

Flattened Heat-Shrinkable Marker Sleeves for Wire/Cable & More

by:

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Heat-shrinkable marker sleeves provide a mark with a durable and perfect fit.

Standard Sleeves

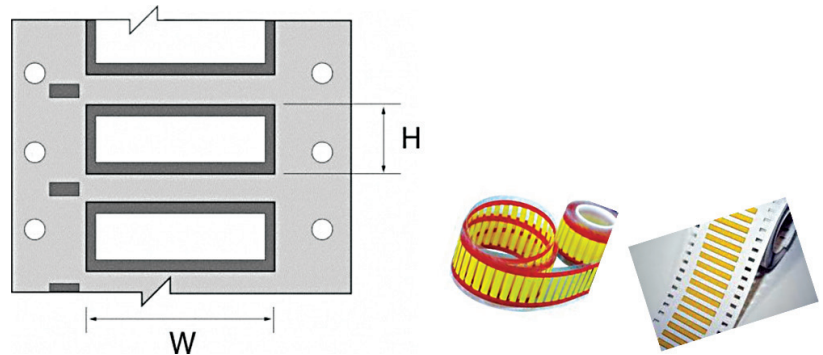
Flattened heat-shrinkable marker sleeves are used around the globe for permanent marking. The wide variety of applications includes commercial, aerospace and defense systems.

After shrinking, the sleeve will snugly fit around cable and wire, cable lugs, terminals, connectors and more. The sleeve provides marking, color coding, insulation, strain relief, mechanical and chemical protection in just one go.

The standard cross-linked sleeves are economical in use and mechanically tough. The right selected sleeves will meet performance requirements such as *SAE-AMS-DTL-23053/5*, *VG 95343 T5*, *UL 224* and *UL VW1*. The easy-to-use sleeves can be printed by computer-driven printers with special ink ribbons.

flatten expanded heat-shrink tubing of multiple diameters. The system consists of an unwinder, a flattener, a rewinder and a tension-control system.

The flattener has an upper and lower belt system with a controlled heating section at the entrance end and a



Ladder with marker sleeves.

High-Grade Sleeves

The high-grade heat-shrinkable sleeves are used in the high end of the market. The flattened sleeves are made in a wide variation of materials like LSF0H polymers, PVDF and fluoroelastomer.

These special sleeves offer high chemical resistance and extreme operating temperatures in a range of from -40°C to $+220^{\circ}\text{C}$. (-40°F to $+428^{\circ}\text{F}$) and meet demanding applications in the field of aerospace, rapid transit, off-shore, marine and so on.

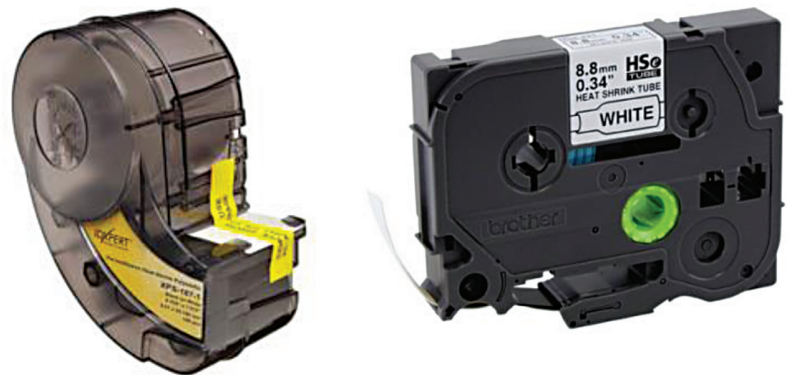
Practical Use

Flattened heat-shrinkable sleeves for wire marking are usually supplied on reels, in cartridges or on ladders as well as on paper carriers for easy printing in any required sequence.

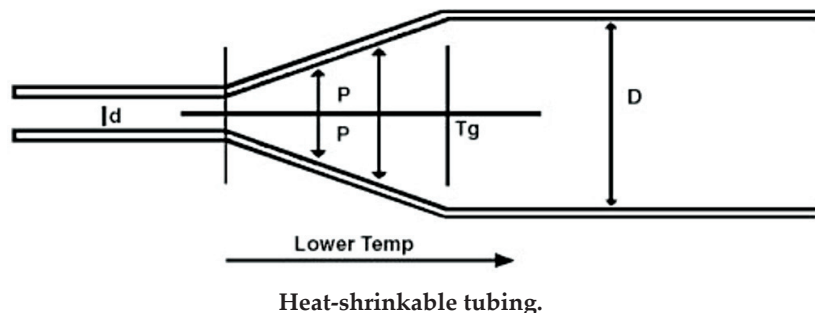
Through the utilization of a simple standard heat gun, the operator will shrink these sleeves onto the wire or any other object.

How to Flatten the Sleeves

The heat-shrinkable tubing is flattened to a defined flatness by means of a so-called flattening machine. For example, the PTL-Compo Flattening Line has been designed to



Cartridges.



Heat-shrinkable tubing.

controlled cooling section at the exit end. The belts are constantly controlled on tension and position to make sure that the belts are always tracking in the middle. The design is such that the gap between the belts in the heating and cooling sections can be precisely adjusted at four different places to create consistent flattening.

The machine incorporates controls for reading and adjusting the speeds as well as easy gap adjustment between belts along with precise temperature and cooling control. These features facilitate the flattening of the tubing into the desired shape.

How the Tubing is Made Shrinkable by Application of Heat

First an extruded tubing is cross-linked by applying an electron beam (e-beam) or by means of chemical cross-linking. To make cross-linked polymeric tubing shrink, the tubing needs to be expanded and “frozen” in the expanded state. This can be done on a so-called expansion machine.

Many continuous expansion machines may use glycol or glycerine as a heating medium, but for marker sleeves a perfect dry surface, free of fat and powder is required. Dry expanders like the PTL-HW and PTL-IR machines provide the right expanded tubing for making the perfect heat-shrinkable marker sleeves.

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Company Profile:

The team at Inhol B.V. has been involved in manufacturing heat-shrinkable tubing for more than 30 years. Inhol B.V. designs and supplies manufacturing equipment and technology to the heat-shrink industry. Inhol B.V. also supplies compounds to the heat-shrink industry as well as to the wire and cable industry. For wires and cables, Inhol B.V./PTL has the ability to develop new compounds for relatively small volumes. The driving force behind the company is the active pursuit of innovative product development for markets like solar/photovoltaic, aerospace, defense, shipboard, marine, off-shore, rapid transit (rolling stock) and other industries. The range of compounds include LSFOH, thermoplastic, radiation and moisture cross linkable as well as some CV curable materials. All compounds meet the RoHS and REACH directives. Inhol B.V./PTL is an ISO 9001 and ISO 14001-certified company. www.inhol.com