

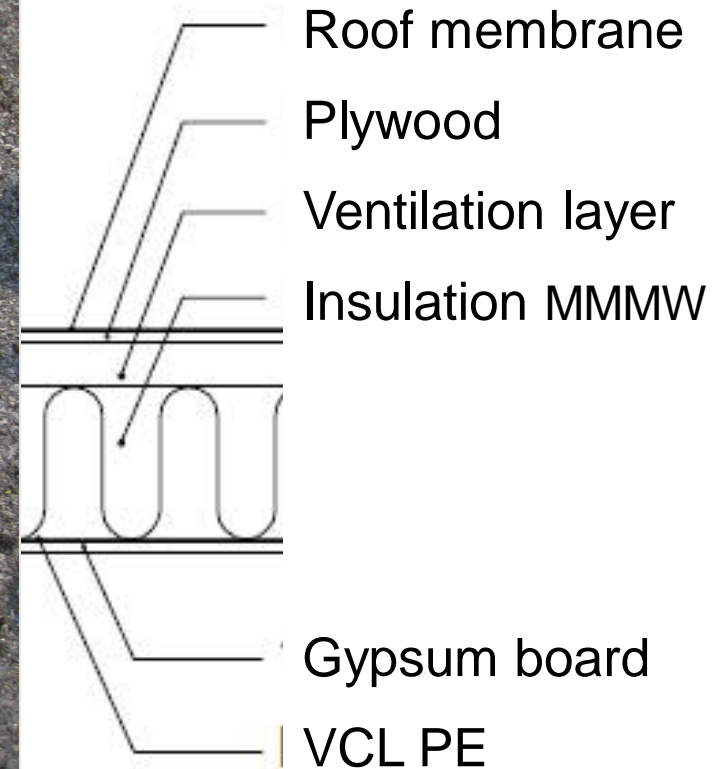
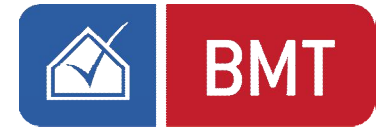
# A new method for drying out low pitched cold deck roofs.



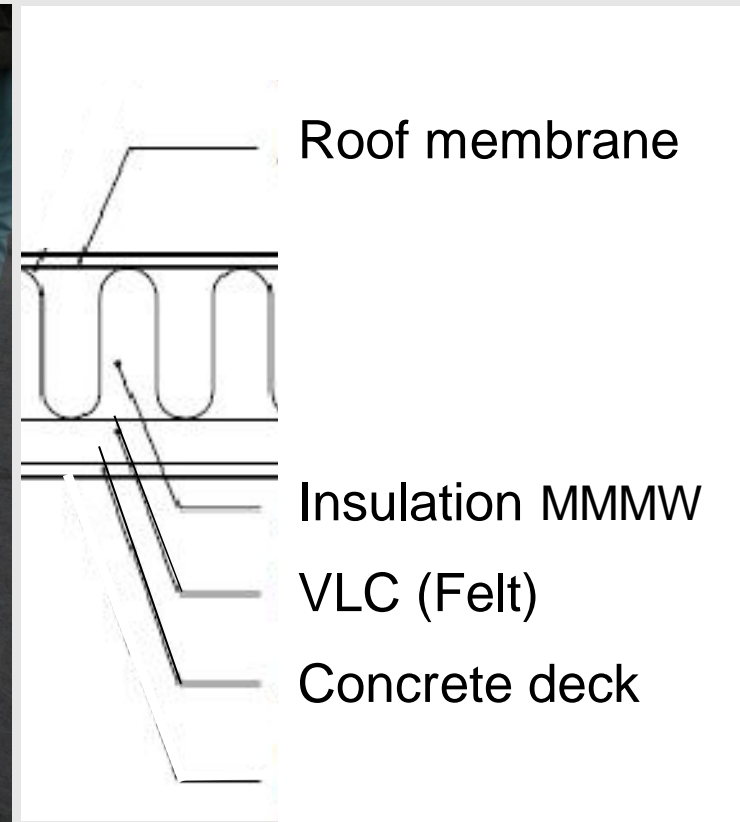
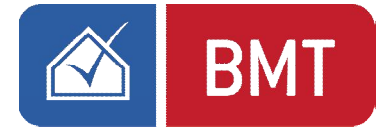
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[www.byggeteknik.com](http://www.byggeteknik.com)

