SANDHYAFLEX

ISO 9001:2015 certified company

LDPE Flat Pipe

TECHNICAL DATASHEET

SANDHYAFLEX LDPE Flat Pipe is a high-performance flexible irrigation and fluid conveyance solution designed for efficient water distribution and transportation in agricultural, horticultural and industrial applications. Manufactured from high-grade Low-Density Polyethylene (LDPE) compounds, these pipes are engineered to provide excellent flexibility, lightweight handling, and long-term durability under diverse operating conditions.

Designed to facilitate convenient water transfer and irrigation, Sandhyaflex LDPE Flat Pipes offer reliable flow performance while ensuring easy installation, transportation and storage. The product is widely used in drip irrigation systems, sprinkler networks, agriculture, landscaping, and various low-pressure fluid transfer applications where flexibility and durability are essential.

SANDHYAFLEX has established itself as a trusted manufacturer of quality polymer products in India. With advanced extrusion technology and carefully selected raw materials, Sandhyaflex LDPE Flat Pipes are designed to deliver consistent performance, excellent dimensional stability, and superior resistance to environmental conditions including sunlight, weathering, and agricultural chemicals.

Overcoming Challenges, Delivering Excellence:

Water distribution and irrigation systems often face challenges such as leakage, pipe damage, difficult handling, storage limitations, and material degradation caused by prolonged exposure to sunlight and environmental conditions. Conventional piping systems may also involve higher installation costs and reduced portability.

To address these challenges, SANDHYAFLEX LDPE Flat Pipes are manufactured using specially formulated LDPE compounds that provide excellent flexibility, lightweight characteristics, and superior resistance to weathering and chemicals. The pipe ensures smooth water flow, easy deployment, and reliable performance while minimizing maintenance requirements.

By delivering dependable water conveyance and long service life, SANDHYAFLEX LDPE Flat Pipes have become a preferred choice for farmers, irrigation contractors, horticulture professionals, and industrial users.

Key Features:

- Manufactured from premium-quality LDPE compounds
- Lightweight and highly flexible construction
- Excellent resistance to weathering and UV exposure
- Good resistance to agricultural chemicals and fertilizers
- Smooth internal surface for efficient flow characteristics
- Easy handling, transportation, and storage
- High flexibility for convenient installation
- Resistant to cracking and environmental stress
- Excellent durability and dimensional stability
- Available in multiple sizes and wall thicknesses
- Suitable for low-pressure water conveyance applications
- Easy connection with various fittings and accessories
- Cost-effective and maintenance-free operation
- Long service life under normal operating conditions
- Reliable performance in agricultural and industrial environments

Applications:

▪ **Agricultural Irrigation:** Used for efficient water distribution in farms and crop fields.

▪ **Drip Irrigation Systems:** Suitable for connecting water supply networks to drip irrigation installations.

▪ **Sprinkler Irrigation Systems:** Provides reliable water conveyance for sprinkler applications.

▪ **Horticulture and Nurseries:** Used for watering plants, greenhouses, and nursery operations.

▪ **Landscaping Projects:** Ensures effective water supply in gardens, parks, and landscape developments.

▪ **Water Transfer Applications:** Suitable for low-pressure fluid transportation.

▪ **Industrial Applications:** Used for conveying water and compatible liquids in industrial environments.

▪ **Temporary Water Supply Systems:** Ideal for portable and seasonal irrigation installations.

▪ **Construction Sites:** Used for water distribution and general utility purposes.

▪ **Rural Water Distribution:** Provides economical water transfer solutions in remote areas.

▪ **Greenhouse Irrigation:** Ensures controlled water supply for protected cultivation systems.

▪ **General Fluid Conveyance:** Suitable for various low-pressure liquid handling applications.

History of LDPE Flat Pipes:

▪ **1930s –** Low-Density Polyethylene (LDPE) was first developed, introducing lightweight and flexible polymer materials.

