleaners, and solvent cements containing appreciable amounts of acetone may cause rapid environmental stress cracking of CPVC metal insert parts during installation at freezing temperatures. Contact your primer/cleaner/solvent cement manufacturer for more information or recommendation of alternatives.

Antifreeze: Glycerin from Biodiesel

- Crude glycerin from biodiesel manufacturing is not recommended for use as an antifreeze or heat transfer fluid in CPVC piping systems. Crude glycerin from biodiesel manufacturing may be contaminated with the biodiesel, its intermediary chemicals, and/or waste products from the biodiesel manufacturing process. NFPA 13D calls for the use of USP (United States Pharmacopoeia) or CP (Chemically Pure) grades when glycerin is used as an antifreeze in fire sprinkler systems. For a listing of glycerin products that have been determined to be compatible with Lubrizol brand CPVC, refer to FBC System Compatible Program.

Cleaning CPVC Pipe

- While common ordinary soaps are not detrimental to CPVC, most modern dishwashing liquids contain synthetic detergents, some of which may cause environmental stress cracking of fittings. A mild ionic detergent solution to remove incompatible oils or chemicals is recommended. A rinse with clean water to completely clean the system is advisable as a final flushing. Contact your dishwasher detergent manufacturer for more information or a recommendation of alternatives. For a listing of ancillary products that are compatible to Lubrizol CPVC, refer to FBC System Compatible Program.
- Household bleach solutions may be used for cleaning and disinfecting piping systems. The bleach used should be plain, without added thickeners, detergents, scents, etc.

Drains

- CPVC should not be used to connect a dishwasher drain to the sanitary drain due to incompatibility with food oils and surfactants in the dishwasher wastewater. This incompatibility could lead to premature failure in the CPVC.

Dry Wall Compound

- Joint Compound/Taping Compound/Mud/Finishing Compound used with Gypsum board is generally not incompatible with CPVC

Fireproofing

- Cementitious or gypsum-based fireproofing material is not incompatible with CPVC.

Flexible Wiring & Cable

- Direct contact with flexible wire and cable that utilize insulation containing plasticizers is not recommended. Section 334.30 of the National Electric Code (2002 Edition) requires wire and cable to be secured by staples, cable ties, straps, or hangers. Air ducts, pipes and ceiling grid are not acceptable supports for wire and cable. Also see section titled "Rubber & Flexible Materials containing plasticizers."

Fragrances – Perfumes

- Scented products such as cologne, perfume, or essential oils (peppermint oil, orange oil, spearmint oil, etc.) should not be put into a CPVC piping

system for the purpose of being able to detect leaks by odor. Most fragrance chemicals and essential oils are strong solvents and/or environmental stress cracking agents for CPVC.

Fungicides & Mold Inhibitors

- When performing repairs to leaks in existing systems, care should be taken to isolate CPVC pipe from direct contact with heavy concentrations of fungicide products which may be applied during cleanup of water damage. Vinyl piping materials such as PVC or CPVC may be damaged by fungicides when fungicides are sprayed on surrounding drywall and wood framing to prevent the growth of mold and mildew in the affected area. Common sense precautions will prevent problems with repairs to existing systems. When repairs are made to an existing system, and the possibility exists that fungicides will be applied to treat damp drywall and wood framing surrounding the repair site, exposed piping should be sleeved with a compatible plastic sleeving or pipe insulation material to prevent direct contact of the fungicide with the plumbing system.

Gap Filling

- General-Purpose Gap Filling: For general-purpose filling of small gaps around CPVC pipes in wall or floor penetrations (not fire-rated constructions), either RTV silicone sealant or polyurethane “foam-in-a-can” may be used. Other types of general purpose sealants may or may not be compatible. Always check with the product’s manufacturer for recommendations. See also Lubrizol’s list of caulks and sealants known to be incompatible.
- If spaces larger than small gaps in wall or floor penetrations are anticipated to be filled with polyurethane foam around CPVC pipes and fittings, see also Lubrizol’s published information concerning foamed-in-place polyurethane insulation. For sealing gaps in fire-rated constructions, a compatible firestopping product must be used.

