



FLAME LAMINATION GUIDEBOOK

ALWAYS ONE
STEP AHEAD



A LEADER IN POLYURETHANE ADDITIVES

Momentive offers a distinct portfolio of high-performance Niax™ flame lamination additives for the manufacturing of flame laminated flexible polyurethane foam-based materials equipped to respond to ever evolving industry needs.

The manufacturing of high-end flame laminated polyether foam requires the right choice of both, silicone surfactant and flame lamination additive. Momentive has designed a wide variety of high performing and innovative, low fogging solutions able to meet a range of customer needs and industry requirements.

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INDUSTRY EXPERTS

SUPPORTING THE FOLLOWING



Automotive Interiors



Textile Production



Footwear Industry



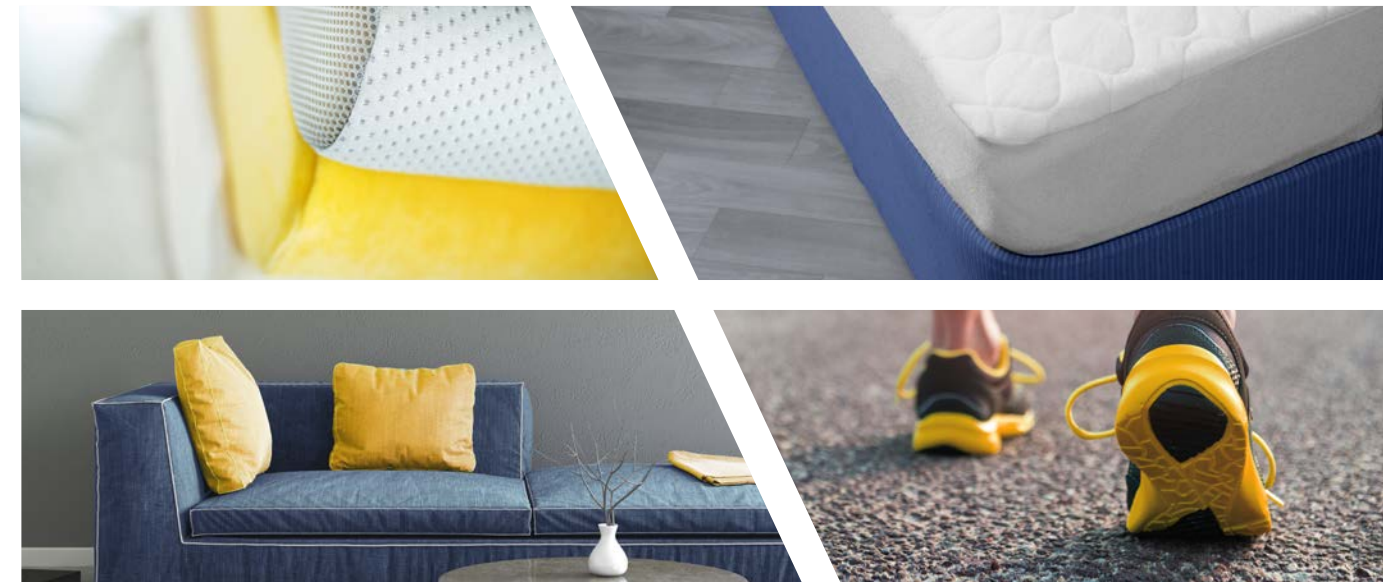
Furniture Manufacture



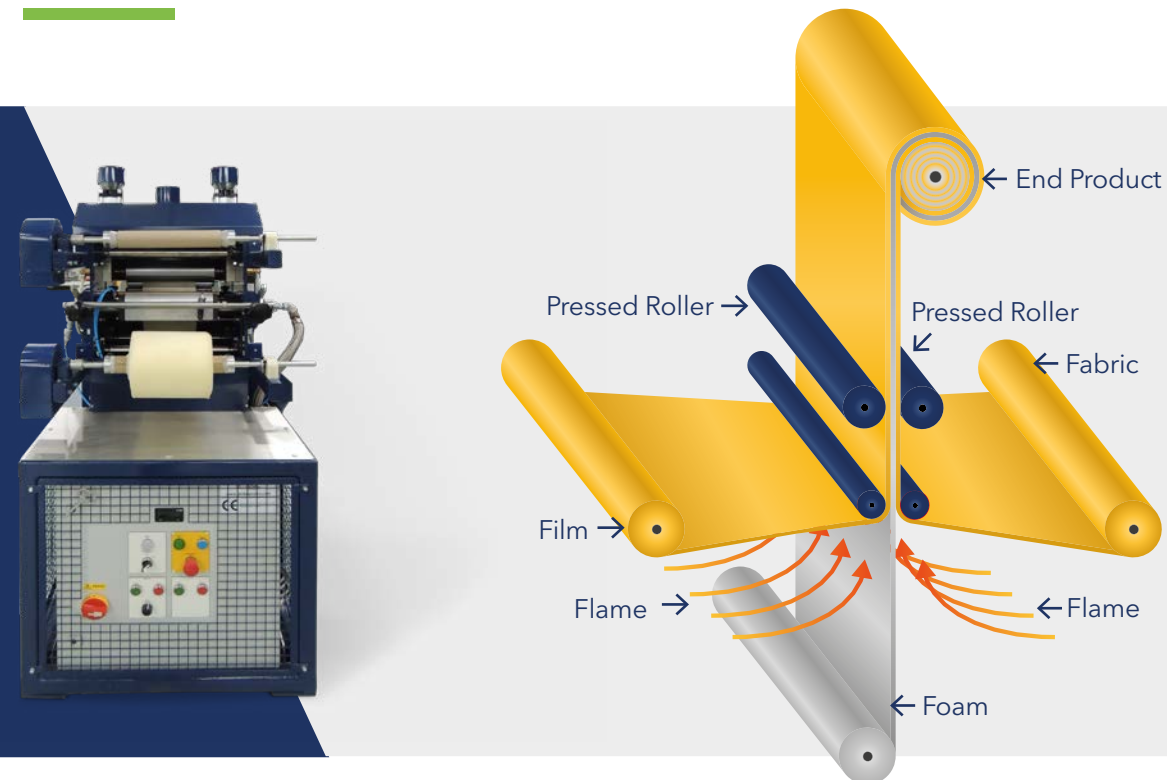
Mattress Fabrication



& Much More



FLAME LAMINATION PROCESS



FLAME LAMINATION ADDITIVES

KEY FEATURES & TYPICAL BENEFITS

- Low emission and phenol-free formulation
- Low viscosity and low use level
- Increased bonding strength in flame lamination process
- UV-light foam yellowing delay
- Wide density range



FLAME LAMINATION ADDITIVES

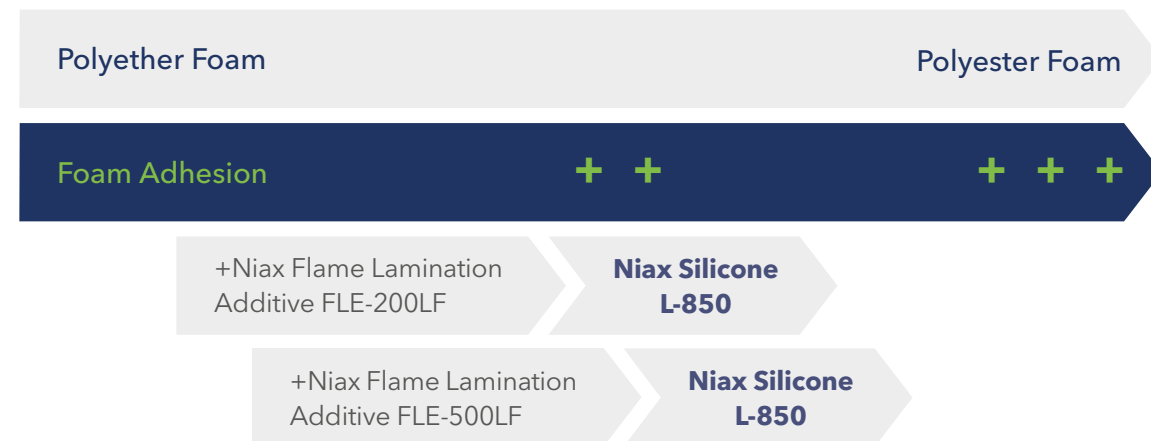
MAIN ROLE

During Flame Lamination process a flame causes thermal oxidation of the polymer network and bonding occurs upon re-solidification of melted polymer layers.

Polyester-based polyurethane foam generally exhibits rapid re-solidification and excellent flame bonding properties but demonstrate poor hydrolytic stability.

Unmodified ether foam does not generally exhibit rapid re-solidification of melted foam layer, resulting in poor adhesive properties.

The incorporation of CS/FLE additives into ether foams has consistently shown to aid in the acceleration of foam polymer decomposition and rapid re-solidification of melted foam layers to provide enhanced flame bonding characteristics and final peel strength.



