

## SMOKING EXPLAINED

European oak floors can be smoked. The smoking process gives the floor a varied range of complimentary tones which give a completely unique finish and unlimited design options, as no two boards will be exactly the same colour. Smoking (also known as fuming) is a traditional method for enriching and darkening the floor's appearance. The tannic acid within the oak reacts with ammonia to produce the final colour. Not every tree, or even every board contains the same quantity of tannic acid, therefore the colour and appearance can vary significantly from board to board and throughout the finished floor.

The smoking process involves wood being placed in an enclosed, fully sealed chamber with all the surfaces that require treatment being exposed to the circulating air. Ammonia (ammonium hydroxide solution) is then introduced into the atmosphere which causes a chemical reaction with the tannins in the wood, changing the wood's appearance. The concentration of tannins within the wood determines the final colour and appearance of the oak, including overall darkening and interesting colour variation. We distinguish two ways of smoking: surface smoking and core smoking.



### Surface smoking

The oak engineered board is exposed to ammonia in a smoking chamber. The longer the board is exposed to ammonia, the darker the result. Surface smoking is done between 1 hour up to 24 hours. The smoked effect penetrates the oak approx 1-2 mm. With future sanding, the smoked brown tone will be lost.

Also, one would have to sand off quite a lot of oak to get down to an even, white oak surface (approx 2 mm).

Depending on the smoking time, we distinguish three surface smoking intensities:

- Single smoking: 1 hour
- Double smoking: 8 hours
- Triple smoking: 24 hours

Beside time and the amount of ammonia used, the result (colour) depends on miscellaneous criteria, such as:

- Tannin content of the individual board
- Temperature
- Relative humidity in the smoking chamber

Therefore, smoked floors are never the same. There will always be colour differences between batches, and within one batch (as the tannin content differs per individual board).

Please also note that surface smoked floors tend to become up to 25-30% lighter over time (usually within the first 4-6 months) due to exposure to UV light. Core smoked floors show less colour variation than surface smoked floors and are colour stable (they don't fade).



### Core smoking

To smoke the oak through-and-through, we smoke the top layers, not the engineered board. This process can be done in a matter of days, with the use of pressure and high temperatures. This makes the oak brittle, however, making it very susceptible for cracks. Therefore, we smoke the old-fashioned way; we just expose the oak to ammonia gasses without any added pressure or temperature. This process takes about 3-4 weeks alone.

Due to the core smoking process, core smoked oak floors have different physical properties than regular (and surface smoked) oak floors. The wood is a little denser and becomes rather water repellent. Also, the chemical composition has changed. Consequently, accurate electronic resistance moisture measurement is not possible. Exact moisture measurement is only possible through an oven dry test. By experience we have learned that with a regular moisture measurement tool, readouts of core smoked oak show values that are approx 2.5% - 3.5% higher than regular oak.

### Availability

Please be aware that we have a limited stock in core smoked top layers for our [DEEP Down collection](#). These are all 4 mm and come in a [Mill Run grade](#) (Mix of Natural and Character). Other dimensions and specific grades are produced on request only. As these need to be custom core smoked, lead times are longer (approx 11-12 weeks). The maximum length for core smoked floors is 3 meter (10').

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