

# TECHNO POLYMER

*High Technology*

**READY FOR**  
THE FUTURE

ENGLISH EDITION





## ABOUT US

In recent years, the demand for plastic materials from the market, including heavy-duty applications involving mechanical stress and high temperatures, has led to the development of technopolymers with increasingly higher performance. To meet these demands, CEME Group has invested in technical research, in line with its innovative spirit.

Today, CEME Group is indeed capable of manufacturing solenoid valves, valves, solenoid and rotary pumps with components made of technopolymer that offer superior performance compared to products developed and produced with metallic materials, ensuring compliance with ever-stringent technical and certification requirements.

# TECHNOPOLYMER

## PLASTIC PRODUCTS

### FROM METAL TO TECHNOPOLYMER

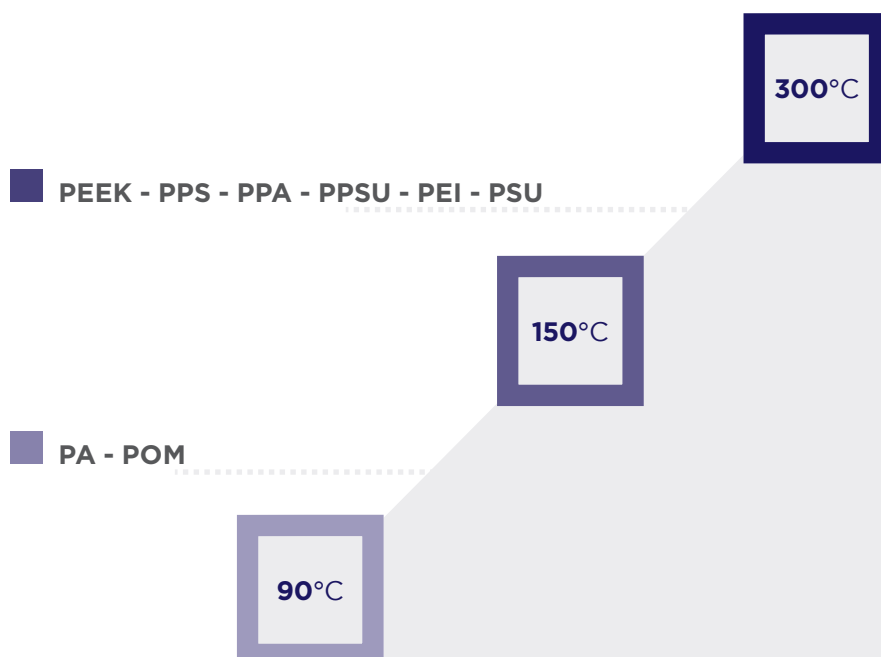
The growing concerns about the release of toxic substances into food and drinking water have over time led to a series of restrictions regarding the nature of many materials used in the food and beverage industry.

Among these is brass, which in 2012 received attention from regulatory bodies due to the **presence of lead** in some of its standard formulations. The main problem is the gradual leaching of this heavy metal into the water.

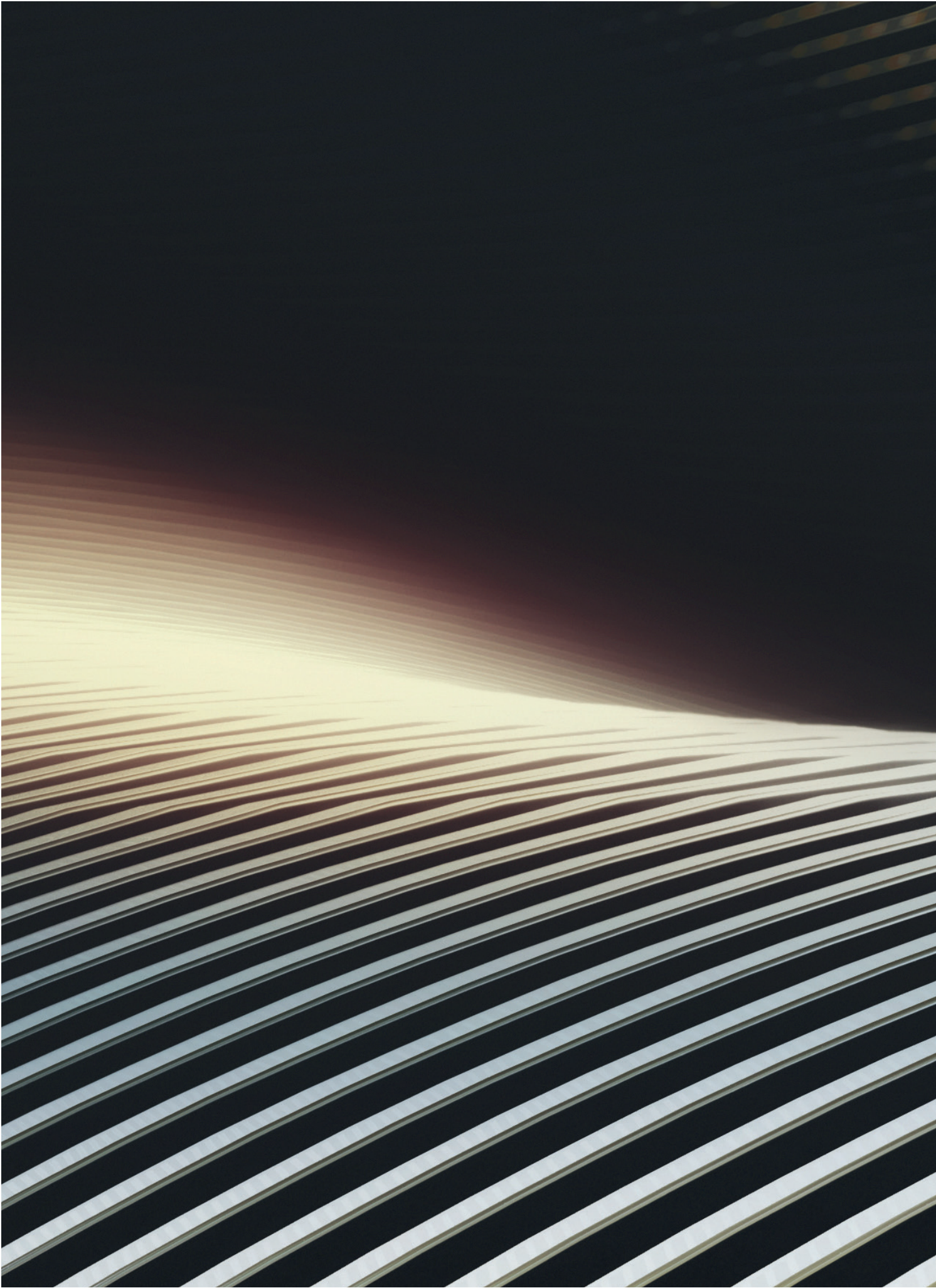
Brass alloys with low lead content have thus become the new standard for uses typically reserved for OT58 in the hydraulic and heating sectors.

