Indian Standard IS 7834 (Part 3) : 1987 - Injection moulded PVC socket fittings with solvent cement joints for water supplies Part 3 Specific requirements for 90° elbows

Injection-molded PVC socket fittings are integral components in water supply systems, offering versatile solutions for pipe connections. These fittings enable various functions:

- **Connecting Pipes**: PVC socket fittings are designed to join two to four pipes, ensuring secure and reliable connections.
- **Changing Pipe Direction**: They can alter the direction of pipes to meet system requirements.
- **Creating Branches**: These fittings allow the creation of branches within the pipe network.
- **Controlling Fluid Flow**: These fittings also help control the flow of fluids within the system.

PVC is suitable for water pipes due to its resistance to corrosion at room temperature, making it durable for long-term use in typical water supply systems. However, it should not be used in hot water pipes, as exposure to high temperatures can cause PVC to release toxins, contaminating the water supply.

Injection Molding in PVC Fittings Production - Injection molding is a widely utilized method for manufacturing PVC fittings, providing precision and efficiency in production. It ensures that the fittings are made with uniform quality and durability, essential for maintaining the integrity of plumbing systems.

Quality Assurance and Compliance - The **IS 7834 Standards** sets forth the criteria for the conformity, sampling procedures, and hydraulic testing necessary for ensuring the quality of PVC socket fittings. Part 1 covers key provisions including:

- **Homogeneity of Fittings**: Each batch of fittings must be consistent in size, thickness, and length, with random sampling used to check for defects.
- **Testing Requirements**: If a fitting fails initial tests, it must undergo retesting under stringent conditions. This includes a 24-hour curing period for joints before applying a pressure test at 4.2 times the normal operating pressure.
- **Extended Size Range**: The standard allows for a broader range of sizes, up to 315 mm, providing flexibility in design and installation.
- **Hydraulic Testing**: The hydraulic tests ensure that fittings maintain structural integrity, preventing failure, leakage, or deterioration when subjected to high pressure and stress.

Part 3 delves into requirements specific to 90° elbow connections. The laying length of a 90° PVC elbow refers to the distance between where the pipe enters and exits the fitting. For different sizes, this distance varies. For instance, a 16mm elbow has a laying length of 9mm (±1 mm), while a 315 mm elbow has a length of 158.5 mm (+13/-1 mm). These precise dimensions ensure proper fit and alignment. Design features like ribs may be used to achieve accuracy, ensuring seamless integration and system efficiency.

Adhering to rigour of IS 7834 standards assures that the PVC socket fittings will perform reliably under varying conditions, ensuring long-term durability and safety in water supply systems.