THE GUIDE TO DEBUNKING CPVC MYTHS

DEBUNKING THE MYTHS SURROUNDING

FLOWGUARD® CPVC PIPE AND FITTINGS

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THE GUIDE TO **DEBUNKING CPVC MYTHS**

FlowGuard® plumbing pipe is made from a specialty thermoplastic called chlorinated polyvinyl chloride (CPVC). Aside from being proven reliable with more than 50 years of successful service history, FlowGuard piping is also safe, durable, chlorineresistant, antimicrobial, and recyclable.

Furthermore, FlowGuard CPVC systems are assembled with readily available, inexpensive tools that require no heat or electricity. Solvent welded joints assure the reliability of a FlowGuard system.

WHERE TO USE **FLOWGUARD SYSTEMS**

FlowGuard® Pipe and Fittings are made out of CPVC, or chlorinated polyvinyl chloride. This durable thermoplastic material is trusted by homeowners and professionals around the world, and has been successfully used in residential plumbing systems for more than 55 years.

Working closely with homeowners, plumbers and traders through the years, we've encountered a few misconceptions about CPVC and FlowGuard piping.

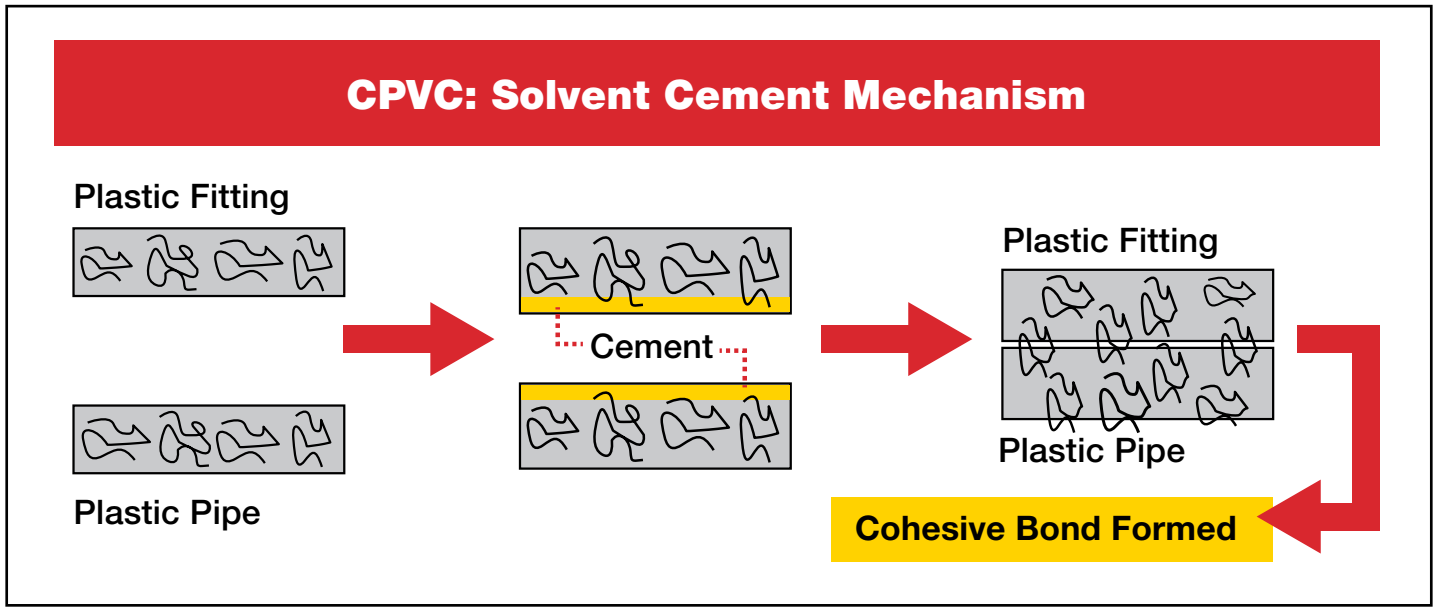
In this guide, we debunk these myths and explain why more and more households are relying on CPVC for hot and cold water plumbing systems.

FLOWGUARD® PIPE & FITTINGS

MYTH: CPVC JOINTS ARE LIKELY TO FAIL.

FACT: CPVC PIPE AND FITTING JOINTS ARE THE STRONGEST PART OF THE SYSTEM.

FlowGuard CPVC pipes are joined using a **simple solvent cement process. Solvent cement is not a glue.** Instead, it chemically fuses the material at the molecular level, creating long-lasting seams.



When solvent cement is applied to CPVC, the solvent softens the outer layer of material, which enables it to fuse itself with an adjoining piece at the molecular level.