The decision to adopt glass fiber-reinforced technopolymers for the innovative valve generation is made following careful analysis. The most interesting characteristic is their notable resistance to high temperatures. The specific chemical and physical nature, along with the structure of their macromolecules, make polymers particularly suitable for injection molding of complex geometries with thin thicknesses.

Due to the properties of these materials, their main features are not deteriorated following prolonged exposure to water or steam.







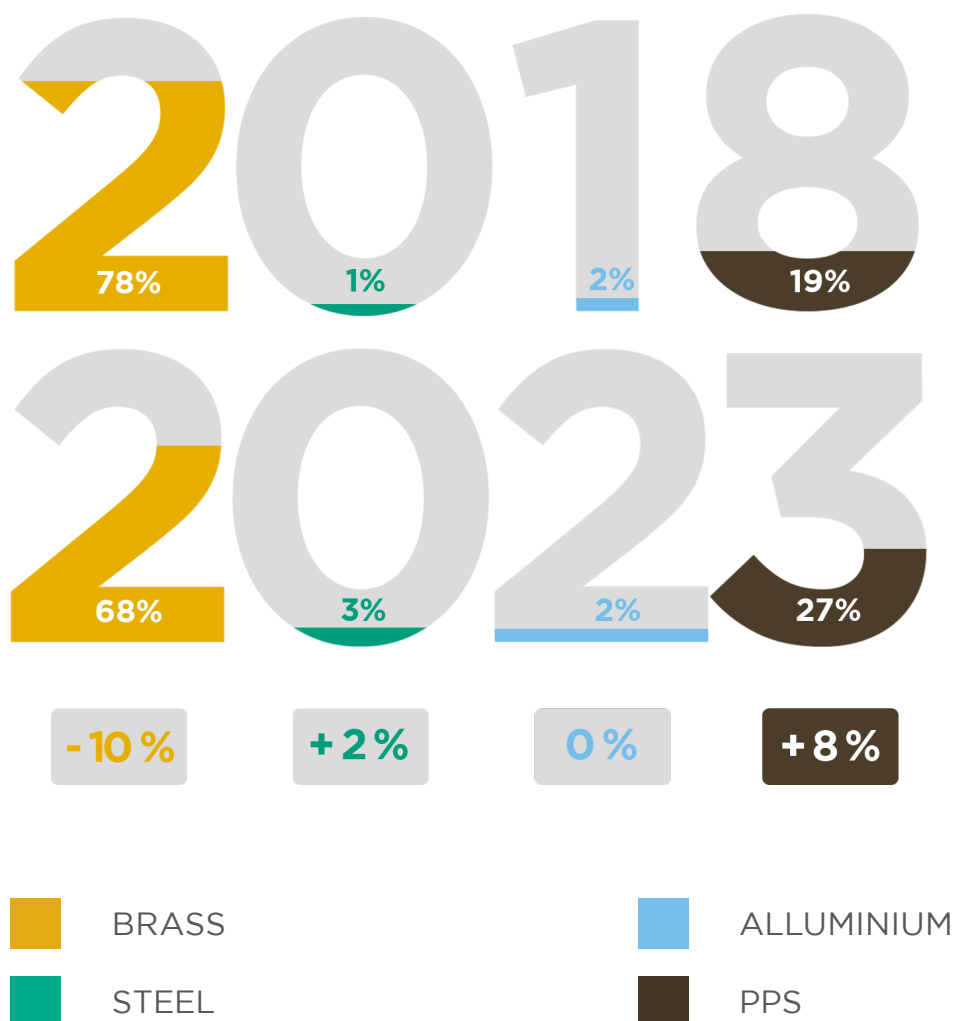




# TECHNOPOLYMER IN CEME GROUP

**CEME Group** has been a **pioneer in the use of technopolymer** for the production of solenoid valves.  
