



VOLSTAR™ MDPE PIPES

By Malpani Pipes and Fittings Limited

Introduction

Malpani Pipes and Fittings Limited is proud to introduce our premium range of MDPE pipes under the brand name Volstar. Designed to meet the highest standards of quality and performance, Volstar MDPE pipes comply with ISO 4427 Part 2:2019, ensuring they provide reliable and efficient solutions for water supply systems. Our commitment to excellence and innovation makes Volstar MDPE pipes the ideal choice for a variety of applications.



Why Choose Volstar MDPE Pipes?

1. High-Quality Material:

Volstar MDPE pipes are manufactured using Medium-Density Polyethylene (MDPE), known for its balance between flexibility and strength. MDPE is resistant to cracking and offers superior impact resistance, making it suitable for water supply applications.

2. Compliance with ISO 4427 Part 2:2019:

Our MDPE pipes conform to the international standard ISO 4427 Part 2:2019, ensuring they meet the stringent requirements for potable water supply systems. This compliance guarantees safety, reliability, and performance.



3. Durability and Longevity:

MDPE pipes are designed to last, with a life expectancy exceeding 50 years under normal operating conditions. They can withstand varying pressures and temperatures, ensuring consistent performance over time.

4. Ease of Installation:

Volstar MDPE pipes are lightweight and flexible, making them easy to handle and install. They can be joined using a variety of methods, including butt welding, electrofusion, and compression fittings, ensuring secure and leak-proof connections.

5. Cost-Effective Solution:

Due to their long lifespan and minimal maintenance requirements, MDPE pipes offer a cost-effective solution for water supply systems. Their durability reduces the need for frequent replacements and repairs, resulting in significant cost savings over time.

Applications of Volstar MDPE Pipes

Volstar MDPE pipes are versatile and suitable for a wide range of applications, including:

1. Potable Water Supply:

Ideal for transporting drinking water, ensuring safe and clean water delivery to residential, commercial, and industrial users.

2. Irrigation Systems:

Suitable for agricultural irrigation, providing efficient water distribution to crops and plantations.

3. Gas Distribution:

Used for the safe and reliable distribution of natural gas and LPG.

4. Industrial Fluid Transfer:

Perfect for transporting various industrial fluids, including chemicals and wastewater.

Technical Specifications

1. Dimensions and Sizes:

Volstar MDPE pipes are available in a wide range of sizes, from 20 mm to 630 mm in diameter, catering to various application needs. Standard lengths are 6 meters and 12 meters, with custom lengths available upon request.

2. Pressure Ratings:

Our MDPE pipes are available in different pressure ratings, including PN 6, PN 8, PN 10, PN 12.5, and PN 16, allowing for use in different pressure conditions.



3. Standards and Certifications:

Volstar MDPE pipes comply with ISO 4427 Part 2:2019 standards, ensuring they meet international quality and performance benchmarks. Our manufacturing processes adhere to ISO 9001:2015 quality management systems.

4. Chemical Resistance:

MDPE is inherently resistant to a wide range of chemicals, making Volstar pipes suitable for transporting various fluids without degradation.

5. Temperature Tolerance:

Volstar MDPE pipes can operate efficiently in temperatures ranging from -20°C to +40°C, ensuring reliability in diverse climatic conditions.

Manufacturing Process

At Malpani Pipes and Fittings Limited, we utilize advanced manufacturing facilities to produce Volstar MDPE pipes. Our manufacturing process includes:

1. Extrusion:

MDPE resin is melted and extruded through a die to form continuous pipes. The extrusion process ensures uniformity in pipe wall thickness and diameter.

2. Cooling:

The extruded pipes are rapidly cooled using water baths to solidify the MDPE material, maintaining the pipes' structural integrity.

3. Cutting:

Once cooled, the pipes are cut into the required lengths using automated cutting machines, ensuring precise and consistent lengths.

4. Quality Testing:

Each batch of pipes undergoes rigorous quality testing to ensure they meet ISO 4427 Part 2:2019 standards. Tests include checking for dimensional accuracy, pressure resistance, and chemical resistance.