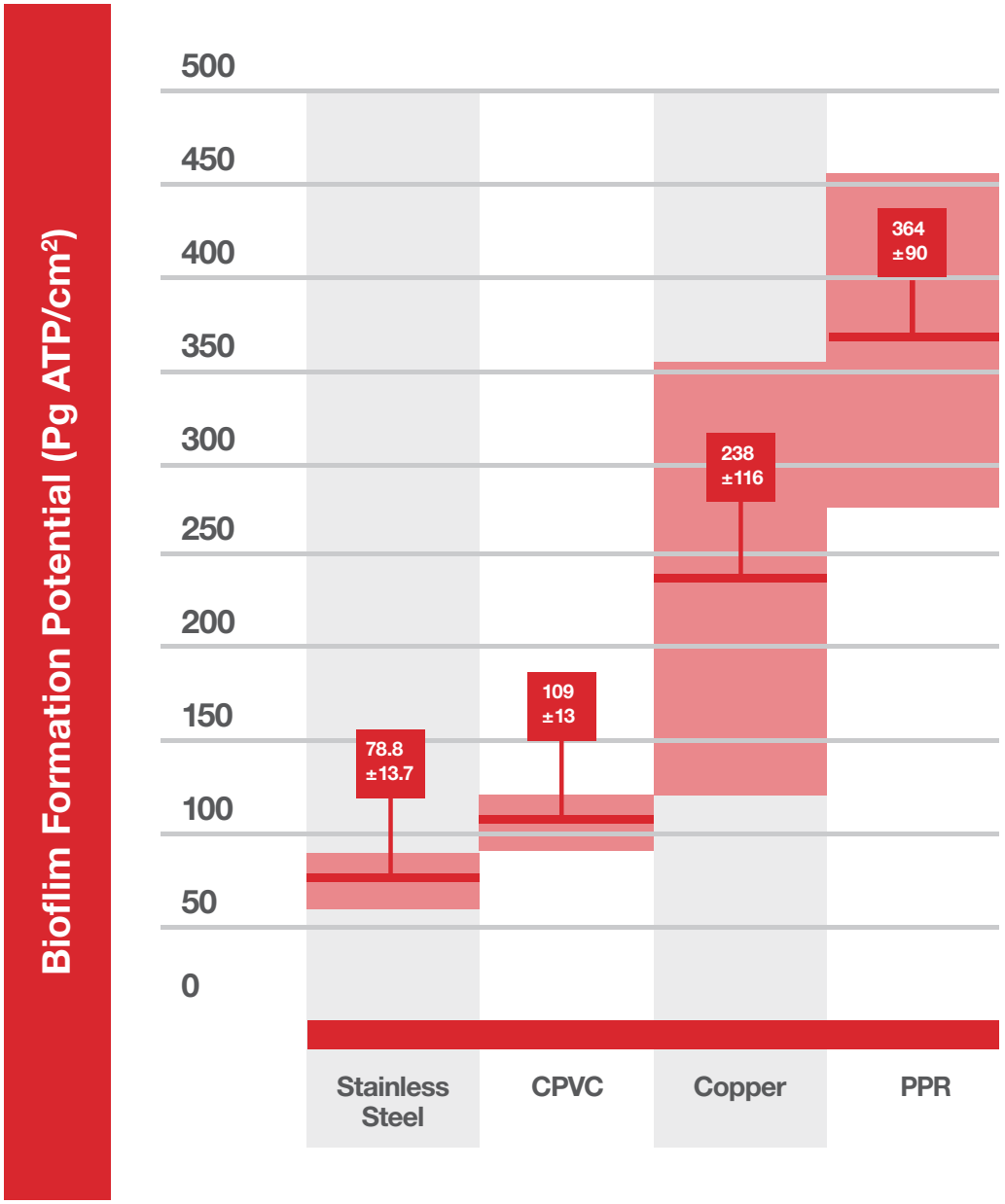
If a CPVC joint fails, it is almost always a result of an improper connection, or cheap, poor quality material. FlowGuard CPVC, as the worldwide leader in CPVC technology, is subjected to stringent quality control measures throughout the manufacturing process, ensuring reliable piping material.

MYTH: CPVC IS UNSAFE FOR DRINKING WATER

FACT:

CPVC delivers safe and clean water. All major international public health agencies, including NSF International, ASTM International, Kiwa and the Water Regulation Advisory Scheme (WRAS), have approved FlowGuard CPVC for safe use in potable water systems.

