




**PVC  
PIPES**



A large-scale construction site showing a deep trench filled with long, blue PVC pipes. A worker in a high-visibility vest and hard hat is visible in the background, working on the pipes.

*The first PVC pipes were installed over 80 years ago, most of which are still in service today.*



PVC4Pipes is the ECVI's platform to communicate about the use of PVC in pipe systems in the global market. Our partners come from all parts of the industry's value chain. PVC4Pipes welcomes companies which produce raw materials – PVC resin and additives – and those which manufacture the wide array of PVC pipes and fittings available in today's market, as well as scientific and testing institutes and promotional associations.

- ✓ Safe
- ✓ Durable
- ✓ Recyclable
- ✓ Sustainable

#### **Water applications:**

- Drinking water
- Sewage and underground drainage
- Soil & waste
- Rainwater
- Hot & cold

#### **Other applications:**

- Cable protection
- Industrial
- Fire sprinklers
- Fittings





## PVC FOR ALL APPLICATIONS

PVC covers all common piping and fitting applications. From transportation of drinking water to advanced fire protection systems, and the fittings needed to connect the pipes, PVC provides the solution.



## PIPES FOR A CENTURY – AND BEYOND

The first PVC pipes were installed over 80 years ago, most of which are still in service today. Recent studies of excavated 50-year old pipes showed no deterioration and that they were fit for at least another 50 years. The expected lifespan of underground PVC piping systems is 100 years or more.

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*The physical properties of PVC allow designers a high degree of freedom when designing new products and developing solutions*

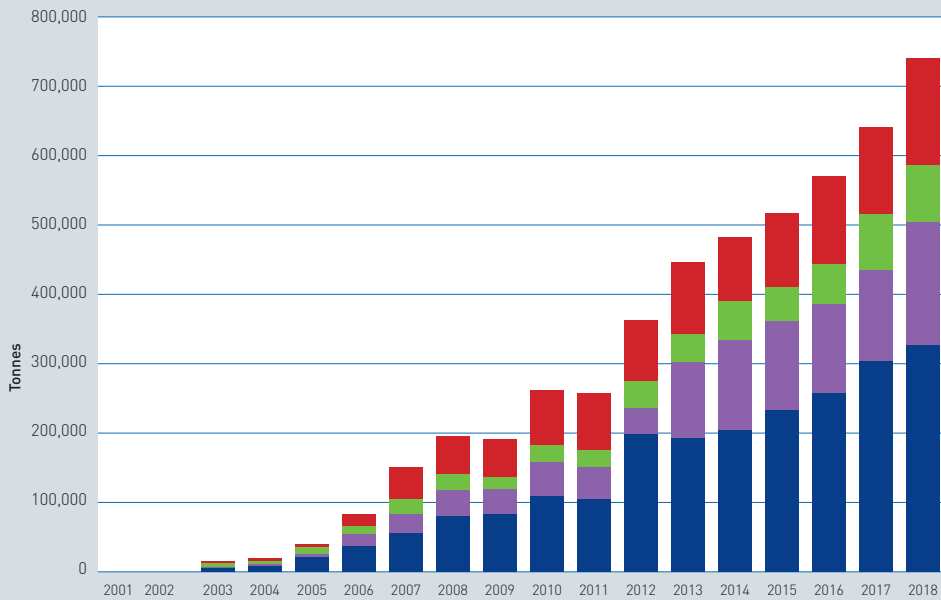
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## PVC PIPES CAN BE RECYCLED AGAIN AND AGAIN

Studies show that PVC pipes can be recycled multiple times without losing their technical properties. In 2018, more than 80,000 tonnes of PVC pipes and fittings were recycled through the VinylPlus programme. Recycled PVC's primary energy demand is up to 90% lower than virgin PVC production. For each kilo of recycled PVC, close to two kilos of CO<sub>2</sub> are saved.



## PVC recycled within the Vinyl 2010 and VinylPlus frameworks



Since 2000, over 5 million tonnes of PVC have been recycled in the EU, through VinylPlus, the Voluntary Commitment to sustainable development of the European PVC industry. The target is to recycle 800,000 tonnes per year by 2020.

- Cables
- Pipes & fittings
- Flexible PVC and films (including roofing and waterproofing membranes, flooring, coated fabrics, flexible and rigid films)
- Window profiles & related products

## ENVIRONMENTAL PERFORMANCE

PVC pipes are made from low-carbon polymers; they are light-weight, which means less energy is used when transported; they last long with a minimum of maintenance and are easily

recyclable. PVC pipes thus have clear environmental advantages over other materials. The good environmental performance of PVC pipes is confirmed by independent LCA (Life Cycle Analysis) studies: PVC pipes are at least equal to alternative products, and in many

cases show better results for total energy consumption, CO<sub>2</sub> emissions and failures. Moreover, the PVC industry is committed to continuously reduce its greenhouse gas emissions and energy consumption.

