Innovative material science for pipe applications – from a global technology leader
Plastics – the right choice for pipe

Reliable, efficient, and safe piping systems are essential to everyday life throughout the world. Today’s pipelines are made from a variety of materials – from traditional to high performance. However, the pipe materials we’ve relied on for so many years, such as metal, concrete, and clay, are less than suitable for many pipe applications – both in terms of installation efficiency and long-term durability. To increase the overall performance of pipelines, engineers are choosing various plastics for some or all of the following advantages:

• Leak-free and corrosion-free performance
• Greater durability for longer lifetime potential
• Greater flexibility for ease of installation
• Easy fusion (to form one continuous system)

Through proven innovation and experience, commitment to the pipe industry, global reach, and a range of performance differentiated resins, Dow believes in the long-term future of plastic pipe. We have the knowledge and capabilities to provide the latest technologies in a variety of pipe markets, including:

• Potable water
• Natural gas distribution
• Hot and cold water
• Oil and gas production
• Mining
• Industrial chemicals
• Drip irrigation
• Drain, waste, and vent
• Telecommunications conduit
• Sewer and drainage

Innovation

Dow operates pipe technology R&D centers around the world. We are constantly working on improving existing resins and developing new materials to help piping...
systems of all kinds operate at maximum performance, for generations to come. Some of our innovative breakthroughs include:

**INSITE™ Technology** – taking polymer development to the next level to create products worldwide with unique combinations of performance and processability.

**UNIPOL™ II Process Technology** – a staged reactor, gas phase process used in North America to create bimodal resins with enhanced performance attributes.

**CONTINUUM™ DGDA-2490 Bimodal Polyethylene Resins** – the first North American resins for pressure pipe to be given a 100-year pressure rating at 20°C\(^1\) and the first ISO PE100 resins to be listed at elevated temperatures. (Dow also offers CONTINUUM DGDA-2492 Bimodal Polyethylene Resins for heavy wall pipes.)

**DOWLEX™ Polyethylene Resins** – now offered as PE-RT (Polyethylene of Raised Temperature) resins, are the fastest growing resins in Europe, the Middle East, Africa, and Asia for hot and cold water pressure pipe. (DOWLEX PE-RT Resins have recently been added to our offering in North America for radiant floor heating applications.)

**INSPIRE™ Performance Polymers** – a family of propylene-based products ideal for non-pressure pipes, providing a combination of distinct performance and processing benefits.

\(^{1}\)Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow

\(^{1}\)According to PPI TR-4 100-year pressure rating at 20°C MRS 10.0 using ISO 9080
Experience

We have more than 25 years of experience in the pipe industry and work with the world’s leading pipe extruders and specifiers to develop superior pipe products.

And, because we understand that not all regions of the world have the same needs or the same standards for specifying resins, Dow has taken an active and contributing role in the top local and global pipe industry associations and standards organizations.

Global

By leveraging regional expertise centers, manufacturing sites, and various joint venture partnerships in Europe, Latin America, North America, the Middle East, Asia Pacific, and Africa, Dow can support the technical needs of varied pipe and profile customers, almost anywhere in the world. If you have a question, we have experts with answers. If you have a need, we have a resin to fulfill it.

Commitment

Dow is the largest supplier of polyethylene; a top ten supplier of polypropylene; and a leading supplier of ABS. With vast manufacturing capabilities, Dow is able to provide industry essential and performance differentiated resins to virtually all pipe market segments, with increased focus on:

- Pressure pipe
- Non-pressure pipe
- Hose, tube, and tape
- Fittings
Resins from Dow are used for a wide range of pipe applications throughout the world, including underfloor heating in homes, and heating and cooling systems for roadways.
AMPLIFY™ Functional Polymers are now offered for polyethylene three-layer steel pipe coating systems in Latin America. These modified polyethylene adhesive resins provide robust, high peel strength performance with different epoxy and High Density Polyethylene (HDPE) combinations. They have excellent mechanical properties and Environmental Stress Crack Resistance (ESCR), and a broad processing temperature range.

CONTINUUM™ Bimodal Polyethylene Resins are a family of performance differentiated polyethylene resins for pipe applications in North and South America. They provide longer extrapolated life expectancy, enhanced integrity, and outstanding strength for pressure pipe and fittings used in water conveyance; natural gas distribution; mining; and oil, gas, and chemical processing. The CONTINUUM product family includes ISO PE100 and ASTM PE4710 rated materials.

DOW™ High Density Polyethylene (HDPE) Resins are manufactured via gas phase, solution, and slurry processes. Across most of the world, DOW HDPE Resins are considered industry standard pipe materials, offering superior toughness and stress crack resistance for corrugated and pressure pipe, and telecommunications conduit.

DOW™ Linear Low Density Polyethylene (LLDPE) Resins are used in hose and tube applications to deliver excellent low temperature toughness and stress crack resistance, and as a blending component to improve the physical properties of other product grades, including Very Low Density Polyethylene (VLDPE) and HDPE resins, and Ethyl Vinyl Acetate (EVA) and Ethylene Ethyl Acrylate (EEA) flexible copolymers.

DOWLEX™ Polyethylene Resins are now offered under a new classification called PE-RT (Polyethylene of Raised Temperature). They are available from Dow in both Types I and II and are transforming the hot and cold water pipe market in Europe, the Middle East, Africa, and Asia. DOWLEX PE-RT Resins are also offered in North America for radiant floor heating applications in multi-layer Ethyl Vinyl Alcohol (EVOH) and aluminum composite structures. These resins have been used for several years in aluminum composite structures for domestic potable water applications. DOWLEX Polyethylene Resins offer competitive advantages for pipe manufacturers and installers, and are also being used in
developing applications such as industrial pipe, and road heating and cooling systems.

**INSPIRE™ Performance Polymers** are propylene-based products from Dow, ideal for non-pressure pipe, including corrugated pipe, tubing, structured wall pipe, and telecom conduit. In addition to improved processability, these high potential, high performance polymers also offer improved impact resistance, high stiffness and strength, and good service temperature.

**MAGNUM™ ABS Resins** deliver toughness and exceptional processability at a low cost. These extremely versatile Acrylonitrile Butadiene Styrene (ABS) resins flow and process easily, with low mold shrinkage, tight tolerances, and minimal warping. They improve consistency and cycle times and promote manufacturing efficiency. MAGNUM ABS Resins are ideal for a wide range of applications, including pipe and fittings.

For more information on how polyethylene, polypropylene, or ABS resins from Dow can benefit your pipe applications, contact your Dow representative at one of our locations listed on the back of this brochure. And, download data sheets for the resins listed here at www.dowplastics.com.
For more information on the products, innovations, expertise, and other services available from Dow's Plastics business group in your region, please visit our web site at www.dowplastics.com or contact us as indicated below.

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b. use in cardiac prosthetic devices regardless of the length of time involved; (Cardiac prosthetic devices include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass assisted devices);
c. use as a critical component in medical devices that support or sustain human life; or
d. use specifically by pregnant women or in applications designed specifically to promote or interfere with human reproduction.

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