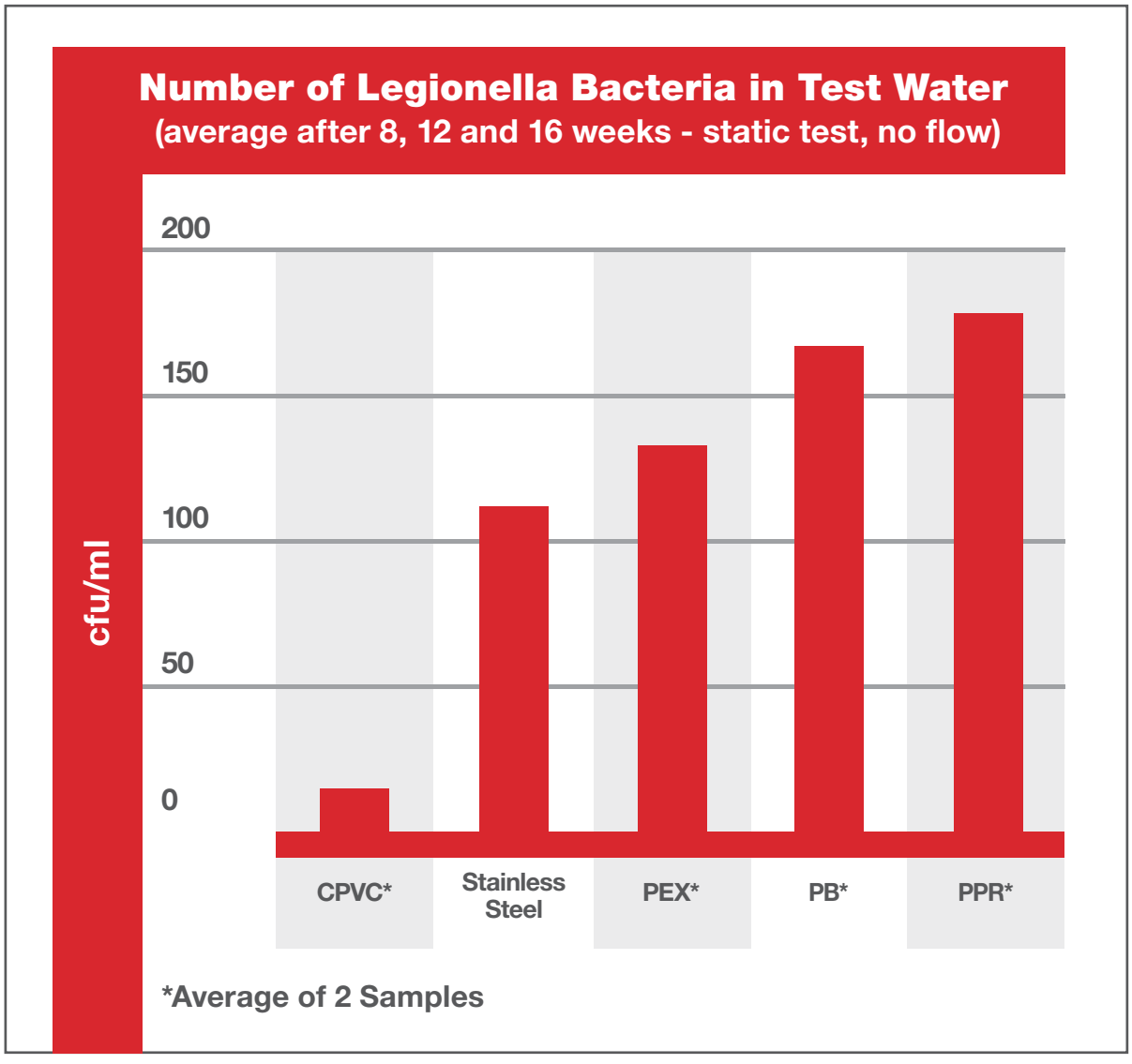
- Unlike green pipe (PPR), FlowGuard CPVC has the **NSF-61 Annex G certification,** verifying that an extremely low lead content is leached into the supply.
- FlowGuard CPVC does not contain any plasticizers, flame retardants, bio-stabilizers and anti-static agents.
- Research from Virginia Tech shows that CPVC materials do not affect drinking water taste or odor.
- FlowGuard CPVC systems keep water clean and help prevent bacterial growth caused by biofilm formation.



MYTH: CPVC IS UNSAFE FOR DRINKING WATER

"CPVC consistently outperforms most other non-metallic piping materials with regard to its ability to resist the formation of biofilms."

- Dr. Paul Sturman, Research Professor and Industrial Coordinator for The Center for Biofilm Engineering at Montana State University



Multiple studies, including the Kiwa Water Assessment, have confirmed FlowGuard CPVC will not contribute harmful contaminants to drinking water.

