



# GORE® Portable Electronic Vents

FOR PRESSURE EQUALIZATION

## W. L. Gore & Associates

Gore is a technology-focused materials science company whose passion for performance drives real-world change.

Since 1958, we've engineered solutions for a variety of mission-critical situations — medical, pharmaceuticals, biotechnologies, energy, aerospace, automotive, mobile electronics, music and semiconductors.

Gore products have remained at the forefront of creative solutions because they are engineered specifically for challenging applications requiring durable performance where other products fail.

## GORE® Vents

For almost thirty years, Gore has delivered venting solutions for applications such as automotive, electronic systems, telecommunications, security, heavy-duty vehicles, solar, lighting, chemicals and agricultural packaging.

Engineered with the latest materials and technology, Gore's vents are backed by years of research and testing to help extend product life and enhance reliability, meeting the demands of today's technology.

We don't just provide manufacturers with vents; we offer partnership and a complete venting solution, from product design to testing to support. The result: maximum performance in diverse challenging applications.

### Contact Us

For additional assistance, please contact a Gore representative.

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*Superb reliability  
for your waterproof  
mobile electronics*





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*“Rapid altitude and temperature changes can lead to unequal pressure between inside and outside of the mobile electronic housing..”*

## Superb reliability through exceptional balance of airflow and water protection

Smartphones and other mobile devices are an essential part of our lives, nevertheless they are sensitive to the strains of daily use.

### Setting the standard for device protection Transducer Bias

Rapid environmental changes can lead to pressure differentials between inside and outside of an electronic device, such as:

- Ambient environment temperature changes
- Aircraft take off and landing
- Compression of pressure sensitive touch screens

These changes can cause damage to seals and transducer bias.

### Failed Seals

Over time, cyclic pressure differential events create stress on housing seals which can allow water and contaminants to enter the device causing it to fail.

In mobile electronic devices with waterproof transducers, pressure buildup in an acoustic cavity or chamber creates a bias on compliant surfaces of the transducers such as speaker or pressure sensor. This effect can compromise acoustic quality and eventually damage the transducers.

## Portable Electronic Vents: The Gore difference

### Realize the Benefits of GORE® Pressure Vents

With over 20 years' experience and renowned technical expertise in ePTFE engineering, Gore offers exceptional performance through:

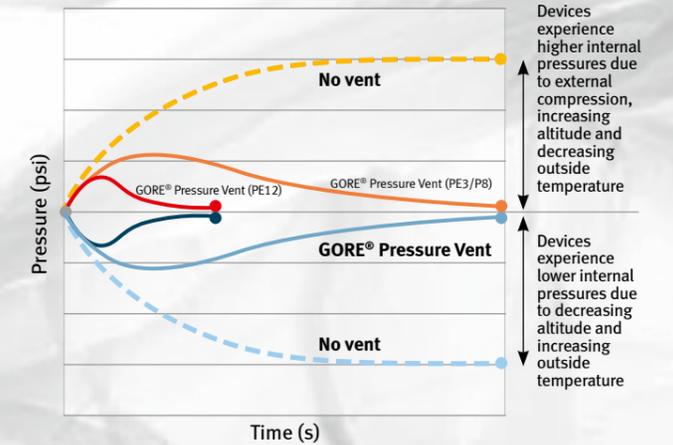
**Reduced transducer bias** in acoustic system cavities through rapid equalization and higher airflow

