

Flame Lamination – The Cost Savings Alternative

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Definition : A process used to produce laminates by bonding foam to various fabrics & substrates by passing the foam over an open flame. Exposure to the flame creates a thin layer of molten polymer on the foam surface, which is then brought into contact with the secondary layer under pressure to develop a bond between the two surfaces.

The flame laminating industry has seen significant changes in both techniques and markets during the fifty plus years since its inception. Initially the process was predominantly used for fashion, brushed nylon curtains and upholstery. With these markets now buying their goods from off-shore sources, the main North American market's for flame laminated goods has shifted to Safety & Protection and Automotive. With unprecedented raw material, energy and transportation cost increases over the past year, flame lamination is now a relevant cost savings alternative for all automotive applications involving pressure sensitive adhesive and wet adhesive systems.

Flame lamination offers advantages in the manufacture of gasket materials in certain applications. Some points worth considering:

- Removal of adhesive layers provides an additional "Green" product offering
- The nightmare of adhesive failure between materials due to de-lamination during the warm weather months will be negated
- There is no adhesive so therefore no "creep" on the flame laminated side of a film
- Different materials such as films, fabrics, felts or pressure sensitive adhesives can be laminated to the opposite sides of the foam in one pass down the machine
- Foams with differing properties e.g. open cell / closed cell or low density / high density can be laminated together in a sandwich to offer specialized properties for more technical applications.

Hybrid Gaskets

The flame lamination process can offer a Fabricator numerous "hybrid" gasket materials by marrying different substrates and processes. Companies such as Sonatex provide multiple bonding and finishing capabilities such as thermo compression foam molding, dry web and powder lamination. As the technical capabilities of raw materials increase, development of high performance gasket products suitable for the military, medical and aerospace markets have become a reality.