For over 10 years, **CEME Group** projects and realizes technopolymer products, with the aim to satisfy customers and markets, which needed innovative solutions to comply with the ever more demanding requests of the certifying bodies.  
An example of this trend is the 8% increase in the adoption of PPS products by our customers from 2018 to 2023, as an alternative to metallic materials

## RECENT YEARS PPS

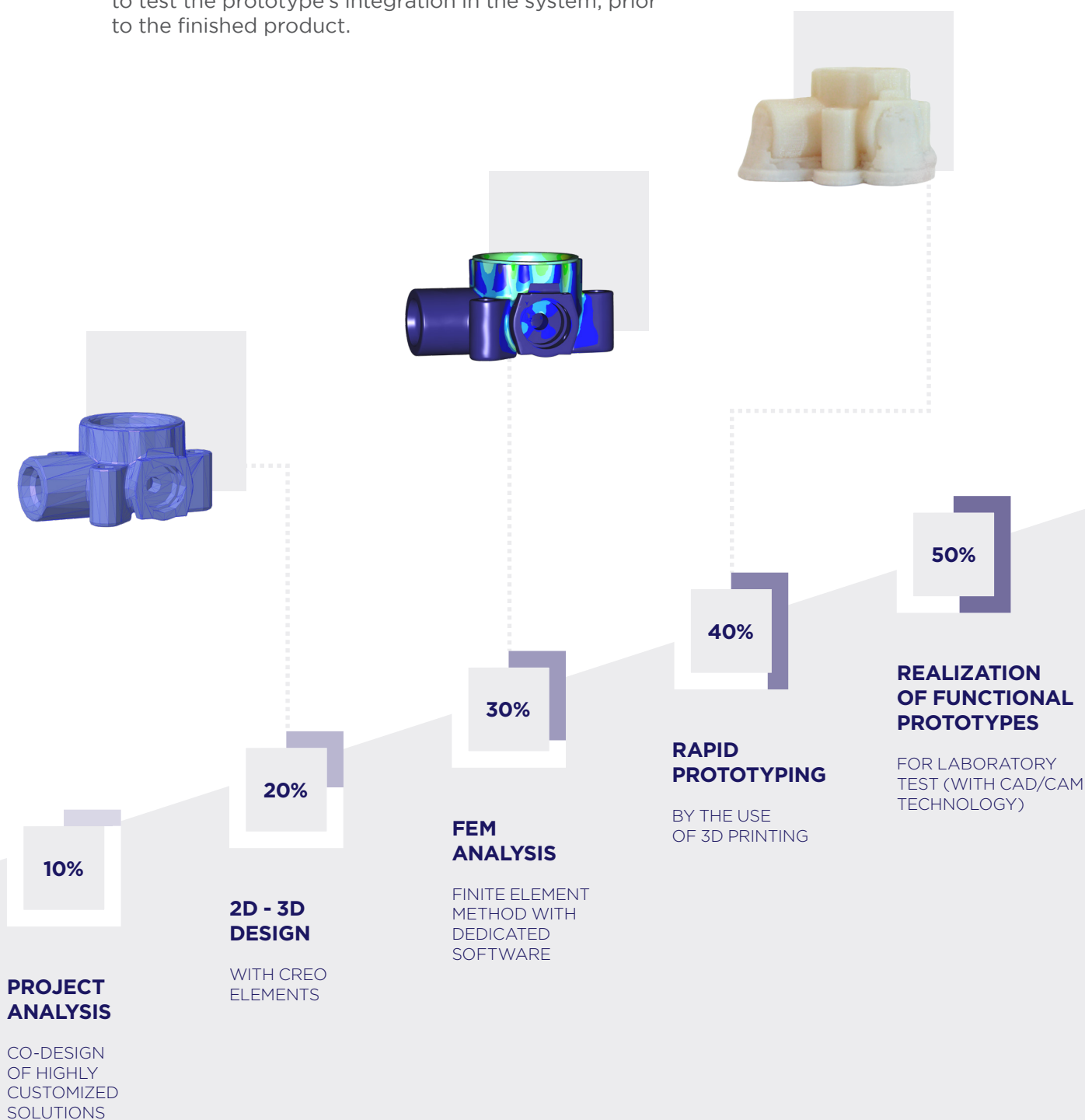


## DESIGN-TO-PRODUCT PROCESS

The company's distinctive quality is its ability to propose and develop **highly customized solutions**.

The technical department uses cutting-edge systems with 3D design, Comsol and Design of Experiments software, which allow the **design-to-product process** to be completed in a short time.

The rapid prototyping and 3D printing enable customers to test the prototype's integration in the system, prior to the finished product.



