



IS 17425:2020 – Irrigation Equipment: Quick Coupled Polyethylene Pipes and Fittings for Sprinkler Irrigation Systems

Efficient irrigation systems are critical for addressing water scarcity, improving crop yield, and reducing manual labor in farming. Quick-coupled polyethylene pipes and fittings simplify the setup and operation of sprinkler irrigation systems, enabling precise water application while minimizing water loss. These are suitable for different terrains and crops, adaptable to varying irrigation requirements.

Quick-coupled polyethylene pipes and fittings are primarily used in the following :

- **Sprinkler Irrigation:** Ideal for a variety of crops, including cereals, vegetables, and fruit orchards.
- **Horticulture:** Supporting efficient watering of flowers and ornamental plants.
- **Sports Fields and Landscapes:** Ensuring even water distribution for turf and grass maintenance.

Quick-Coupled Polyethylene Pipes and Fittings should have following characteristics:

1. **Ease of Installation:** The quick-coupling mechanism should enable fast and hassle-free assembly and disassembly.
2. **Durability:** It should be made of high-quality polyethylene, these pipes and fittings are resistant to corrosion, UV radiation, and mechanical stress.
3. **Water Efficiency:** It should reduce water wastage.
4. **Versatility:** It should be suitable for different terrains and crops, adaptable to varying irrigation requirements.
5. **Long Life :** It should have long service life and low maintenance
6. **Portability:** Lightweight design allows for easy transportation and repositioning in the field.

This standard (IS 17425:2020) covers test related to raw materials (MFR, Density of HDPE), Carbon Black Percentage (for UV Resistance), Strength of Pipes (Tensile Strength, Elongation, Internal pressure creep rupture tests and reversion tests), performance of couplers and fittings (Weldability, Leakage, hydraulic proof test, holding attachments etc). Thus, it defines the quality and performance standards for quick-coupled polyethylene pipes and fittings which are essential components of sprinkler irrigation systems. The standard ensures that the pipes and fittings are durable, easy to install, and compatible for effective irrigation.