

The difference  
between open cell and  
polyurethane closed cell  
products explained.

The spray foam industry as a whole can be slightly confusing as the word spray foam does not mean there is only one product. You may come across misleading information with regards to open cell and closed cell products through numerous sites across the Internet. Please remember that a lot of what you read on the internet is based on wrong information and the wrong product for wrong applications.

This information is to help stamp out and misconceptions for the product of which you have chosen for your home (open cell) and to make it clear that the open cell insulation system (Icynene) is the correct insulation to be installed in residential applications. Spray foam insulations are generally split into two categories, open cell and closed cell, as you would expect Icynene produces very high-quality products of both types, and both work exceptionally well in the right application.

## Open Cell

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Harmoni Insulation install Icynene's most popular open cell spray foam, LDC-50 (H<sub>2</sub> Lite). The product has been in production for over 30 years and used extensively in North America and more recently in Europe, including here in the UK.

Icynene open cell foam is a very light flexible insulation which strongly adheres without the use of glues to the surface it is applied to. It is sprayed or injected in its liquid form which expands up to 100 times its liquid volume, this results in an insulation which will seal every nook and cranny. This means complete elimination of air infiltration in every area it is applied.

H<sub>2</sub> Foam Lite is 100% open cell, this means that when applied to any surface it allows any moisture present to dry out through evaporation. This is important as timber and masonry surfaces need to breathe moisture vapour to ensure that no damp or rot problems are caused. H<sub>2</sub> Foam Lite acts as an air barrier while still being moisture breathable, this works through the same principle as a Gore-Tex jacket, which keeps the wind out while letting your body breathe and not sweat.

H<sub>2</sub> Foam Lite carries, amongst others, BBA accreditation which means that it is acceptable for new and old domestic UK homes.

# Closed Cell

Closed cell foams are used when moisture breathability is not a requirement. Icynene's leading closed cell foam is H<sub>2</sub> Foam Forte (MDR-210).

These insulations are usually used in industrial steel framed/sheeted buildings. This product achieves a very low U-Value and is very rigid, it is usually applied in thinner layers (50–100mm) and will withstand a light wash down.

Closed cell products should not be used within a residential application as it does not allow the timbers to breathe.

## Suitability of open-cell and closed-cell spray foam

	<b>Icynene</b>  <b>H<sub>2</sub>FOAM LITE</b>	<b>Icynene</b>  <b>H<sub>2</sub>FOAM FORTE</b>
Remains soft/flexible to expand & contract during normal structural shifting	✓	✗
Allows moisture to escape, for example in case of leakage or condensation	✓	✗
Not a food source for mould	✓	✓
Controls airborne moisture flow	✓	✓
Controls flanking sounds	✓	✗
Air Barrier	✓	✓
Blowing Agent	<b>Water</b>	<b>Water</b>
Air-filled cells	<b>Yes</b>	<b>Yes</b>

## Summary

To sum things up, open cell insulations are the best suited domestic applications, whereas closed cell foams are best suited to industrial applications, we understand that this will not answer all your questions but we hope it has helped explain the differences between the basic products, but as always we are happy to discuss this further.

For accreditations and certificates, please see our site.

01473 559088

[sales@harmoni-insulation.co.uk](mailto:sales@harmoni-insulation.co.uk)

[www.harmoni-insulation.co.uk](http://www.harmoni-insulation.co.uk)

Edison House  
Edison Close, Ransomes Europark  
Ipswich, Suffolk IP3 9GU

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