Grease & Cooking Oils

- When CPVC pipe is installed in kitchen areas the pipe must be protected from contact with grease or cooking oils. Consideration must be given to not only protecting the pipe from direct contact with grease or oil but also contact that may occur from airborne grease or oil.

Heat Trace

- It is acceptable to heat trace FlowGuard Gold, pipe and fittings provided the temperature of the heat tracing material does not exceed 180°F (82°C). Steam heat tracing should not be used. Chemical compatibility of the heat tracing material with CPVC should be confirmed with the product manufacturer. The heat tracing material should comply with all applicable codes and be installed per manufacturer’s instructions.

Hangers and Straps

- Plastic hangers and straps made of 100% polypropylene, polyethylene or nylon may be used.
- Most metal hangers and straps designed for metal pipe are likely suitable for use. Hangers and straps should not have rough or sharp edges that come in contact with the pipe. Hangers and straps with a flexible coating or pads may contain incompatible plasticizers and are not preferred. Also see section titled “Rubber & Flexible Materials Containing Plasticizers”.
- See pipe manufacturer’s installation instructions for proper use of hangers and straps.

Insulation

- Tubing insulation for use with CPVC should be fiberglass, foamed polyolefin (polyethylene), foamed polyisocyanurate or phenolic. Foamed rubber tubing insulation may contain incompatible plasticizers and is not preferred. Foamed polyolefin, foamed polyisocyanurate and phenolic insulations should not have any oil lubrication applied to the interior surface.
- Paper Faced Batt, Unfaced Batt and Fill insulation made of Fiberglass, Glass Mineral Wool, Mineral Fiber, Stone Wool, Silica Aerogel and Cellulose may come into contact with CPVC.
- Fiberglass Duct insulation with aluminum, paper, metalized polyester, polypropylene and polyethylene facing may come into contact with CPVC.

continuation - OTHER COMPATIBILITY CONCERNS

Leak Detectors

- If it is necessary to use leak detectors on CPVC systems, only leak detectors that are included in the FBC System Compatible Program should be used. While common ordinary soaps are not detrimental to CPVC, most modern dishwashing liquids contain synthetic detergents, some of which may cause environmental stress cracking of fittings. For a listing of ancillary products that are compatible to Lubrizol CPVC, refer to FBC System Compatible Program.
- Scented products such as cologne, perfume, or essential oils (peppermint oil, orange oil, spearmint oil, etc.) should not be put into a CPVC piping system for the purpose of being able to detect leaks by odor. Most fragrance chemicals and essential oils are strong solvents and/or environmental stress cracking agents for CPVC.

Metal Piping connected to or Installed Alongside CPVC Piping

- CPVC may be damaged by torches and/or chemicals used to install metal piping. When metal piping is installed in proximity to CPVC piping systems, care should be taken to protect the CPVC from burning with torches or contact with molten solder and solder flux, as well as incompatible thread sealants, leak detectors, lubricants, or other chemical products which may be used on metal piping.
- Transitions from steel pipe to CPVC pipe can be made through a variety of methods such as threaded connections, flanges, and grooved adapters. Occasionally the steel pipe may contain residual oils that were used to aid in the cutting process. Some of the oils used for this purpose, especially those marketed as “environmentally friendly” or “vegetable based” may be incompatible with CPVC. These cutting oils should be removed from the steel pipe prior to connecting to CPVC pipe. If a cutting oil is used, consult with the manufacturer of the cutting oil for a specific recommendation as to compatibility with CPVC. Those cutting oils which are listed in the FBC System Compatible program have been tested and confirmed to be compatible with FlowGuard Gold®.
- Dye penetrants used to test the quality of welds in metal piping may contain plasticizers or other chemicals incompatible with CPVC. Dye penetrants left on the inside surface of welded metal pipes may later wash into CPVC piping connected to it. This situation could create environmental stress cracking in CPVC wherever collections of the penetrant chemical might lodge. These penetrants should be removed from the steel pipe prior to connecting to CPVC pipe or the manufacturer of dye penetrant should be consulted with regarding recommending proper penetrant for use with steel | CPVC piping systems.