Advantages of Volstar MDPE Pipes

1. Leak-Proof Joints:

Volstar MDPE pipes can be joined using various welding techniques, creating a seamless and leak-proof joint. This minimizes the risk of leakage and ensures the integrity of the water supply system.



2. Flexibility and Toughness:

The flexibility of MDPE allows the pipes to absorb shocks and vibrations, reducing the risk of damage from ground movement or external impacts.

3. Smooth Internal Surface:

The smooth internal surface of Volstar MDPE pipes reduces friction, enhancing flow capacity and preventing the buildup of sediments and blockages.

4. Eco-Friendly:

MDPE is a recyclable material, making Volstar pipes an environmentally friendly option. They can be recycled and repurposed at the end of their life cycle.

Detailed Applications of Volstar MDPE Pipes

Volstar MDPE pipes are specifically engineered to serve a wide range of applications, ensuring versatility and reliability in different environments. Here is a detailed overview of their applications:

1. Potable Water Supply:

Volstar MDPE pipes are ideal for transporting potable water. The pipes are designed to ensure that the water remains safe and clean from the point of distribution to the end-user. Their chemical resistance ensures that no contaminants leach into the water, maintaining its purity and safety.

2. Agricultural Irrigation:

The flexibility and durability of Volstar MDPE pipes make them perfect for agricultural irrigation systems. They can easily be installed in various terrains, providing consistent water flow to crops. This enhances irrigation efficiency and supports sustainable agricultural practices.

3. Gas Distribution:

Volstar MDPE pipes are also suitable for the distribution of natural gas and liquefied petroleum gas (LPG). Their toughness and leak-proof joints ensure the safe and reliable transportation of gas, minimizing the risk of leaks and enhancing safety.

4. Industrial Fluid Transfer:

In industrial settings, Volstar MDPE pipes are used to transport a wide range of fluids, including chemicals and wastewater. Their resistance to various chemicals and high-pressure capabilities make them suitable for demanding industrial applications.

5. Mining Applications:

In mining operations, the transportation of slurry and water is critical. Volstar MDPE pipes are well-suited for these applications due to their high abrasion resistance and ability to withstand harsh mining environments.



Technical Specifications in Detail

Understanding the technical specifications of Volstar MDPE pipes helps in selecting the right product for your specific needs. Here's an in-depth look at the technical aspects:

1. Dimensions and Sizes:

Volstar MDPE pipes come in a wide range of diameters, from 20 mm to 630 mm. The availability of various sizes ensures that there is a suitable pipe for every application, from small residential water lines to large-scale industrial fluid transportation.

2. Pressure Ratings:

Our MDPE pipes are designed to withstand different pressure conditions. The available pressure ratings include PN 6, PN 8, PN 10, PN 12.5, and PN 16. This range ensures that the pipes can be used in systems with varying pressure requirements, from low-pressure irrigation systems to high-pressure industrial applications.

3. Compliance and Certifications:

Volstar MDPE pipes comply with ISO 4427 Part 2:2019 standards. This international standard specifies the requirements for pipes made from polyethylene (PE) for water supply. Compliance ensures that the pipes meet stringent quality and safety standards. Additionally, our manufacturing processes adhere to ISO 9001:2015 quality management systems, further ensuring the highest level of quality control.

4. Chemical and Temperature Resistance:

MDPE is inherently resistant to a wide range of chemicals, including acids, alkalis, and salts. This makes Volstar MDPE pipes suitable for transporting a variety of fluids without the risk of degradation. Furthermore, these pipes can operate efficiently in temperatures ranging from -20°C to +40°C, making them reliable in diverse climatic conditions.

Detailed Manufacturing Process

Our state-of-the-art manufacturing facilities ensure that Volstar MDPE pipes are produced to the highest standards. Here's a closer look at our manufacturing process:

1. Extrusion:

The manufacturing process begins with the extrusion of MDPE resin. The resin is melted and extruded through a die to form continuous pipes. This process ensures that the



pipes have uniform wall thickness and diameter, which are critical for their performance and reliability.

