



20th International Symposium of MASE
"RESILIENT STRUCTURES"
September, 28th - 29th, 2023, Skopje, N. Macedonia



**When it matters, where it matters,
as resilient as Knauf**

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Authors: Blažen Zotovski



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Functional

**Energy efficient
building**

**Standard fire
protection**

**Standard sound
insulation**



**Economic
construction**

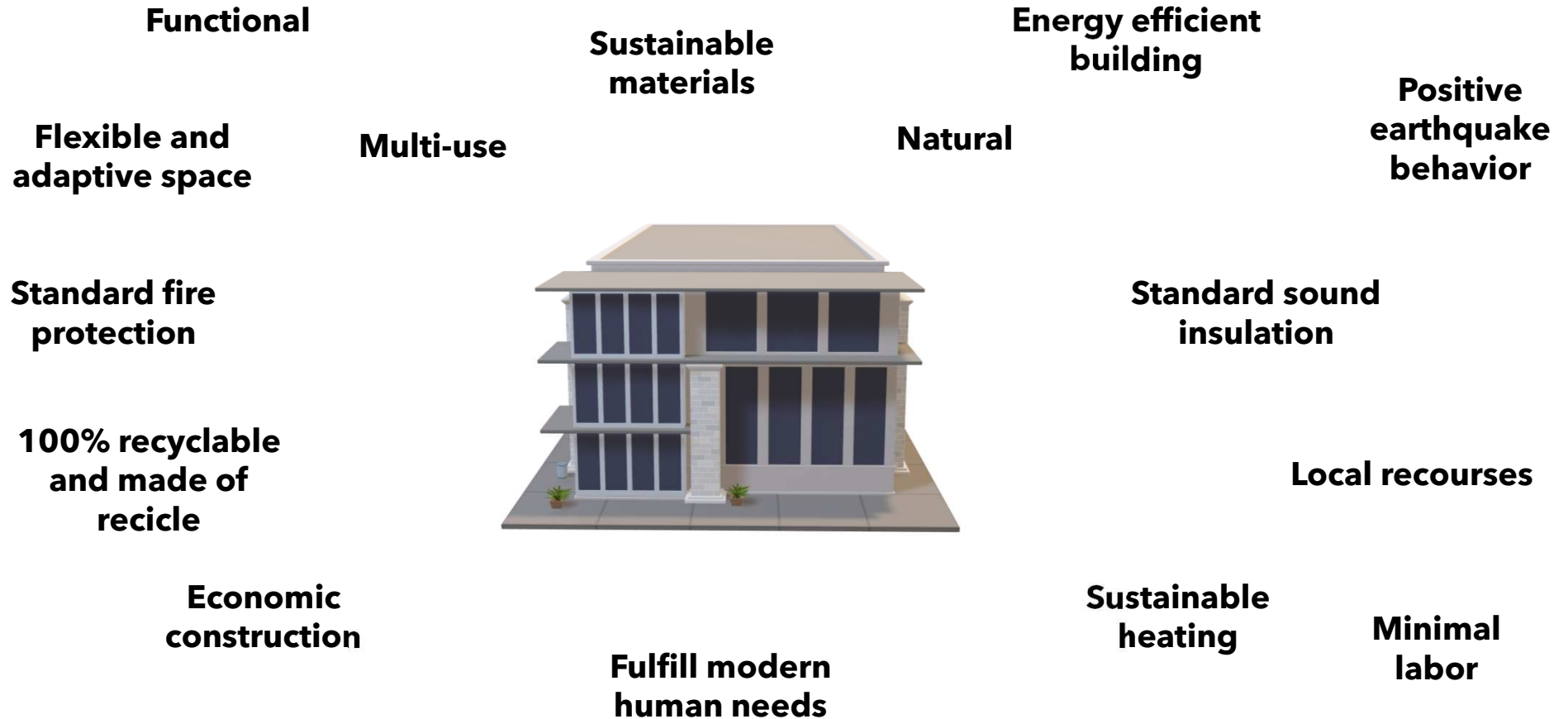
**Sustainable
heating**



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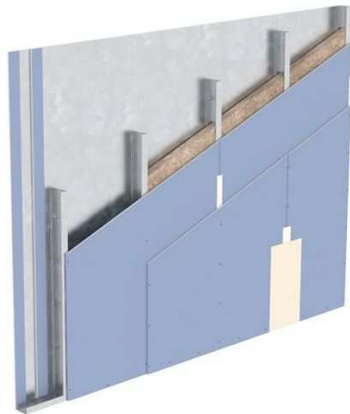


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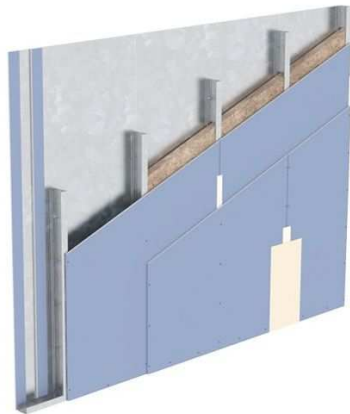


100% natural, VOC free, radiation free, metal free...