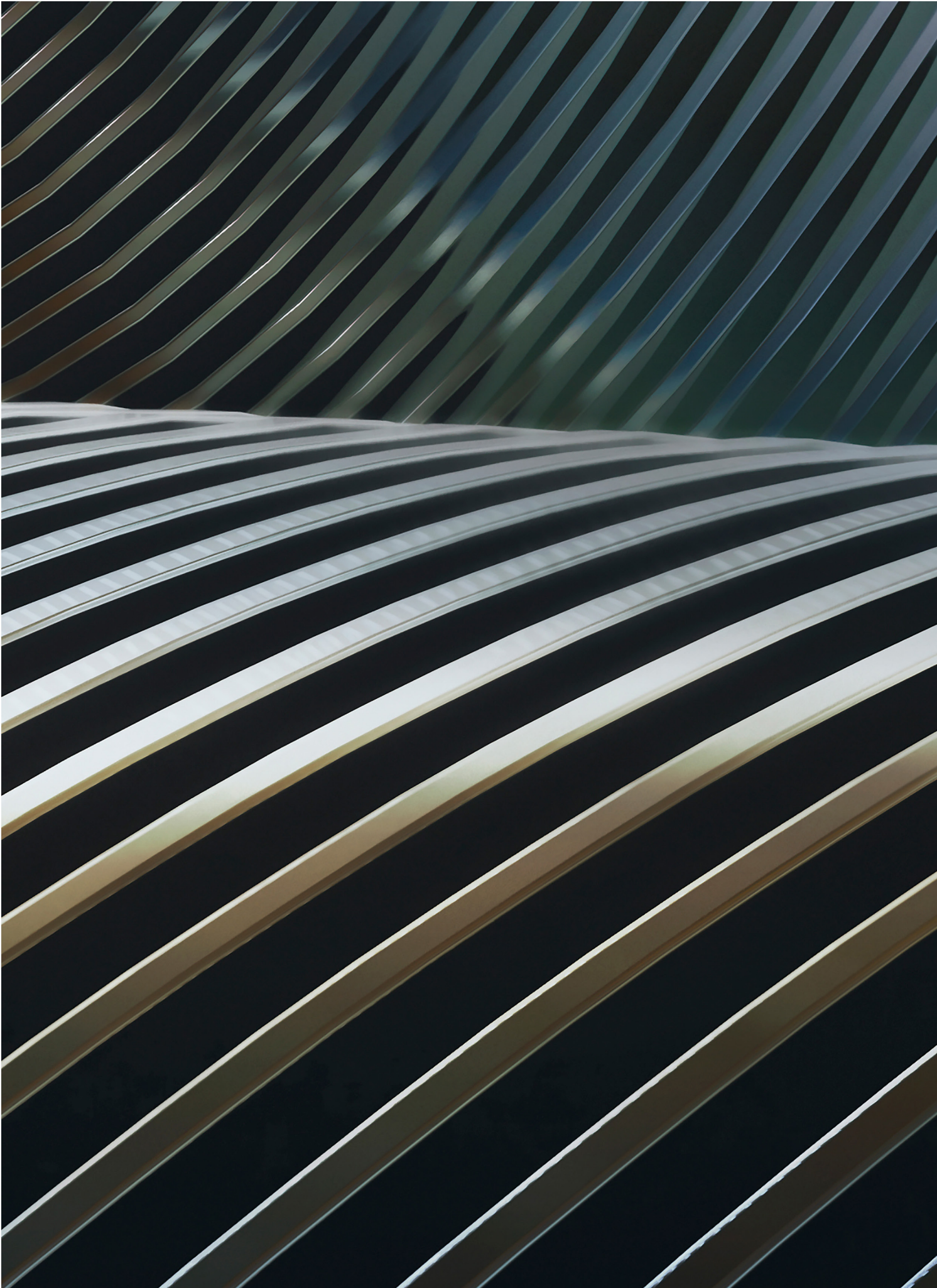


# DESIGN AND PRODUCTION

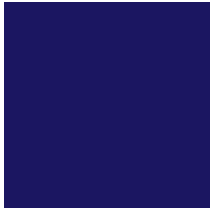


## CLOSE ATTENTION TO PRODUCTION

In these years **CEME Group** has acquired a **strong experience in the production of technopolymer solenoid valves** from the mechanical and engineering point of view, but also at the end of the production process with the improved manual assembly.







# PPS

## POLYPHENYLENE SULFIDE

Thanks to its characteristics, PPS products can obtain **food compatibility certification**, thus confirming the application possibilities in the coffee, food and vending fields.

This is confirmed by the trend to replace the traditional brass and steel components, with difficult food compatibility, with PPS components capable of performing the same functions and approved by certification bodies.

## THE ADVANTAGES OF PPS

- **ADAPTABILITY** TO INJECTION MOLDING
- **LOW** HYGROSCOPICITY
- **HIGH DIMENSIONAL STABILITY**
- **CONSISTENCY** IN REPEATABILITY
- **EXCELLENT PERFORMANCE** AT HIGH TEMPERATURES
- **HIGH MECHANICAL PERFORMANCE**



## MOCA COMPLIANCE

Technopolymers comply with European regulations No. 1935/2004, No. 2023/2006, No. 10/2011 (**MOCA**) regarding materials and articles in contact with food.