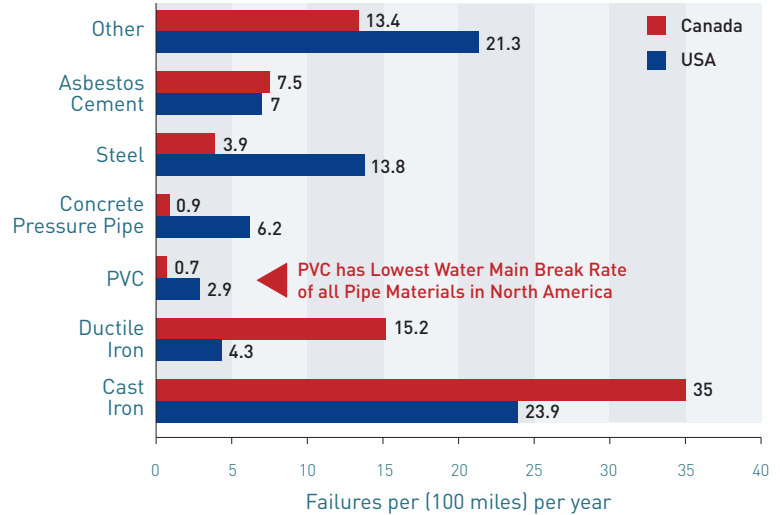


PVC has been a popular material for construction applications for decades due to its physical and technical properties which provide excellent cost-performance advantages



## PVC pipes show a much lower failure rate than other materials

### Comparison of Water Pipe Failure Rates in USA & Canada



(Source: "Water Main Break Rates in the U.S and Canada: A Comprehensive Study, April 2012," Utah State University, Buried Structures Laboratory)



**ECVM** (The European Council of Vinyl Manufacturers - [www.pvc.org](http://www.pvc.org)) is the organisation representing the six leading European PVC resin manufacturers, accounting for about 75% of the PVC resins produced in Europe.

A founding member of VinylPlus®, **ECVM** is committed to sustainable development, and to address and promote health, safety and environmental best practices over the PVC life cycle.

### A TODAY'S MATERIAL FOR THE FUTURE

Polyvinyl chloride, or PVC, is one of the most widely used polymers in the world. Because of its versatility, PVC is used extensively in a broad range of industrial, technical and everyday applications from pipes to blood bags. PVC is intrinsically a low carbon plastic: 57% of its molecular weight is chlorine derived from common salt, 5% is hydrogen and 38% is carbon. PVC also consumes less primary energy in the manufacturing phase than alternative materials.

Recyclability is another key characteristic of PVC and the PVC industry is committed to collect as much PVC waste as possible. Since 2000, over 5 million tonnes of PVC have been recycled in Europe through VinylPlus, the Voluntary Commitment to sustainable development of the European PVC industry. The Commitment also resulted in the replacement of lead-based stabilisers for PVC applications in the EU-28 by the end of 2015.

# 10 key reasons to choose PVC pipes

<b>SAFE</b>	<p><b>1 PVC PIPES ARE SAFE IN USE</b> PVC pipes have been used for more than 80 years. They do not corrode, and bacterial growth is very low.</p>
<b>DURABLE</b>	<p><b>2 PVC PIPES ARE DURABLE</b> Studies show that underground PVC pipes can last at least 100 years.</p>
	<p><b>3 PVC PIPES HAVE THE BEST FAILURE STATISTICS TRACK RECORD</b> See graph on the left hand page.</p>
	<p><b>4 PVC PIPES OFFER THE BEST VALUE FOR MONEY THROUGH LIFE CYCLE</b> PVC pipes perform very well for long periods at low costs: not only 30% saving in initial cost can be achieved compared to ductile iron pipes, but PVC pipes also guarantee lower maintenance costs compared to traditional materials.</p>
<b>RECYCLABLE</b>	<p><b>5 RECYCLING</b> PVC is easily recyclable. At end-of-life, PVC pipes are being recycled into new products. In 2018, more than 80,000 tonnes of PVC pipes and fittings were recycled in the EU-28.</p>
	<p><b>6 VINYLPLUS® IS THE EUROPEAN PVC INDUSTRY'S SUSTAINABILITY PROGRAMME</b> VinylPlus targets five sustainability challenges for PVC, including sustainable use of additives. As a result, heavy-metal stabilisers are no longer used in PVC pipes manufactured in Europe. Furthermore, through VinylPlus, over 5 million tonnes of PVC have been recycled since 2000. <a href="http://www.vinylplus.eu">www.vinylplus.eu</a>.</p>
<b>SUSTAINABLE</b>	<p><b>7 PVC USES LESS FOSSIL FUEL AND PRIMARY ENERGY</b> PVC is made from 57% chlorine, 5% hydrogen and 38% carbon. PVC thereby uses much less fossil fuel and primary energy than alternative materials.</p>
	<p><b>8 PVC HAS A LOW CARBON FOOTPRINT</b> PVC's carbon footprint (material production) is 1.9 kg CO<sub>2</sub> eq / kg. Recycled PVC has a carbon footprint of only 0.3 kg CO<sub>2</sub> eq / kg.</p>
	<p><b>9 PVC PIPES DEMONSTRATE EXCELLENT ENERGY EFFICIENCY</b> The smooth surface of PVC pipes ensures better flow and requires less pumping energy.</p>
	<p><b>10 PVC PIPES OFFER EXCELLENT ENVIRONMENTAL DECLARATIONS</b> PVC pipes have significantly lower environmental impact than other materials.</p>

## OUR PARTNERS

PVC4Pipes partners come from all parts of the PVC value chain and beyond.

### Resin producers

Ercros, INOVYN, Shin-Etsu/Cires, VESTOLIT, Vinnolit, Vynova

### Pipe producers

Molecor

### Additive suppliers

ESPA (European Stabiliser Producers Association)

### Machinery producers

Hultec

### Associations

CPPA, KRV, PVC Pipe Association, STR-PVC

### Communication bodies

AGPU, API, PVC Forum Italia, PVCH

### Institutes

Becetel, KIWA, LKT TGM

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