Paint

- If paint must be used on CPVC, water-based latex paint is the recommended type of paint to use on pipe and fittings manufactured from Lubrizol CPVC. Two-part epoxy paint should not be used. Other types of paint have not been known to be detrimental to CPVC provided that it is applied in a light coating that dries quickly. Paint should not be allowed to puddle on or around CPVC pipe or fittings. Antimicrobial additives in paint do not change this guidance.

Polyurethane (Spray-On) Foams

- In understanding spray polyurethane foams there are two general areas of concern for CPVC pipe and fittings: (1) chemical compatibility and (2) potential damage to pipes and fittings due to high exothermic temperatures during installation. These spray polyurethane foams have different cell structures, different flame retardants, reach different curing temperatures and require different installation thicknesses to obtain the required R-value. All of these factors must be considered when using spray foams.
- In 2009, Lubrizol assisted the Spray Polyurethane Foam Alliance (SPFA) to determine if chemical compatibility issues exist with FlowGuard Gold® CPVC pipe and fittings. SPFA findings, although not comprehensive,

conclude that those spray polyurethane foams tested did not pose a chemical compatibility problem. In addition, Lubrizol is unaware of a CPVC failure that was the result of chemical incompatibility with spray polyurethane foams. For more information on the SPFA testing, please contact them at (800) 523-6154 or visit their web site at www.sprayfoam.org. With respect to chemical compatibility, one must always check with the spray foam manufacturer to have them provide assurance that the formulation that they are manufacturing is not incompatible with CPVC.

- In a separate, unrelated study also in 2009, Lubrizol conducted testing with a manufacturer of spray polyurethane foam to better understand the effects of high exothermic temperatures on FlowGuard Gold and BlazeMaster CPVC pipe and fittings. These findings demonstrated that temperatures can exceed the softening point of dry CPVC pipe and fittings.
- This study found that, for the products tested, the spray pass thickness of the manufacturer's nominal two pound density spray polyurethane closed cell foam should not exceed a maximum of two inches per single pass. Lubrizol also found in this study that repeated two inch passes (layers) separated by 10 minute intervals provided sufficient time for the spray polyurethane foam to cool. For the manufacturer's nominal half pound density spray polyurethane open cell foam, Lubrizol found that spray pass thickness should not exceed a maximum of six inches per single pass. Heat generated and trapped inside foam layers applied too thickly may cause ballooning of pipe or excess flexural stresses on pipe and fittings due to thermal expansion.

Because polyurethane spray foams' resulting exothermic temperatures and chemical compatibility characteristics can vary to some extent, Lubrizol recommends that you consult with the manufacturer of the polyurethane spray foam to be installed.

- For more information on the compatibility study conducted by SPFA or on the effects of the curing exotherm on CPVC, visit the Spray Polyurethane Foam Alliance website at <http://www.sprayfoam.org/component/content/article/39-technical/5153-spf-and-cpvc-pipes-and-fittings>.
- California State Fire Marshal Information Bulletin 14-004
Non-Metallic Piping Systems, Fire Sprinklers and
Spray Polyurethane Foam Applications.

Residual Oils with HVAC Applications

- Some heat exchangers or condenser coils may contain residual oils from the manufacturing process which can cause cracking of CPVC. Caution should be exercised when installing CPVC in combination hot water/air heating units or as condensate drain lines for air conditioning systems. Confirm the compatibility of CPVC with the residual oils prior to installation. The interior of heat exchangers or the exterior of condenser coils may be thoroughly flushed with mild ionic detergent solution to remove incompatible oils prior to piping installation. A rinse with clean water to completely clean the system is advisable as a final flushing.

