Technical Leaflet

EGGER OSB and EGGER DHF material characteristics for the hygrothermal simulation of building components

Hygrothermal simulation

Basics

The hygrothermal simulation is a comprehensive calculation model for the coupled thermal and moisture transport in building materials or components. It is based on thermodynamic principles.

Material Data

General

The tests to determine the material characteristics were carried out at the WKI in Braunschweig. The values for sorption moisture at 100% humidity were extrapolated. We provide the data as an overview in pdf-format. If required, a corresponding data set is also available in xml-format.

For calculations in the numerical method, the use of the value of sorption humidity at 100% is practicable.

EGGER OSB 3

Material moisture at free water saturation: 44.0 mass-%.

Table 1: Sorption moisture at 20°C

Relative humidity of air	0%	30%	50%	65%	80%	95%	100%
Sorption moisture	0	5,8	7,5	9	13,8	26,2	32

Table 2: µ-values as a function of air/material humidity with 600 kg/m³ raw density

Relative humidity of air	16%	26%	53%	73%
µ-value	231	227	164	152

EGGER OSB 4 TOP

Material moisture at free water saturation: 38.0 mass-%.

Table 3: Sorption moisture at 20°C

Relative humidity of air	0%	30%	50%	65%	80%	95%	100%
Sorption moisture	0	5,2	7,1	8,8	13,2	24,5	28

Table 4: µ-values as a function of air/material humidity with 620 kg/m³ raw density

Relative humidity of air	16%	26%	53%	73%
µ-value	235	321	98	122

EGGER DHF

Material moisture at free water saturation: 43.0 mass-%.

Table 5: Sorption moisture at 20°C

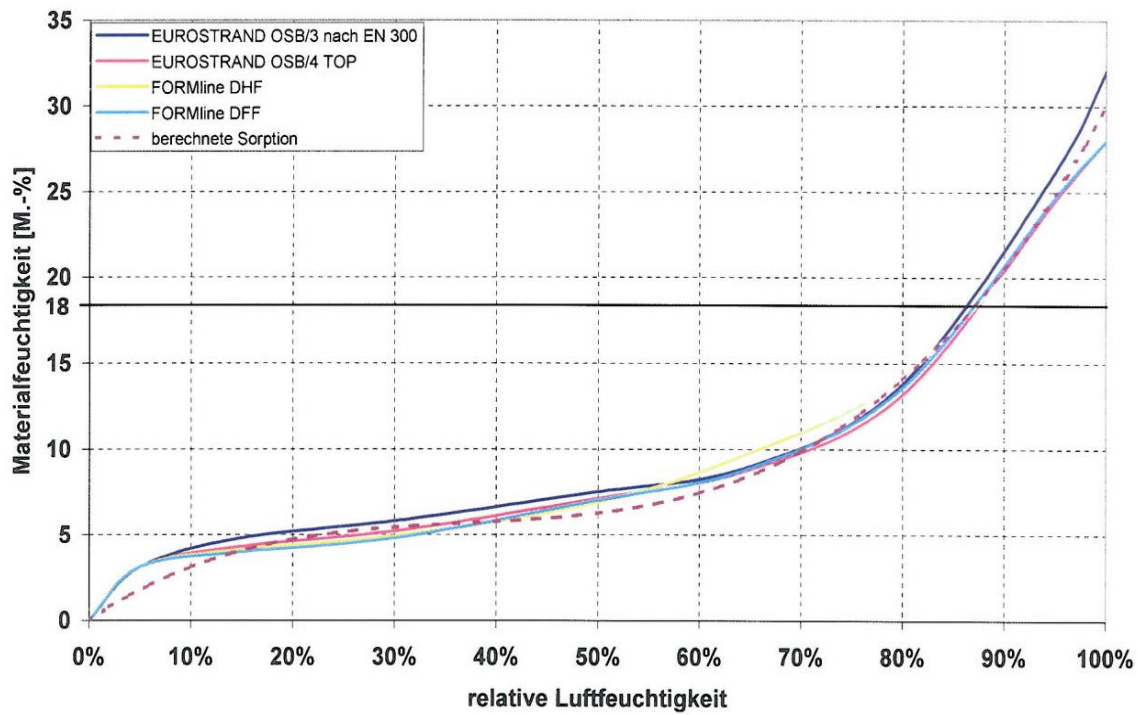| Relative humidity of air	0%	30%	50%	65%	80%	95%	100%
Sorption moisture	0	4,9	6,9	9,8	14,2	23,4	26

Table 6: µ-values as a function of air/material humidity with 615 kg/m³ raw density

Relative humidity of air	16%	26%	53%	73%
µ-value	14	12	12	12

Diagram: Material moisture as a function of relative humidity

Legend:
- EUROSTRAND OSB/3 nach EN 300
- EUROSTRAND OSB/4 TOP
- FORMline DHF
- FORMline DFF
- berechnete Sorption

Y-axis: Materialfeuchtigkeit [M.-%]
X-axis: relative Luftfeuchtigkeit

EPD

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