100% recyclable

Local production and labor (max. 400km)

...



Thickness

10cm

15cm

Weight

49kg

150kg

Sound insulation

57cm

44cm

Installation time

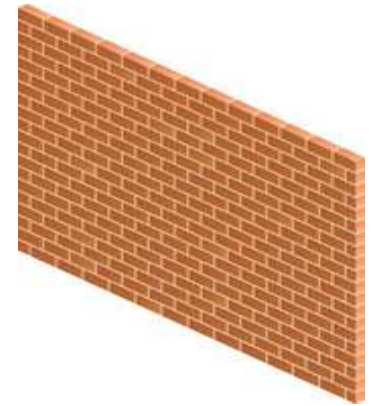
1,1 h/person

2,63h/person

Thermal resistance

0,55W/m²K

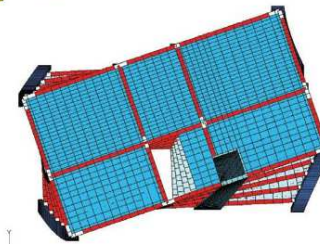
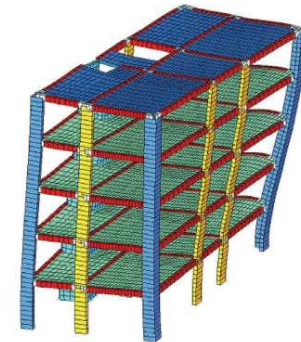
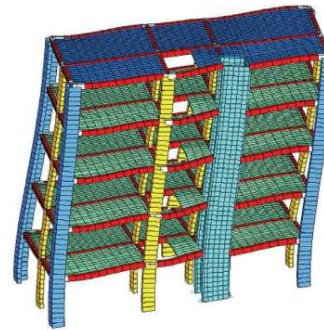
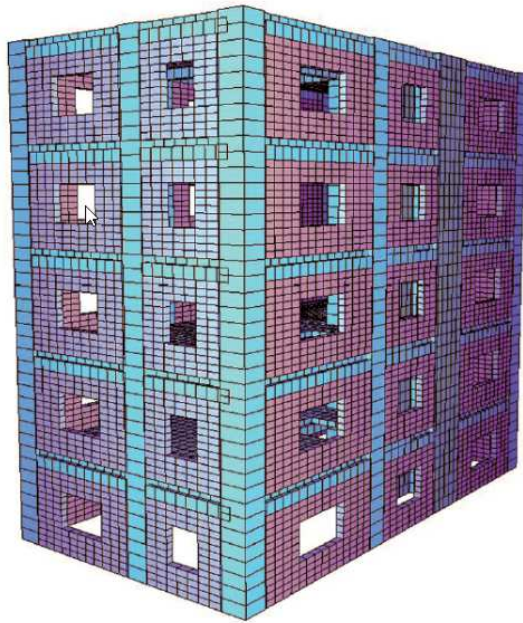
1,4W/m²K





Impact of drywall systems on earthquake resistance of buildings

Behavior of the structure





Impact of drywall systems on earthquake resistance of buildings

Reduced mass

The reduced weight of Knauf systems means:

- Less load to be transferred to the supporting structure
- Lower self-load of the component due to the seismic load in the lateral direction relative to the plane of the component.
- Less potential danger in the building in terms of personal injury and damage.

1 m ² Internal wall as	Weight per unit area
■ Masonry $d = 11.5$ cm	Approx. 145 kg/m ²
■ Metal stud partition, single-layer cladding	Approx. 25 kg/m ²
double-layer cladding	Approx. 50 kg/m ²
→ Weight reduction by <u>65 % to 83 %</u>	



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Impact of drywall systems on earthquake resistance of buildings

Simple reconstruction / repair





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Impact of drywall systems on earthquake resistance of buildings

Simple reconstruction / repair



Different levels of damage to Knauf systems, when moving horizontally or vertically up to 27mm



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**Thank you for
your attention!**