Rubber & Flexible Materials Containing Plasticizers

- CPVC is not compatible with some rubber and flexible plastic materials containing certain types of plasticizers. Incompatible plasticizers include, but are not limited to, phthalates, adipates, trimellitates, dibenzoates, etc. Compatibility should be confirmed before selecting rubber or flexible vinyl materials for direct contact with CPVC. Examples of materials which may

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contain incompatible plasticizers include, but are not limited to, caulks, rubbery hanger padding, vinyl dip coating on metal parts, rubber gaskets, electrical wire jacketing, electrical tape, flexible hoses or tubes, etc. Further, plasticizers may leach from rubber or flexible vinyl materials, such as hoses or tank linings, into the process fluid which contacts them. Plasticizer contamination in the process fluid may also cause environmental stress cracking of CPVC used elsewhere in the system. This can include both CPVC process piping, through which the contaminated fluid may flow, or CPVC ducting drawing fumes from contaminated fluid. Also see section titled "Flexible Wiring & Cable."

Sleeving Material

- In situations where sleeving is required, the pipe should be protected with a compatible sleeving material extending at least 12" above and below the soil. The top of the sleeving should be securely taped to the pipe with a compatible tape product. Backfill over underground piping prior to termiticide spraying. Also see section titled "Termiticides & Insecticide."

Spray-On Coatings

- Certain types of spray-on coatings which form a peelable film to protect fixtures during construction may be incompatible with CPVC. Care should be used to protect exposed piping from overspray when this type of protective coating is applied.

Teflon® Tape

- Teflon® tape is recommended as a preferred thread sealant.

Termiticides & Insecticides

- When performing installations underslab or where the presence of insecticides or termiticides are likely, care should be taken to isolate CPVC pipe from direct contact with large quantities of these chemicals. Vinyl piping materials such as PVC or CPVC may be damaged when termiticides or insecticides are injected into the annular space between the pipe wall and sleeving material trapping the termiticide against the pipe wall. Termiticide applications per label instructions in an open-air environment, such as slab pretreat applications, should not pose a problem. However, puddling of termiticides on or near CPVC pipe may cause failures. In areas where puddling is more likely, such as areas near tub boxes and retreat applications, extra care should be taken to avoid puddling of termiticides. Exercising caution and common sense should prevent installation problems. Before using an insecticide or termiticide, be sure to consult the manufacturer's installation guide for proper application instructions. For a listing of insecticides or termiticides that are included in the FBC System Compatible Program, refer to FBC System Compatible Program.
- Additional precautions need to be taken when retreat applications are required. Termiticide retreatment is usually required when the concrete slab has been broken to relocate a pipe. The following recommendations should be followed in retreat applications:

- Remove all the plastic barrier material that was installed prior to the initial concrete pour from the area to be retreated. Do not reinstall the plastic barrier material
- After the pipe has been relocated, the soil should be pretreated before it is placed in hole around the pipe. Do not apply termiticide directly to the retreat area. Also see section titled "Sleeving Material."

LEGAL DISCLAIMER

The FBC™ System Compatible Program is a resource made available to manufacturers of ancillary products intended to be used with CPVC to help determine whether a product is chemically compatible with Lubrizol's FlowGuard®, CPVC piping systems. Other manufacturers and/or brands of CPVC piping have not been tested as part of the FBC™ System Compatible Program. The FBC™ System Compatible program is, therefore, only applicable to the chemical compatibility of ancillary products with the Lubrizol brands of FlowGuard, CPVC piping systems. This distinction is made because every brand of CPVC piping is made with unique compounds, some of which may contain resins with different molecular weights and varying chlorine content. These characteristics directly impact the performance of the resulting product. Similarly, various CPVC products contain different performance additives. This too affects the performance characteristics of the ancillary product. For these reasons, Lubrizol has no responsibility for any failures occurring as a result of using products in the FBC System Compatible Program with CPVC products other than FlowGuard.