

# Danish folding doors

- Danish design and manufacturing
- Bespoke for each individual project (up to 2.7m's height and 6m's width)
- Top hung design uses no guide rail and makes threshold cleaning easy
- Slim profile; 56mm per door frame gives a maximum frame - to - frame width of 117 mm
- Use of FSC<sup>®</sup> certified hardwood (oak, mahogany and heat treated beech\*)
- Superb Insulation - U-values typically from 0.9 W/m<sup>2</sup> K
- No need to repaint the beech for 20-30 years in normal conditions due to the heat treatment\*
- Air permeability EN 12207 - Class 4 at +/-600 Pa
- Watertightness EN 12208 - Class E1200
- Security tested to EN1627-30 / PAS24
- Use of highest marine-grade acid-free brushed stainless-steel handles and hinges (316-A4) to prevent rusting in even harsh seafront locations. All ironmongery follows a strict principle of 18mm
- Precision manufacturing by use of advanced five-axial CNC-machines
- Every product is checked and provided with an approval number
- Lead time usually 5-7 weeks from order to delivery, and the doors can be installed in a few hours

\* Heat treated wood - please see overleaf.



Hinge



Handle



Threshold + wheel



Made in Denmark



# \*Heat treated wood

## The Vikings and Lacuna

Heat treatment is not a new invention – whenever a Viking ship has been found at the bottom of Roskilde Fjord in Denmark, it has nearly always only been the keel that has been intact. To bend the bow and stern keel, the Vikings heat-treated the wood in hot embers, using water cooling to ensure that it did not catch fire. Once the wood was warm and smooth, the keel was bent into the desired shape. In this way, the sugars (Lactose and Glucose etc.), which the decomposition bacteria would otherwise live off, were burnt away and the wood achieved the unintended effect of a lifespan of many centuries.

The Danish company Lacuna makes use of this old method and manufactures the majority of their doors with heat treated wood. Being concealed in large 198 degree hot ovens for 24 hours, the structure of the wood changes permanently and gains a number of advantages, which ordinary soft or hard woods do not have.

## Natural durability, dimensional stability and low maintenance requirements

Not only does the heat treatment increase the natural durability (and becomes equal to teak -Class 1) it also makes the timber very stable, and accordingly it is unable to absorb moisture and expand in humid weather. This is obviously an essential attribute for folding doors, where many panels in succession need to keep their dimensional stability in order to function properly all year around. It furthermore means that the paintwork does not crack and maintenance therefore is at a minimum.

## Insulation properties

Another advantageous effect of the heat treatment is the air-filled structure that the timber adopts. It basically gains the characteristics of fibreglass and consists of many small air pockets neatly packed together. It is these that give the wood the excellent insulation properties and thereby the low u-value.

## Summary

Lacuna bi-fold doors: The materials have been tested at the German testing centre IFT- Rosenheim and subsequently the doors have been certified by the approved testing centre at Danish Technological Institute. They have total u-values typically down to 0.9 W/m<sup>2</sup>, air permeability has been tested to EN 12207 - Class 4 at +/-600 Pa, water tightness to EN 12208 Class E1200 and security to EN1627-30 / PAS24.



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