HUNTSMAN

Enriching lives through innovation

Polyurethanes

ACOUSTIFLEX® S NBR | ACOUSTIFLEX® S SE

Polyurethane systems developed for semi-rigid foam for automotive applications

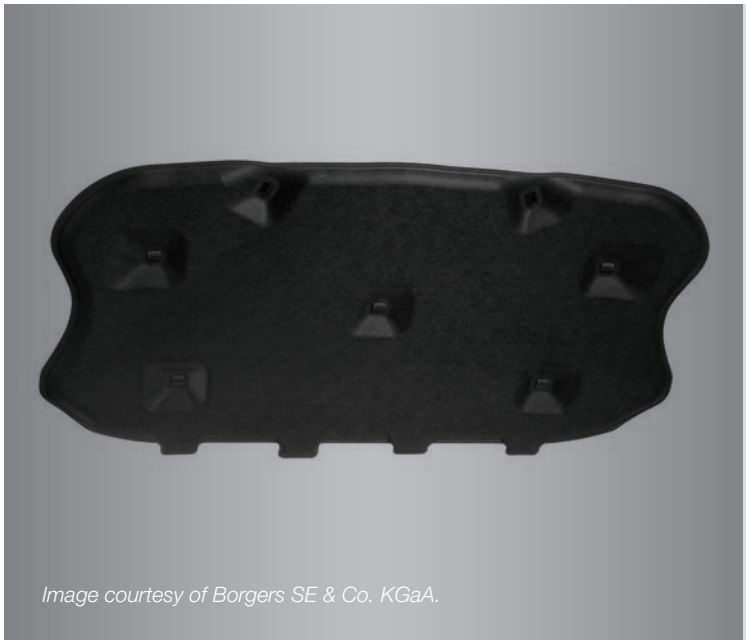

Image courtesy of Borgers SE & Co. KGaA.

PRODUCT DESCRIPTION

New ACOUSTIFLEX® S NBR/SE* Lightweight Absorber (LWA) systems can be used for semi-rigid foam for acoustic applications in engine and trunk compartments. These technologies are fully formulated and include the mix of a polyol blend with SUPRASEC® diisocyanate and additives to help customers to produce lightweight acoustic components for the automotive industry. Offering great flexibility in manufacturing with four and five component polyurethane systems, they can be used for self-extinguishing (SE) and non-burning (NBR) acoustic products according to MVSS 302 and UL-94V0.

** NBR: Non Burning Rate. SE: Self Extinguishing.*

KEY FEATURES

- Developed for thermoformable semi-rigid foam with improved sound absorption and lightweighting
- Consistent acoustics and density through the block
- Cost efficient production, consistent batch-to-batch quality
- Flammability characteristics – MVSS 302, UL-94V0
- Phenolic free formulations
- Self-support – reduced number of clips are required for faster assembly

BENEFITS

- Up to a 20% raw material saving compared to the 15 kg/m^3 variants for lighter weight and faster processing
- Very good sound absorption for quieter vehicles
- Ease of thermoforming allows thicker, more complex shapes and customizable designs of component parts
- Ratio change to tune stiffness (bonnet liner) and thermoformability (dash insulator) possible for a wider processing window
- No waiting time for block slicing and thermoforming to reduce processing time and storage cost

TYPICAL APPLICATIONS

include semi-structural components such as:

- Engine and trunk compartments
- Tunnel insulation
- Outer tunnel absorber
- Outer dash panel absorber
- Engine hood liners

TYPICAL FOAM PROPERTIES

ACOUSTIFLEX® S NBR/SE polyurethane systems can meet different customer needs.
The following table provides an overview of typical properties:

FEATURES AND BENEFITS	ACOUSTIFLEX® S NBR/SE 4	ACOUSTIFLEX® S NBR/SE 5
Number of system components	4	5 (water stream added)
Tunable density via separate water stream		✓
Core density (kg/m^3)	12-14	12-14
Tensile strength ISO 1798 (flexible) – Stress @ max load	25 ± 10	35 ± 10
Tensile strength ISO 1926 (rigid) – Stress @ max load	40 ± 10	50 ± 10
Elongation – ISO1926	18 ± 5	18 ± 5
Flammability – MVSS302	NBR/SE	NBR/SE

Typical properties can vary depending on local circumstances and application. These properties are not part of the specifications of ACOUSTIFLEX® systems.

APPLICATION METHOD

These MDI-based systems are produced on a "Golden Bucket" type machine with standard processing parameters* to produce discontinuous batchblock foam blocks. These blocks can be sliced and thermoformed onto a textile substrate.

** Details can be obtained from our technical service department.*

TOWARDS SUSTAINABILITY

Our new ACOUSTIFLEX® S NBR/SE polyurethane systems continue to support the United Nations Sustainable Development Goals with three of particular relevance to our work in transportation sectors:

- Acoustic comfort
- Low Volatile Organic Compound (VOC) emissions
- Low odor

- Fast cool down and cycle time
- Quality consistency
- Lower production waste level

- Low density to support lightweight design
- Ease of thermoforming

CONTACT US

A global provider of innovative solutions and one of the leaders in MDI based polyurethanes, Huntsman is proud of their long and successful track record of delivering PU resins for automotive applications including acoustics, seating and composite materials. Huntsman is dedicated to providing our customers with the finest quality of products and services available. Our technical experts are ready to work in partnership with you on your next project and help solve complex design issues with differentiated, bespoke, cost effective solutions.

We invite you to contact us for further information or immediate assistance at **polyurethanes_eu@huntsman.com**