



3M™ Cell Expansion Foam H2H-020-LD

Developmental Status Notice

3M™ Cell Expansion Foam H2H-020-LD is a 3M developmental product. It is currently available on a limited basis and is only provided for market and technical evaluation. The future availability, formulation, performance properties, and pricing of the material are not guaranteed and are subject to change. To discuss your evaluation, please contact your local 3M Application Engineering Team.

Product Description

Note: The data presented in this preliminary data sheet are 3M's best estimates for the current product construction being evaluated. While this product is being developed for general commercialization, this product is still considered developmental at this time and changes in the product construction or process conditions may occur that can cause subsequent changes in product characteristics or performance. User should consult with 3M before making any business plans in reliance upon the future availability or the current properties of this product.

3M™ Cell Expansion Foam H2H-020-LD is a flame retardant microcellular polyurethane foam designed for the automotive market. It provides a low density and has a consistent compression force deflection (CFD). These features make it a solution for use in electric vehicle battery packs to cushion and take up the swelling of lithium-ion cells.

Key Features

- Can be die cut to a variety of shapes and sizes
- Good cushioning properties
- Customized CFD based on the battery cell design
- Self-adhesion for automated assembly processes
- Low density for light weight

Product Construction/Material Description

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Cell Expansion Foam H2H-020-LD	
Property	Value
Material	Microcellular Polyurethane
Color	Black
Release Liner	Silicone coated, Polyester film 0.075 mm
Foam Thickness	2.0 mm
Roll Size	550 - 1035 mm (width) X 50 m (Length)

Applications

- Assembly of cushioning pad to battery pouch cell for cushioning support in electric vehicles
- Gasketing, padding and sealing applications in automotive electronics
- Cushioning solutions in electronics devices such as mobile phone, TV and tablet PC
- Damping noise and reducing vibration in electronic and automotive applications.

Application Techniques

To obtain maximum adhesion, surfaces must be unified, dry, and free of contaminants. Surface contact is fundamental to adhesive performance. To maximize contact on a substrate:

- Clean surfaces with low strength solvents such as isopropyl alcohol (rubbing alcohol) or heptane.

Note: Be sure to follow the solvent's manufacturer's precautions and directions for use when using solvents.

- Apply firm pressure to increase the cold flow and contact of the adhesive with the substrate.
- Allow time (dwell) to increase the surface contact and adhesion.

Note: Product selection is ultimately the user's responsibility. Users should conduct their own tests under actual use and storage conditions to determine whether the product is fit for a particular purpose and method of application.

Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes. Final product specifications and testing methods will be outlined in the product's Certificate of Analysis (COA) that is shipped with the product.

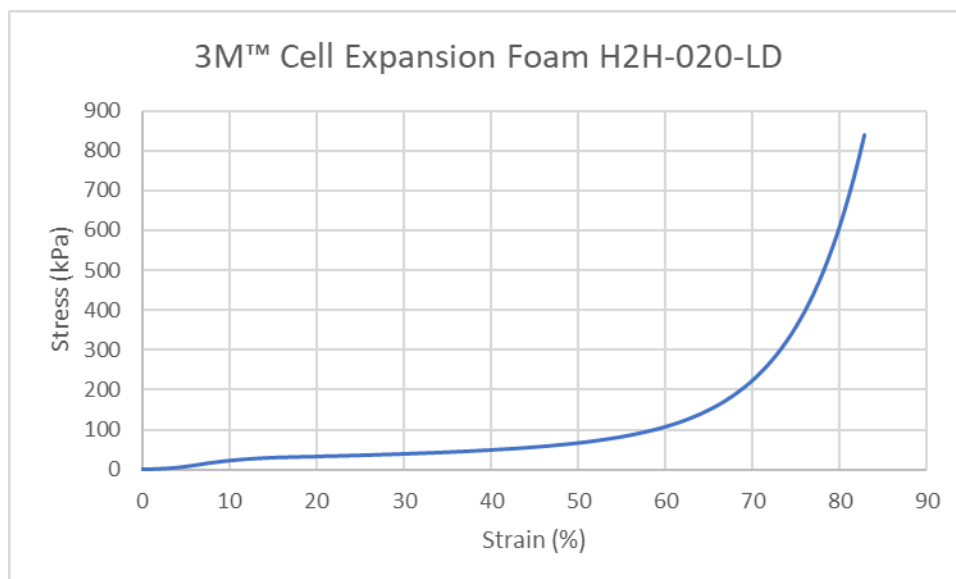
3M™ Cell Expansion Foam H2H-020-LD		
Property	Method ¹	Typical Value
Density Nominal	ASTM D3574	≤ 200 kg/m ³
Thickness w/o Release Liner	ASTM D3574	2.0 mm
Compression Force Deflection ²	Modified ASTM D3574	Over 20 kPa @ 20% Deflection Under 150 kPa @ 60% Deflection
Compression Set (50% @ 70°C for 22hrs)	ASTM D3574	≤ 10%
Hardness (Shore 00)	ASTM D2240	≥ 30
Peel Adhesion ³	ASTM D3330	≥ 0.012 N/mm
Dielectric Strength ⁴	ASTM D149	≥ 1.0 kV/mm
Surface Resistance	ASTM D257	≥ 1.0 X 10 ¹² Ohms
Flammability	UL94	HB, File # QMFZ2. E477414

¹Methods listed as ASTM and JIS are tested in accordance with the ASTM and JIS method noted, respectively

²Compression Force Deflection: TM – Instron E3000, 8 mm/min compression speed, one-layer: 50 mm (Width) * 50 mm (Length) * Thickness (mm)

³Peel Adhesion: Stainless Steel, 90 deg. peel, 30 cm/min peel

⁴Dielectric Strength: Method A, 500V/sec



Storage and Shelf Life

The shelf life of 3M™ Cell Expansion Foam H2H-020-LD is 6 months from the date of manufacture when stored in the original packaging materials and stored at 21°C (70°F) and 50% relative humidity.

Certificate of Analysis (COA)

The 3M Certificate of Analysis (COA) for this product is established when the product is manufactured and deemed commercially available from 3M. The COA contains the 3M specifications, test methods and test results for the products performance attributes that the product will be supplied against. Contact your local 3M representative for this product's COA.

This technical data sheet may contain preliminary data and may not match the COA specification limits and/or test methods that may be used for COA purposes.

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