**Excellent Reliability** with immersion protection up to IPx8 standards

**Great protection** against dust and particles up to IP6x standard

**Design flexibility** with custom geometry

**Outstanding technical & global supply chain operations expertise** supporting more than 1 billion installations



Pressure Differentials for Sealed and Vented Enclosures

### Product Information

Characteristics/Performance	PE12	PE8	PE3	PE7
IP rating (IEC 529, 2nd) <sup>a</sup>	IP67, IP68 <sup>b</sup>	IP67 <sup>c</sup>		IP67, IP68 <sup>d</sup>
Typical airflow (dp = 70 mbar)	10,000 ml/min/cm <sup>2</sup>	3,300 ml/min/cm <sup>2</sup>		290 ml/min/cm <sup>2</sup>
Reference thickness <sup>e</sup>	0.24 mm	0.27 mm		0.34 mm
Adhesive type <sup>f</sup>	Silicone/Acrylic	Acrylic		Silicone
Membrane type	ePTFE			
Membrane characteristic	Oleophobic			
Membrane color	White		Black	
Support material	PET nonwoven			None
Part orientation	Internal mount with ePTFE facing environment			Mount on the interior or exterior of the housing
Adhesive temperature range	-40°C to 100°C			
RoHS <sup>g</sup>	Meet threshold requirements			

<sup>a</sup> IP ratings depend on housing design and part size

<sup>b</sup> Extended immersion testing: 1.5 meters water immersion for 30 minutes

<sup>c</sup> PE8 and PE3 can meet IP68 (1.5 m water @ 30 minutes) with certain custom design conditions. Please contact Gore associates for details

<sup>d</sup> Extended immersion testing: 2 meters water immersion for 1 hour. PE7 can also meet IP65 and IP66 under external mount condition only

<sup>e</sup> Actual thickness may vary due to the compressibility of nonwoven, ePTFE and adhesive layers

<sup>f</sup> A wide range of options available as a custom product.

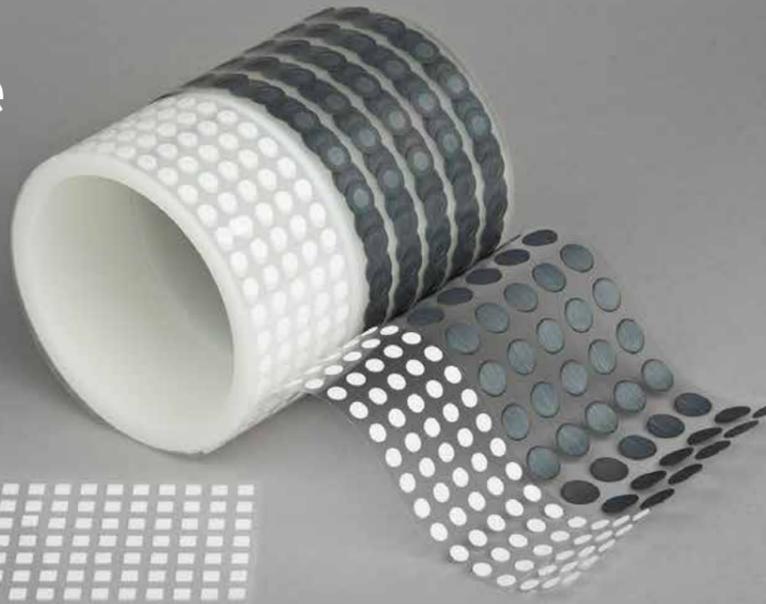
<sup>g</sup> To the best of our knowledge, the parts listed above do not have any restricted substances above the maximum concentration values listed in RoHS Directive 2011/65/EU. This information is based on our current level of knowledge and does not constitute a representation or warranty beyond those contained in our standard terms and conditions.



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Our pressure vents are designed for function and durability, and are adapted to suit all types of situations and products.



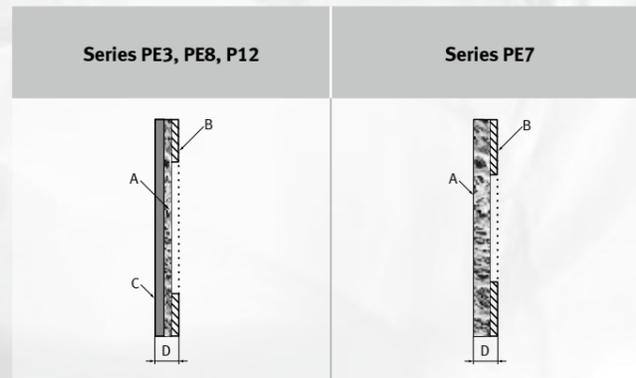
## Choosing the right vent

Predicting the conditions your product will encounter can be difficult, so our application engineers will work with you to ensure the right vent is selected.

