

## Proximally Reinforced Catheter Tubing Has Wire



PolyMedex Discovery Group introduces a line of custom catheter tubing with wire reinforcements embedded within the wall at the proximal end of the catheter only, and no reinforcement on the distal end. Reinforcement options include braided wire for torque transmission and coiled wire for kink resistance. These components utilize integrated extrusion, wire wrapping and welding technologies to reduce costs and improve quality over traditional hand layup methods.

Historically catheter designers were limited to single material options along the length of the catheter. Completely reinforced catheters sometimes lack the required flexibility at the distal end. Completely unreinforced catheters sometimes lack the necessary rigidity at the proximal end. With modern minimally invasive devices, ranging from small diameter neurovascular devices to much larger gastrointestinal devices, opposing material requirements at the distal versus proximal end of the device are becoming increasingly common.

Embedded stainless steel wire reinforcement on the proximal portion of the catheter tube improves pushability, torque transmission, and kink resistance upon insertion by the physician. Allowing the distal end of the same tube to remain unreinforced provides greater flexibility, optical clarity, and x-ray transparency. In recent years, some suppliers have offered “hand lay-up assembly” to produce catheters to meet these requirements. The hand lay-up method requires different tubes to be aligned and assembled using adhesives, heat shrinking, annealing, and other methods by an operator manually. This introduces considerable variation and makes it difficult to achieve a validated process. Furthermore, yields are constrained by the slow assembly process, the operator’s manual dexterity, and by a lengthy annealing step.

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According to Dennis Cherok, Director of PolyMedex Device Assembly, "Our integrated approach of extrusion, wire wrapping and welding results in a high yield process that can be validated for long term production stability, resulting in consistent product quality and performance."

PolyMedex produces proximally reinforced catheter shaft tubing in small diameters for neurovascular applications as well as diameters up to one inch (25.4 mm) for gastrointestinal and other natural orifice devices.

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