▪ **1950s –** Polyethylene pipes began replacing conventional metal pipes in agricultural applications.

▪ **1960s –** Flexible LDPE pipes gained popularity for irrigation and water conveyance systems.

▪ **1970s –** Advancements in extrusion technology improved pipe quality and dimensional consistency.

▪ **1980s –** Widespread adoption of LDPE piping in modern agriculture and horticulture.

▪ **1990s –** Enhanced polymer formulations improved weather resistance and service life.

▪ **2000s –** Growing demand for efficient irrigation systems increased the use of LDPE flat pipes worldwide.

▪ **2010s –** Development of advanced UV-stabilized compounds improved durability and field performance.

▪ **2020s –** Modern LDPE flat pipes continue to provide economical, lightweight, and reliable solutions for agricultural and industrial fluid transfer applications.

Colours and Their Applications:

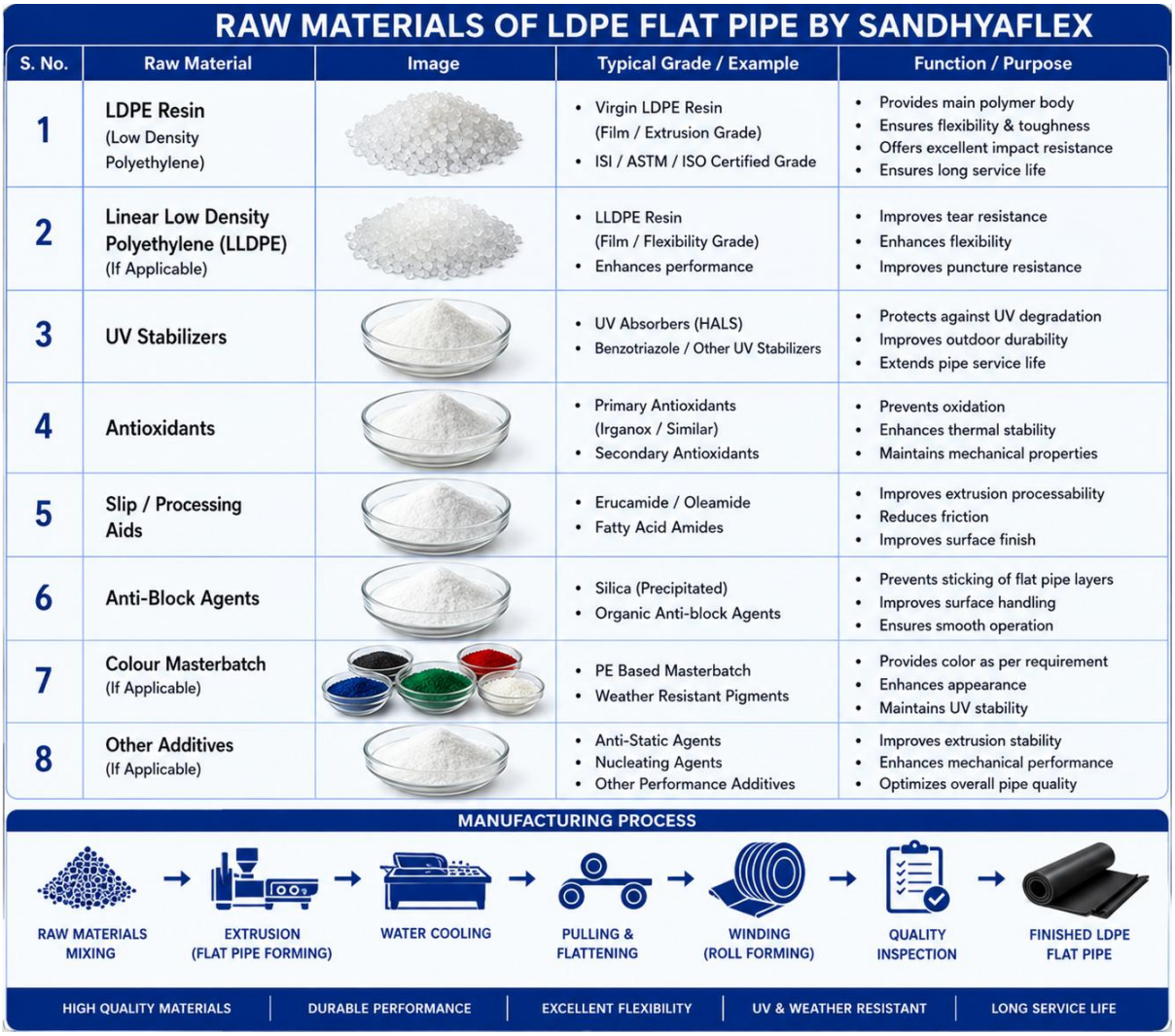
For LDPE Flat Pipes, colours are primarily used for product identification, application differentiation, agricultural coding, and customer-specific requirements. The flow characteristics, flexibility, and mechanical performance are governed by the polymer compound and wall construction, not by colour.