## NFS CERTIFICATION

Technopolymers can be used in contact with water as they comply with **NSF Standard 51/61**.

**CEME Group** is now able to offer **a complete customizable valves or manifolds range in technopolymer** as alternative to conventional stainless steel and brass materials.



## AM SERIES

AM Series solenoid valves are designed to work with the following kits: 2/2 N.C., 2/2 N.O. and 3/2 N.C. The MOPD for this series is 16 bar. The **available seals** are **FKM** (temperature range between -10°C and +140°C) and **NBR** (temperature range between -10°C and +90°C).



## JM SERIES

JM Series solenoid valves are equipped with **different inlet and outlet connections**. For this reason it is possible to connect different types of tubes: PTFE and PA tubes with **Push-In connections**, silicon tubes with hose connections, PTFE tubes with rapid connection and G 1/8 (male and female) to connect the various types of connectors, which can be added depending on the needs. These valves are available in 2/2 N.C., 2/2 N.O. and 3/2 N.C.





## JP SERIES

The main characteristic of JP Series solenoid valves is the **extreme compact size**. These valves are available in 2/2 or 3/2 ways N.C., and work with coils 2.5 W as well as 5 W for energy savings purposes and lower operating temperatures. The JP Series is available with Push-In connection, that allows fast and safely pipes connection without using additional fittings, locking keys and glues or sealing gaskets.



## AP SERIES

AP Series is a natural extension to complete the products range of solenoid valves with **bigger nominal sizes**. Also this Series is available with Push-In connection.

# MODULARITY

AM  
valveseries

+

JM  
valveseries

EASY

RAPID

ACCURATE

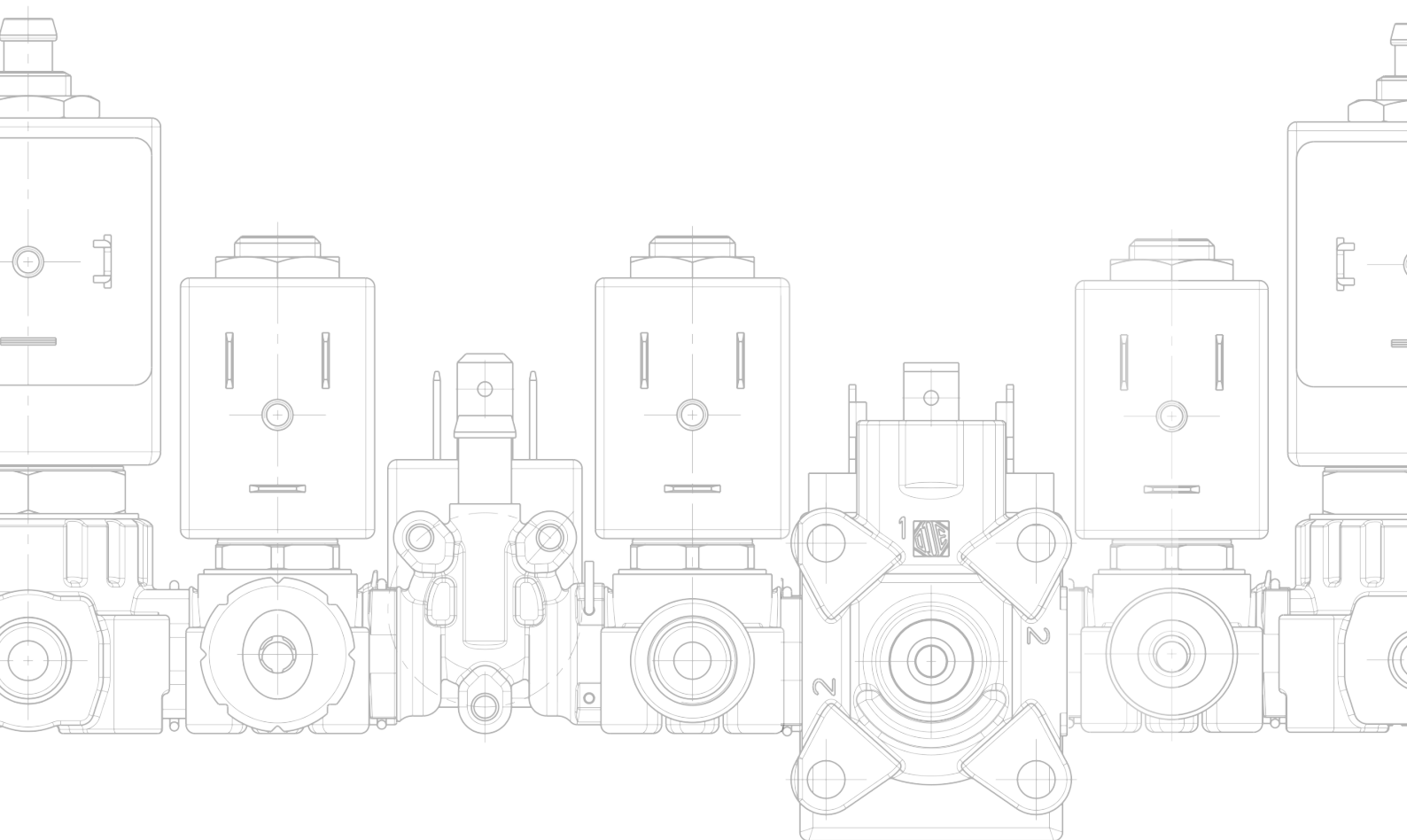




# MODULAR SYSTEM

The new technopolymer valves and manifolds range is designed and developed to allow **multiple uses** and to satisfy **every customers' requirement**.

