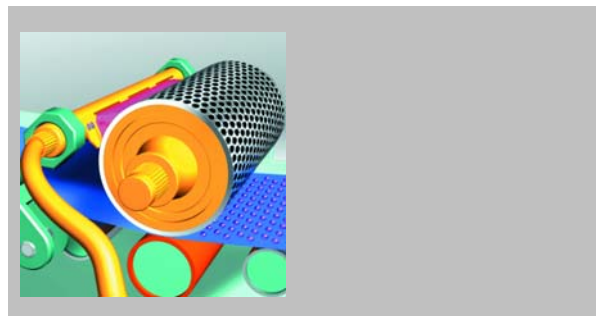


VESTAMELT®

Thermoplastic Copolyamide Hotmelt Adhesives

- **Hotmelt Print / Extrusion**



Hotmelt Print Process

Melt application processes have been known for approximately 20 years. Engraved rollers apply molten hotmelt adhesive granules onto web-like substrates. The granules are melted in an extruder, applied with a doctor blade into the engravings of an engraved roller through a slit die, and then applied to a substrate (non-woven fabric). Even heat-sensitive textiles can be coated with dot or rhombic patterns using polyamide or polyester hotmelt adhesives. The extremely short contact time between the textile and the 180–220 °C hot printing roll prevents thermal damage to the substrate. The hotmelt print process obviates the expensive cold milling process and provides a cost-effective application.

Process

A pressure roller presses the travelling web of fabric against the heated engraved roller. The engraved roller contains the molten adhesive in its wells. The applicator is a heated tank that a flexible doctor blade presses tightly against the engraved roller. The applied pressure causes the hotmelt adhesive to be transferred to the web in a pattern that corresponds to the engraved

structure of the roller.

Some standardized dot patterns have become accepted over time, varying according to fabric type and application. The dot-like or rhombic application of hotmelt adhesives onto one of the two substrates is particularly economical. It achieves high coefficients of adhesion and low coat weights. There is also no barrier layer to steam, which is a problem in the case of padding laminates, for example. Only a part of the intersections and junctions is coated, depending on the density and size of the adhesive dots. The coating consequently does not significantly affect the softness and elasticity of the fabric. For coatings and laminates in which the softness and elasticity of the composite are less important, it is possible to use any lattice and line pattern.

Advantages

The performance of a melt print system is very high:

- high running speed (up to 80 m/min)
- large working width (up to 230 cm)
- direct lamination
- no emissions

Fields of Application

Typical applications for the hotmelt print process are:

- coated fabric and non-woven fabrics for reinforcing lining
- laminates for the shoe and leather industry
- automobile interior covering (roof liner, side panels, rear shelf)
- insulation composites
- filter laminates
- industrial textiles and composite materials
- foam laminates (alternative to flame laminates)

The hotmelt print process offers special advantages to the automotive industry in particular.

Since this industry is attempting to manufacture a car that is almost completely recyclable, all components of the seats (face fabric, hotmelt adhesive, and non-woven fabric) are often required to be composed of the same chemical base. Since seat face fabrics often consist of polyester, polyester non-woven fabrics are replacing the polyurethane foams previously used. Since these can't be processed by flame lamination, a hotmelt adhesive with a copolyester base (DYNAPOL® S) is recommended.

VESTAMELT® Copolyamides

VESTAMELT®	Properties, Suitability
432	Low melting point, low melt viscosity, good adhesion, resistance to steam, for pressure-sensitive and thermally sensitive face fabrics
722	Very low melt viscosity, low fusing temperature, excellent adhesion to face fabrics that are difficult to fuse, also suitable for spray adhesive coatings
732	Low melting point, low melt viscosity, very good adhesion to surfaces that are difficult to fuse and to siliconized fabrics
742	Similar to VESTAMELT 732, but with superior resistances, suitable for outdoor clothing

All grades are stabilized.

Further copolyamide and copolyester grades (DYNAPOL®S) are available upon request. DYNAPOL® grades are sold by the Coatings & Additives Business Unit of Evonik.

Extrusion Coating

In addition to processing in the hotmelt print process, it is also possible to apply VESTAMELT directly with an extruder. For example, it can be applied as an adhesive bead or, using a slit die, as a surface coating or in other special shapes.

VESTAMELT is also often processed into adhesive strings (monofilaments), films, nets or spun-bonded nonwovens. Various companies perform these transformations, and we would be happy to help place you in contact with them.

VESTAMELT® Copolyamides

VESTAMELT®	Properties, Suitability
351	Monofilamentes
171 251 432 351 840 X1038 X1027	Hotmelt adhesive films Hotmelt adhesive nets Hotmelt adhesive nonwovens
3041 3261	Resistant against fuels, filter sticking

Further copolyamide and copolyester grades (DYNAPOL® S) are available upon request.

DYNAPOL® grades are sold by the Coatings Additives Business Unit of Evonik.

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