Colour	Typical Application
Black	Standard agricultural irrigation, water transfer, and general-purpose applications
Blue	Potable water distribution and low-pressure fluid conveyance systems
Green	Horticulture, landscaping, nurseries, and environmentally sensitive applications
Yellow	Temporary water supply systems and construction site applications
White	Specialty applications, inspection systems, and custom installations
Red	Identification of reclaimed water or project-specific coding requirements
Custom Colours	Available as per customer specifications and application requirements

Materials:

The Sandhyaflex LDPE Flat Pipe shall be manufactured using high-quality Low-Density Polyethylene (LDPE) compounds designed to provide superior flexibility, mechanical strength, dimensional stability, and long-term service reliability.

The compound shall consist of premium-grade virgin LDPE resin combined with suitable stabilizers, processing aids, UV inhibitors, and performance-enhancing additives to achieve excellent flexibility, weather resistance, and consistent mechanical properties.



The pipes shall be manufactured using advanced extrusion and finishing processes and shall be free from defects such as cracks, pinholes, voids, foreign inclusions, uneven wall thickness, or surface irregularities that may adversely affect performance and durability.

The material shall possess adequate resistance to moisture, sunlight, weathering, agricultural chemicals, fertilizers, and environmental stress while maintaining stable flow characteristics and dimensional integrity throughout its service life.

Manufactured from high-quality LDPE compounds, Sandhyaflex LDPE Flat Pipes provide reliable fluid conveyance, excellent flexibility, and long service life across a wide range of agricultural, horticultural, and industrial applications.

Physical and Mechanical Properties – Sandhyaflex LDPE Flat Pipe:

S. No.	Property / Test	Requirement
1	Product Type	LDPE Flat Pipe
2	Material Composition	Virgin Low-Density Polyethylene (LDPE) Compound
3	Colour	Black / Blue / Green / Custom Colours
5	Shape	Flat Flexible Pipe
6	Surface Finish	Smooth
8	Flexibility	Excellent
9	Tensile Strength	Good Mechanical Strength
10	Elongation at Break	High
11	Burst Strength	Suitable for Low Pressure Applications
12	Impact Resistance	Good
13	Abrasion Resistance	Good
14	Weather Resistance	Excellent
15	UV Resistance	High
16	Moisture Resistance	Excellent
17	Chemical Resistance	Good resistance to fertilizers and mild chemicals
18	Corrosion Resistance	Excellent
19	Temperature Resistance	Suitable for normal agricultural operating conditions
20	Environmental Stress Crack Resistance	Good
21	Dimensional Stability	Good
22	Flow Characteristics	Smooth and Efficient Fluid Conveyance
23	Joint Compatibility	Suitable for standard fittings and accessories
24	Typical Applications	Irrigation, Water Transfer, Landscaping, Horticulture, Construction
25	Maintenance Requirement	Low

Usage Tips:

▪ Select the appropriate pipe size and wall thickness based on the required flow rate, operating pressure, and application conditions.