Actually, **it is possible to mix different elements on the same manifold** as connections, kits and directions of inlet and outlet to create new ones, saving material, work and time and ensuring higher quality, repeatability in creation and faster response times.



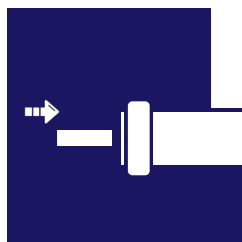
# PUSH IN CONNECTION

The Push-In fitting system stems from the **need for quick connections** with small polymer hoses where a threaded fitting would not be possible. These connectors allow the valve to be connected instantly by gently pressing on the hose.

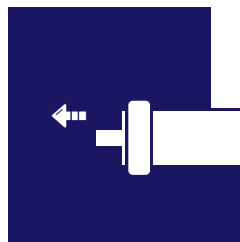
## TECHNICAL FEATURES

- **EASY** TO CONNECT
- **ECONOMIC** ADVANTAGE
- **HIGH QUALITY** MATERIALS
- **REDUCTION** IN MATERIAL WEAR
- **CLIP**

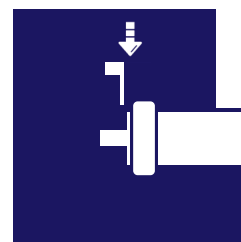
## HOW TO **USE**



**Insert the hose** past the clamp and internal O-Ring gasket up to the tube stop.

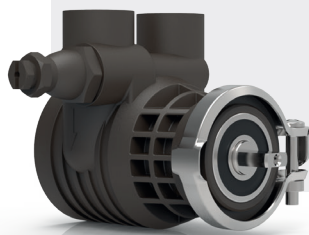


**Pull the hose slightly** to check that the clamp has actually engaged on the hose.



As a further option: **insert the locking clip** and carry out another check.





## ROTARY VANE PUMP

**MOCAREEL®** represents an important innovation in **CEME GROUP** product range thanks to the use of PPS, carbon graphite and stainless steel materials.

The technopolymer body has similar features to those of metal bodies.

The use of PPS (technopolymer) ensures the achievement of specific food grade certifications such as NSF and European Regulation No. 1935/2004.

**MOCAREEL**  
Rotary Vane Pump

**MOCAREEL** is also available for specific couplings with electric motors by means of a special built-in shaft and a 1 ¾ inch clamp.





# PPA

## POLYPHTHALAMIDE

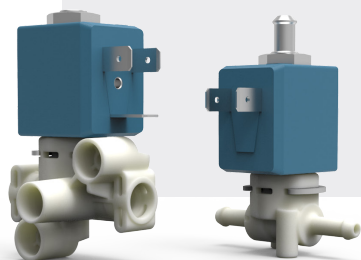
PPA, or Polyphthalamide, is a thermoplastic material known for its exceptional characteristics and advantages in industrial applications. It is a highly versatile and reliable material that finds use in a wide range of sectors due to its unique properties. Its ability to resist hydrolysis, high temperatures, chemicals, and its compliance for food contact make it an excellent choice for many critical applications.

## TECHNICAL FEATURES

- **HIGH** HYDROLYSIS RESISTANCE
- **EXCELLENT** HIGH-TEMPERATURE RESISTANCE
- **APPROVED** FOR DIRECT FOOD CONTACT AND WRAS
- **HIGH** CHEMICAL RESISTANCE
- **LONG LIFE** AND LOW MAINTENANCE COSTS

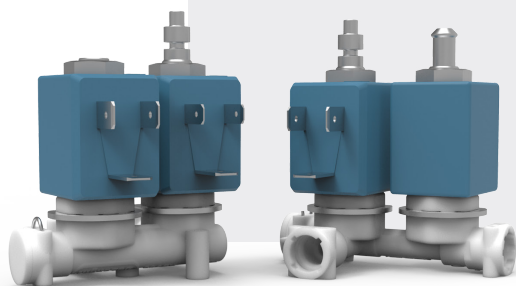
## FROM BRASS TO PPA IN THE COFFEE AND APPLIANCES SECTORS

In the 2000s, CEME achieved a significant milestone in the Home Appliance sector by being one of the pioneers in adopting PPA as a replacement for brass. This innovation not only enhanced product performance but also placed a greater emphasis on consumer safety. Our commitment to innovation has positioned us as leaders in the industry, and to this day, we remain dedicated to advancing towards more advanced and eco-friendly solutions.



## SERIES **V3 - V7**

Direct-Acting Normally Closed or Normally Open 2/2 and 3/2 Way Solenoid Valve, Ideal for the Beverage and Coffee Industry. These valves come with various connection types to meet diverse requirements.