### Factors that might be considered include:

- How your product will be used
- Minimum and maximum temperatures it may face
- Time between minimum and maximum temperature exposures
- Potential altitude changes
- The size and amount of open space in the enclosure
- Required liquid, particulate and contaminant protection levels
- Vent mounting surfaces and required adhesives

## Part Cross-Section



A: ePTFE membrane  
 B: Adhesive  
 C: Non-woven support material  
 D: Reference thickness

## Standard & Custom Part Availability

Gore application engineers can assist in selecting the right solution for your specific application requirements. GORE® Pressure Vents are available in both pre-cut shapes and sizes and in custom designs.

Standard parts are available as shown in this table.

Dimension (mm)		Part Number			
Inner Diameter	Outer Diameter	Series PE12	Series PE8	Series PE3	Series PE7
2.0	5.0	PE120205	PE80205	PE30205	—
3.0	6.0	PE120306	PE80306	PE30306	PE70306
5.5	10.2		PE80510	—	PE70510

## Why Choose GORE?

A wide range of high performance solutions with an advanced, innovative membrane at its core.

The Gore solution range is the product of over 20 years of industry expertise which continues to respond to the demands of an ever-changing world.

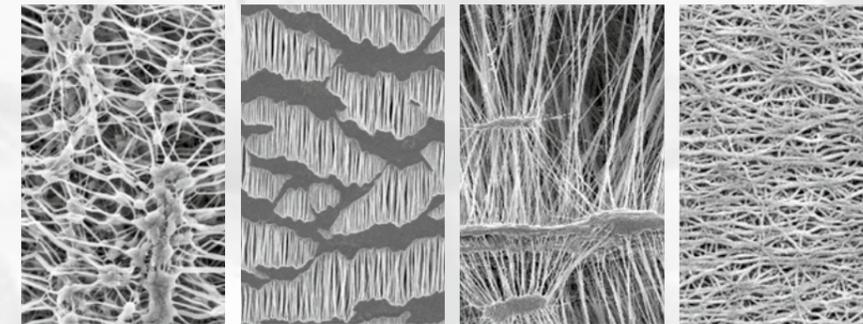
We offer the very best to our customers, with services that include:

- Global research, development and engineering support
- Materials for every environment and application
- Production flexibility
- Rapid sampling

### The GORE™ Membrane: The heart of our venting technology

What gives our vents their superior performance qualities is expanded polytetrafluoroethylene (ePTFE), the remarkably versatile polymer at the heart of our products.

Gore is the world leader in understanding ePTFE and its capabilities. For each implementation, we use the GORE™ Membrane to engineer an ePTFE membrane structure with a variety of different properties tailored for various challenging applications.



Our knowledge of fluoropolymers and our noteworthy engineering capabilities is at the heart of a wide range of remarkable materials.

### Acoustic transparency

A membrane thin and low mass enough for optimal sound transmission, responding quickly and easily to sound waves, for high quality acoustics.

### Pressure equalization

Optimal transmission properties ensure the membrane equalizes pressures rapidly, to avert seal stress and protect sensitive electronics from condensation.

### Immersion protection

Although thin, the membrane structure is engineered to repel water effectively, protecting devices against immersion up to IP68 standards.

### Fluid resistance

Oleophobic acoustic vents may help repel oils, sweat, cleaning solutions and other common fluids that can threaten mobile electronics.

### Global experience, global support

Gore provides worldwide facilities dedicated to testing and evaluating solutions and a team of engineers committed to delivering the right solution for your needs.