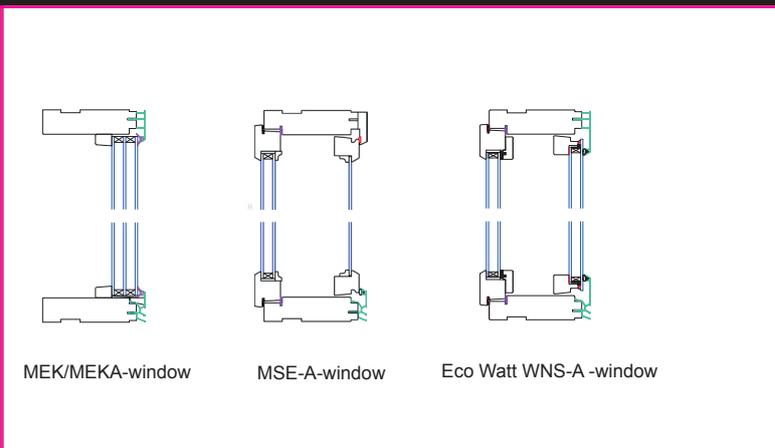




Windows & Doors

Lammin Signal Window®



Most Lammin window and door models are available as Signal Windows®. The structure and glazing of the Signal Window® have been optimised so that the window allows the penetration of mobile network frequencies from 800 MHz to 2.6 GHz (2G, 3G, and 4G/LTE) significantly more effectively than a regular product.

The indoor reception of mobile phones and devices using mobile data can be improved by installing Lammin Signal Windows® that allow the penetration of mobile signals to a greater extent than regular windows. The selective glass panes in regular windows effectively dampen the penetration of mobile signals through the window. At least one selective glass pane is used in each regular window. The more selective glass panes used in the windows, the greater their effect on the signal dampening of the windows. The Lammin Signal Window® dampens signals remarkably less than a regular window.

The Signal Window® is a completely passive solution and does not require any electricity in order to function. In addition, it is compatible with the subscriptions of all operators. This property does not weaken the U-value of the window but enables the significant strengthening of mobile signals depending on the conditions. The product is recommended for use particularly in buildings where effective signal-dampening materials have been used in the outer structure.

Availability by collection

The Signal Window® does not differ from regular windows in terms of appearance, properties or installation. The dimensions, models, glazing, additional properties, and accessories of the Signal Windows® are always selected individually for each order to meet the customer's current needs.

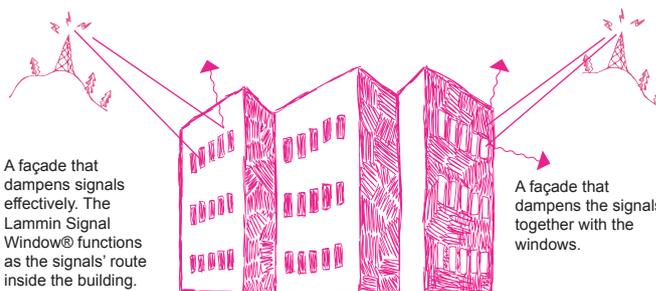
Design

The Signal Window® can be used for 'facilitating' the penetration of signals through the window without compromising energy efficiency. The signal fields outside the building determine the strength and quality of the signal inside the building. The strength of a signal coming from outside the building is always weaker than the strength of a signal inside the building. The Signal Window® is a passive solution, and it allows the penetration of signals more effectively than a regular window. The Signal Window® does not strengthen weak signals; however, it does not dampen or weaken them as much as regular windows.

Due to reflections, signals typically arrive from different angles. The building's environment and geometry, as well as the construction materials of the outer walls and the possible entrance angles of the signals, can be taken into account

when placing the Signal Windows. Usually it is not possible to say for sure from which direction the mobile phone network signals penetrate the outer walls of the building.

To put it simply, the progress of the signals through the building's façade could be described with a box model, where the façade parts that dampen the signal the least primarily determine the signal strength that can be achieved inside the building.



When the wall elements dampen the signals more effectively than the windows, the windows function as a route/opening through which the signals can get inside the building. In that case, regular energy-efficient windows may prevent signals from entering the building. When it comes to indoor reception, the big picture is what matters.

We recommend that Signal Windows® be used in all the windows of the building to improve the penetration of mobile signals. Generally, we recommend that a Signal Window® be installed in each room. In practice, it is only rarely possible to designate rooms where mobile devices will never be used. Placement of the product in the building can be individualised. Our salespersons will provide you with competent service when you are ordering the windows. Before ordering the products, it is advisable to discuss which windows will be equipped as Signal Windows®. Retrofitting Signal Window® may cost more or be altogether impossible.

Operators are constantly monitoring the functionality of their networks and may adjust or redirect their base station aerials, if necessary. This may cause the signal direction to change. In addition, the signals of different operators can come from different directions. That's why it is advisable to select Signal Window® for all openings. Achieving the best result does, however, require some advance planning, which our sales team will help you with.

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