## SERIES **CUSTOM**

Customized Body with Various Direct-Acting Normally Closed or Normally Open 2/2 and 3/2 Way Pilots, especially suited for the Beverage and Coffee Industry. These valves are available with various connection types to meet every requirement.

## APPLICATIONS



**BEVERAGE**



**WATER  
TREATMENT**



**STEAM**



**COFFEE**





# PA POLYAMIDE

Polyamides, commonly abbreviated as PA, represent a class of semi-crystalline thermoplastic materials widely used in the food and water management sector. They are known for their versatility, thermal properties and mechanical properties that make them ideal for a wide range of applications.

## TECHNICAL FEATURES

- **HIGH TENSILE STRENGTH**
- **APPROVED** FOR DIRECT FOOD CONTACT
- **STURDINESS AND DURABILITY**, IMPACT RESISTANCE
- **EXCELLENT WEAR AND** REPEATED FLEXURE RESISTANCE
- **OUTSTANDING ANTI-FRICTION PROPERTIES**

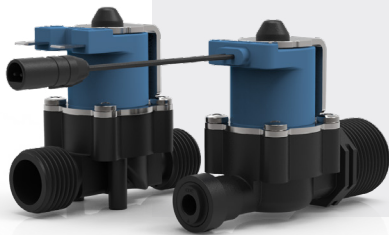
## ADVANCED POLYMERS AT THE CENTER OF INNOVATIONS

Recently, polymers like polyamide have been replacing metallic materials. This is due to their exceptional properties, such as mechanical strength and ease of processing. They offer good thermal resistance, better meeting the performance requirements associated with rising operating temperatures, replacing metals and difficult-to-process polymers. Using polyamides contributes to the development of increasingly sustainable solutions, an aspect that is becoming increasingly relevant in the selection of future materials.



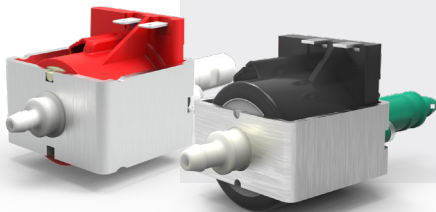
## SERIES **V7**

Direct-Acting Normally Closed 2/2 and 3/2 Way Solenoid Valve, Ideal for Beverage and Coffee Sector. These valves come with various connection types to meet every requirement.



## SERIES **WATER**

The CEME Solenoid Valve for water management market is a 2/2 way pilot operated valve with Ø11 mm and an hydraulic body in PA. Different power supply sources are available. It can work with pressure ranging from 0.1 to 10 bar.



## ULKA **SOLENOID PUMPS**

The ULKA solenoid Pumps are divided into two main series. The first series, which is larger, is used for applications that require high pressures and high flow rates.

The second series, which is more compact, is designed for applications that require low pressures and low flow rates.

Both series are suitable for a wide range of applications.

## **APPLICATIONS**



**BEVERAGE**



**WATER  
TREATMENT**



**COFFEE**

**PSU/PPSU/PESU/PEI**

**HIGH-TECH POLYMER**

**PSU**

**POLYSULFONE**



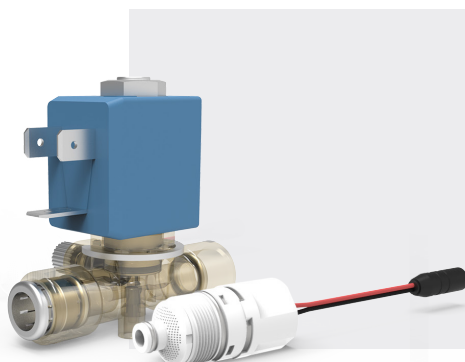
### **SERIES 21D - 21K - KP**

The 21D and 21K valve series are available in 2/2 ways N.C. and work with coils 8 W and 12 W. These are modular valves.

The KP valve series are available in 2/2 and 3/2 ways N.C. and work with coils 8 W, 12 W.

**PPSU**

**POLYPHENYLSULFONE**



### **SERIE V772 - CARTRIDGE SOLENOID VALVE**

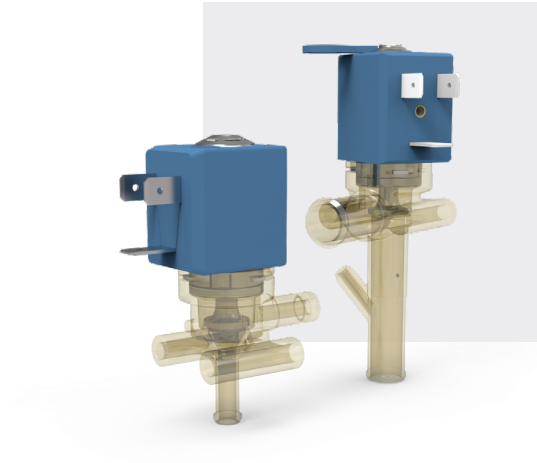
The V772 2/2-way solenoid valve, normally closed with direct-acting operation, is suitable for water management.

The solenoid cartridge for sanitary market is a 2/2 way servo controlled valve with Ø 5 mm. The main application is electronically controlled sanitary fittings, battery driven (latching 6V) and power supply (12V DC).