2. Cooling:

After extrusion, the pipes are rapidly cooled using water baths. This step is crucial for solidifying the MDPE material and maintaining the structural integrity of the pipes. Proper cooling ensures that the pipes have the necessary strength and durability.

3. Cutting:

Once cooled, the pipes are cut into the required lengths using automated cutting machines. This ensures that each pipe is of the exact length specified, with precise and consistent dimensions.

4. Quality Testing:

Quality control is an integral part of our manufacturing process. Each batch of pipes undergoes rigorous testing to ensure they meet ISO 4427 Part 2:2019 standards. This includes tests for dimensional accuracy, pressure resistance, and chemical resistance. Our commitment to quality ensures that our pipes perform reliably in all applications.

Installation Guidelines

Proper installation is crucial to the performance and longevity of Volstar MDPE pipes. Here are some detailed guidelines to ensure correct installation:

1. Trenching:

Start by excavating a trench of appropriate width and depth to accommodate the pipe. The trench bottom should be smooth and free from sharp objects that could damage the pipe. Proper trenching is essential to provide a stable base for the pipes and to protect them from external damage.

2. Bedding:

Lay a bedding layer of sand or fine gravel at the bottom of the trench. This layer provides a stable and supportive base for the pipe, ensuring that it is properly cushioned and protected. The bedding material should be evenly spread to create a uniform surface.

3. Pipe Laying:

Carefully lay the pipes in the trench, ensuring they are properly aligned. Use appropriate tools and equipment to avoid damaging the pipes during installation. Proper alignment is crucial to ensure that the pipes function correctly and to prevent leaks.



4. Joining:

Join the pipes using suitable methods such as butt welding, electrofusion, or compression fittings. Follow the manufacturer's guidelines for joining to ensure secure and leak-proof connections. Proper joining techniques are essential to maintain the integrity of the pipeline and to prevent leaks.

5. Backfilling:

After the pipes are laid and joined, backfill the trench with sand or fine gravel up to the crown of the pipe. Compact the backfill material to provide additional support and stability. Proper backfilling helps to protect the pipes from external forces and to maintain their alignment.

6. Testing:

Conduct pressure testing to ensure the integrity of the installed pipe system. This involves filling the pipes with water and checking for any leaks or pressure drops. Proper testing ensures that the pipes are functioning correctly and that there are no leaks.

Maintenance and Care

Volstar MDPE pipes require minimal maintenance due to their durable and resilient nature. However, regular inspection and maintenance can further extend their lifespan and ensure optimal performance:

1. Periodic Inspections:

Conduct regular inspections of the water supply system to check for any signs of damage, leaks, or blockages. Early detection of issues can prevent major problems and costly repairs. Inspections should be carried out regularly to ensure that the system is functioning correctly.

2. Cleaning:

Use appropriate cleaning methods to remove any sediments or blockages within the pipes. High-pressure water jetting or mechanical cleaning tools can be used to keep the pipes clear and maintain their flow capacity. Regular cleaning helps to prevent blockages and ensures that the system operates efficiently.

3. Repairing Damages:

In case of any damage or leaks, promptly repair the affected sections using suitable repair techniques such as patching or replacing the damaged pipe segment. Prompt repairs help to maintain the integrity of the system and to prevent further damage.



4. Record Keeping:

Maintain detailed records of the installation, inspections, maintenance, and repairs. This helps in tracking the performance of the water supply system and planning future maintenance activities. Proper record keeping is essential to ensure that the system is well-maintained and to plan for future maintenance activities.

Conclusion

Volstar MDPE pipes by Malpani Pipes and Fittings Limited offer a reliable, durable, and cost-effective solution for all your water supply needs. With superior material quality, compliance with ISO 4427 Part 2:2019 standards, and a range of sizes and pressure ratings, our pipes are designed to meet the diverse requirements of potable water, irrigation, gas distribution, and industrial fluid transfer systems.

By choosing Volstar, you are investing in a product that promises longevity, efficiency, and minimal maintenance, ensuring a hassle-free water supply experience. Trust Volstar for your water supply solutions and experience the difference in quality and performance.

Contact Us

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