▪ Ensure compatibility with irrigation systems, fittings, pumps, and other accessories before installation.

▪ Verify that the pipe is suitable for the intended liquid and operating environment.

▪ Inspect pipes before installation for cuts, punctures, kinks, or manufacturing defects that may affect performance.

▪ Ensure proper alignment and routing to avoid excessive bending, twisting, or mechanical stress.

▪ Use recommended connectors, clamps, and fittings to ensure leak-proof connections.

▪ Avoid dragging pipes over sharp surfaces or rough terrain that may cause abrasion or puncture damage.

▪ Ensure installation is carried out by trained personnel following recommended agricultural or industrial practices.

▪ Follow applicable irrigation standards, water management guidelines, and local regulations.

▪ Do not expose pipes to operating pressures exceeding the specified working limits.

Maintenance and Care:

Maintaining Sandhyaflex LDPE Flat Pipes ensures reliable fluid conveyance, extended service life, and consistent performance.

▪ **Regular Inspection:** Check for cuts, punctures, kinks, leakage, or signs of wear caused by prolonged use.

▪ **Clean Surface:** Remove dirt, mud, algae, and deposits that may affect handling or performance.

▪ **Check Connections:** Periodically inspect fittings, clamps, and joints for leakage or loosening.

▪ **Avoid Mechanical Damage:** Prevent contact with sharp objects, excessive loads, or crushing that may deform the pipe.

▪ **Monitor Wear Levels:** Replace pipes showing excessive wear, cracking, or loss of flexibility.

▪ **Protect Against Chemicals:** Avoid prolonged exposure to incompatible chemicals, oils, or solvents unless specifically approved.

▪ **Environmental Care:** Store pipes away from direct sunlight and excessive heat when not in use to maximize service life.

▪ **Timely Replacement:** Replace damaged sections promptly to avoid water loss and system inefficiencies.

Applications by Countries:

India

▪ Widely used in agricultural irrigation, horticulture, landscaping, and rural water distribution systems.

▪ Common in drip irrigation, sprinkler systems, and greenhouse farming applications.

▪ Growing demand due to increasing adoption of water-efficient farming practices.

China

▪ Extensive use in agricultural irrigation and large-scale farming operations.

▪ High adoption in greenhouse cultivation and modern water management systems.

▪ Strong demand driven by intensive agriculture and industrial applications.

United States

▪ Used in farms, nurseries, landscaping projects, and low-pressure water transfer systems.

▪ Common in precision irrigation and sustainable agricultural practices.

▪ High emphasis on efficiency, durability, and water conservation.

Europe

▪ Widely used in horticulture, vineyards, landscaping, and greenhouse irrigation systems.

▪ Strong adoption in environmentally sustainable farming operations.

▪ Emphasis on quality, resource conservation, and efficient water usage.

Middle East

▪ Heavy usage in desert agriculture, landscaping, and controlled irrigation projects.

▪ Designed to withstand harsh climatic conditions and high temperatures.

▪ High demand due to increasing focus on water management and agricultural productivity.

Africa

▪ Used in irrigation projects, rural water supply systems, and agricultural development programs.

▪ Important for improving crop productivity and water accessibility.

▪ Increasing adoption in both public and private agricultural initiatives.

Southeast Asia

▪ Widely used in rice cultivation, plantations, horticulture, and greenhouse farming.

▪ Strong demand due to expanding agricultural activities and tropical climatic conditions.

▪ Suitable for high-humidity environments and year-round irrigation requirements.

Australia

▪ Used in farming, vineyards, landscaping, and water transfer applications.

▪ High requirement for durability under harsh sunlight and varying environmental conditions.

▪ Common in water-efficient agricultural and industrial operations.

Get in touch:

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