## **PESU** POLYETHERSULFONE



### DISPENSING VALVES **VD SERIES**

The VD Series 2/2 direct-acting drop valves allow complete fluid separation. They are compatible with the entire range of standard valve coils. Operates from 0 bar. Available in two versions with hose connector.

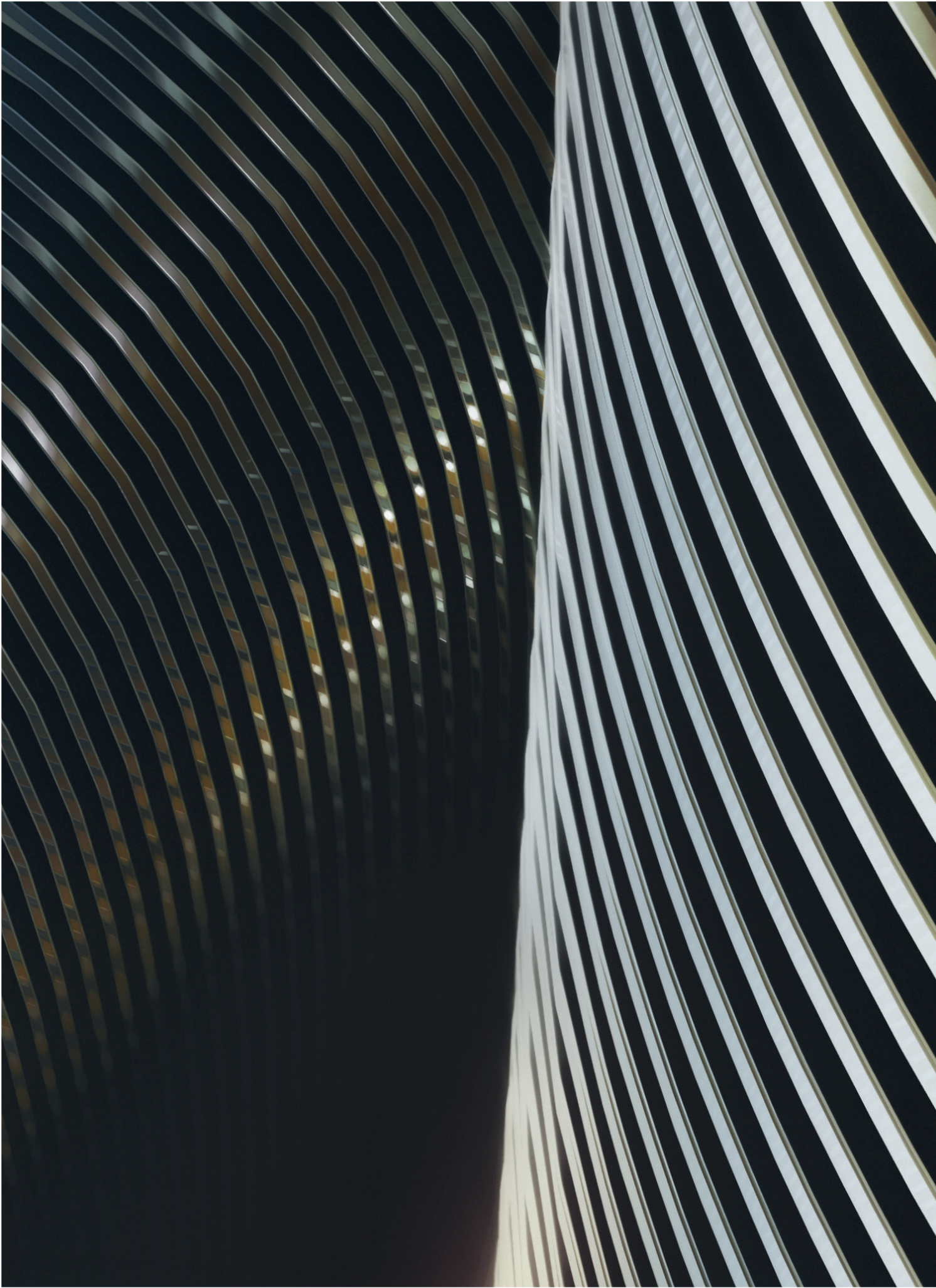


## **PEI** POLYETHERIMIDE



### **21QM** WITH PILOT CONTROL - LATCHING COILS

This solenoid valve is of latching coils type and is controlled by current impulses lasting approx. 20 msec. The solenoid valve opening or closure control depends on the signal polarity. A minimum operational pressure of 0,5 bar is required.



# APPLICATIONS AND CERTIFICATIONS

## APPLICATIONS



**AUTOMATION**



**AUTOMOTIVE**



**BEVERAGE**



**CHEMICAL**



**COFFEE**



**COMPRESSORS**



**MEDICAL**



**NAVAL**



**PACKAGING**



**WATER  
TREATMENT**



# **CONTACT**

---

## INFORMATION

[www.cemegroup.com](http://www.cemegroup.com)



Registered Office  
Viale dell'industria, 5  
27020 - Trivulzio (PV), Italia  
Tel. +39 038293011  
E-mail: [info@cemegroup.com](mailto:info@cemegroup.com)