Grade	Low Fogging	Antioxidant	Flame Retardant	Bonding Strength
CS-20LF	√	+	+	Initial / Final
CS-22LF	√	+++	++	Initial
CS-25LF	√	+++	++	Initial
FLE-200LF	√	+	+++	Initial / Final
FLE-500LF	√	+	+++	Initial / Final

NIAX SILICONE L-850

Low emission, medium potency FR silicone offering optimum foam stabilization and cell structure control. Allows the reduction of flame retardant requirement in foam formulations and may help improving flame lamination properties.

NIAX CS-22LF

Low emission additive used for flame and heat lamination of polyether foams able to fulfill the most demanding automotive specifications, such as those pertaining to fogging and emissions, as well as improve the direct light stability of polyether and polyester foams.

NIAX CS-20LF

Low emission additive used to improve adhesion properties of flexible polyurethane foam based on polyether polyol, including those used for automotive and textile applications.

NIAX CS-25LF

Low emission additive for flame and heat lamination of polyether foams with improved processing latitude. It improves the indirect light stability of polyether and polyester foams.

NIAX FLE-200LF

Low viscosity, low emission additive used to improve adhesion properties of polyether flame bonding foams. Its rapid buildup of tack time adhesion allows for a unique new approach to FLE foams. Can be used in conjunction with L-850 additive to optimize FL properties.

NIAX FLE-500LF

Used to improve adhesion properties and enhance flame bonding characteristics of polyether flame bonding foams. Can be used in conjunction with L-850 additive to optimize FL properties.

FLAME LAMINATION PERFORMANCE

CS-20LF → CS-25LF → CS-22LF → FLE-200LF → FLE-500LF

Medium Bonding Strength Increase → High Bonding Strength Increase

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