MYTH: CPVC HAS A SHORT SERVICE LIFE

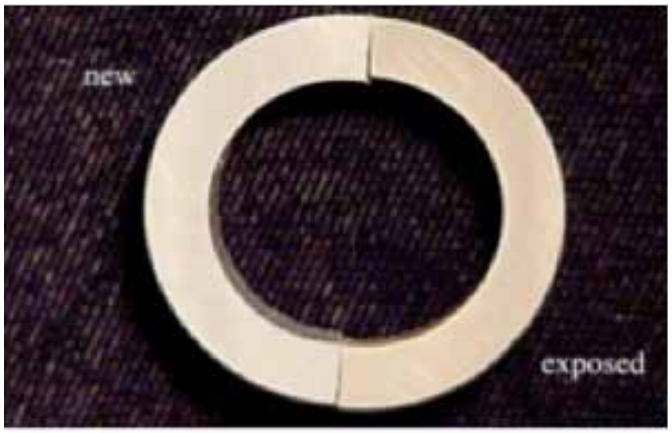
FACT:

CPVC piping systems installed more than 55 years ago are still performing around the world.

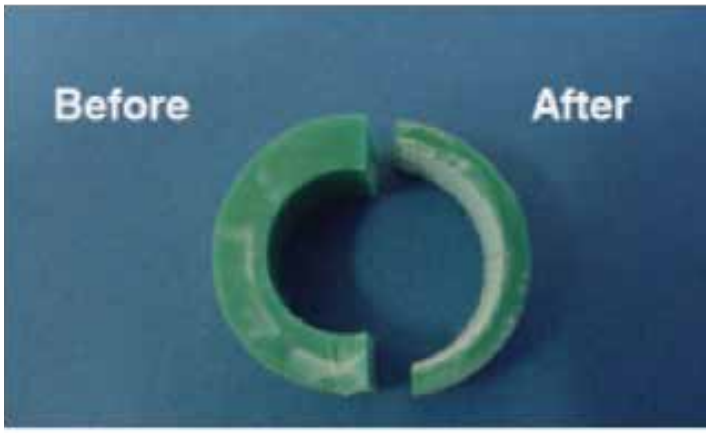
- **FlowGuard CPVC is resistant to chlorine-based disinfectants.** Unlike green pipe (PPR), FlowGuard CPVC is resistant to the additives used to keep your drinking water safe, including chlorine and chlorine dioxide. These common household cleaners can be used safely with FlowGuard CPVC —chlorine dioxide causes pipe failure in PPR systems.
- **FlowGuard Pipe and Fittings** requires all partner manufacturers meet specific protocols and standards when manufacturing piping. Only companies that satisfy this criteria and pass inspection are allowed to use the FlowGuard logo.

CHLORINE RESISTANCE TESTING: **CPVC VS. PPR**

The CPVC pipe on the left was installed in the 1960's. After 23 years of installation FlowGuard CPVC did not show any signs of damage to the material or reduction of the internal diameter. The green (PPR) pipe on the right was tested in accordance with NSF P-171 (Protocol for Chlorine Resistance of Plastic Piping Materials) and showed significant signs of pipe wall erosion after only 9 and a half months.



CPVC: Real Life testing after 23 years



PPR Erosion
After 9-1/2 months (at 5ppm Chlorine)

Chlorine Resistance Testing: CPVC vs. PPR

MYTH: GREEN PIPE (PPR) IS BETTER THAN CPVC BECAUSE IT'S NEWER

FACT:

Homeowners and plumbers prefer FlowGuard CPVC over PPR because of its:

- **Fire resistance:** FlowGuard CPVC is self extinguishing and will not support combustion—meaning it won't spread a fire like other plastics that continue to burn after exposed to a flame. Flowguard CPVC earned the best fire resistant rating for a non-metal material.
- **UV resistance:** Ultraviolet rays break down green pipe overtime, whereas FlowGuard CPVC can stand up to prolonged UV exposure.

NATURAL WEATHER EFFECTS ON PROPERTIES OF **CPVC MATERIAL FACT:**

Samples from locally manufactured CPVC commercial pipes have been naturally weathered for different periods in harsh weather conditions. Standard tensile and SEN fracture toughness tests were performed after natural exposure up to nine months. The test results showed that exposure had limited effects on the material. The damage due to weathering is mainly a surface phenomenon.

- **Easy, cost-effective and safe installation:** Solvent welding allows for fast and easy assembly using solvent cement. Solvent cement does not require heat or expensive, specialized tools, whereas PPR does. By eliminating heat, the threat of a fire hazard is neutralized.

THE GUIDE TO **DEBUNKING CPVC MYTHS**

FLOWGUARD® CPVC: RESIDENTIAL PIPING SYSTEMS YOU CAN TRUST.

FlowGuard CPVC continues to set the industry standard for residential piping systems. As the leader and pioneer in CPVC technology, FlowGuard Pipe and Fittings are the best performing polymer piping products in the market.

For questions about using FlowGuard CPVC pipe in residential plumbing systems, contact our team of piping systems consultants.

FLOWGUARD® PIPE & FITTINGS

RELIABILITY
TESTED FOR LIFE

FLOWGUARD®
PIPE & FITTINGS

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Nigeria: +2347037969873
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or email: cpvc.emena@lubrizol.com
to learn more.