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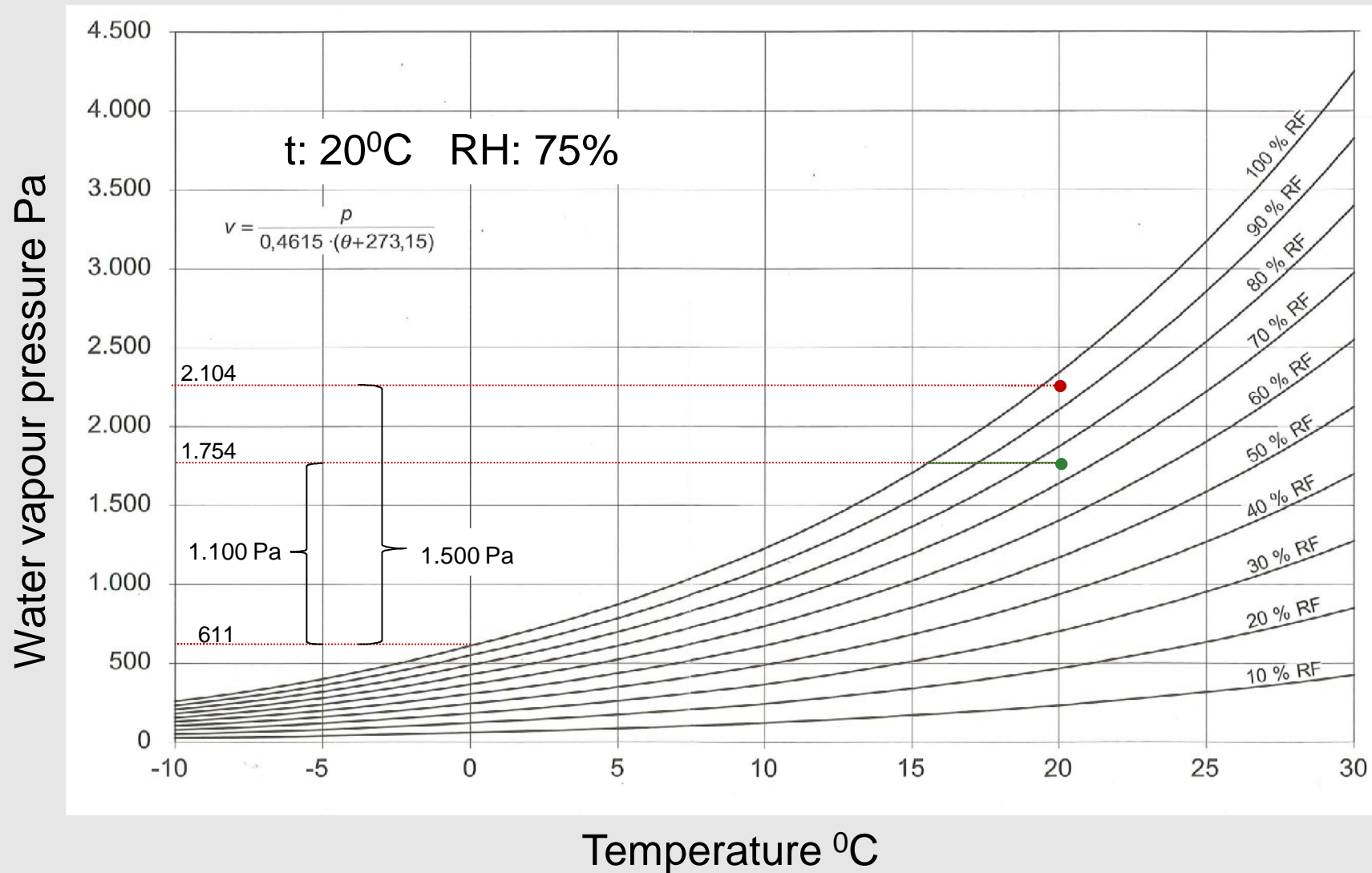
# Ventilated Cold Deck Roof Prefab and In situ



# Warm Deck Roof In situ



# Moist air



# Diffusion



Material	Z-value/m GPa m <sup>2</sup> s/kg
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Air

5,5

dP = 1.100 Pa

MMMF, light

6

MMMF, high density.

9

Expanded polystyrene  
(20 kg/m<sup>3</sup>)

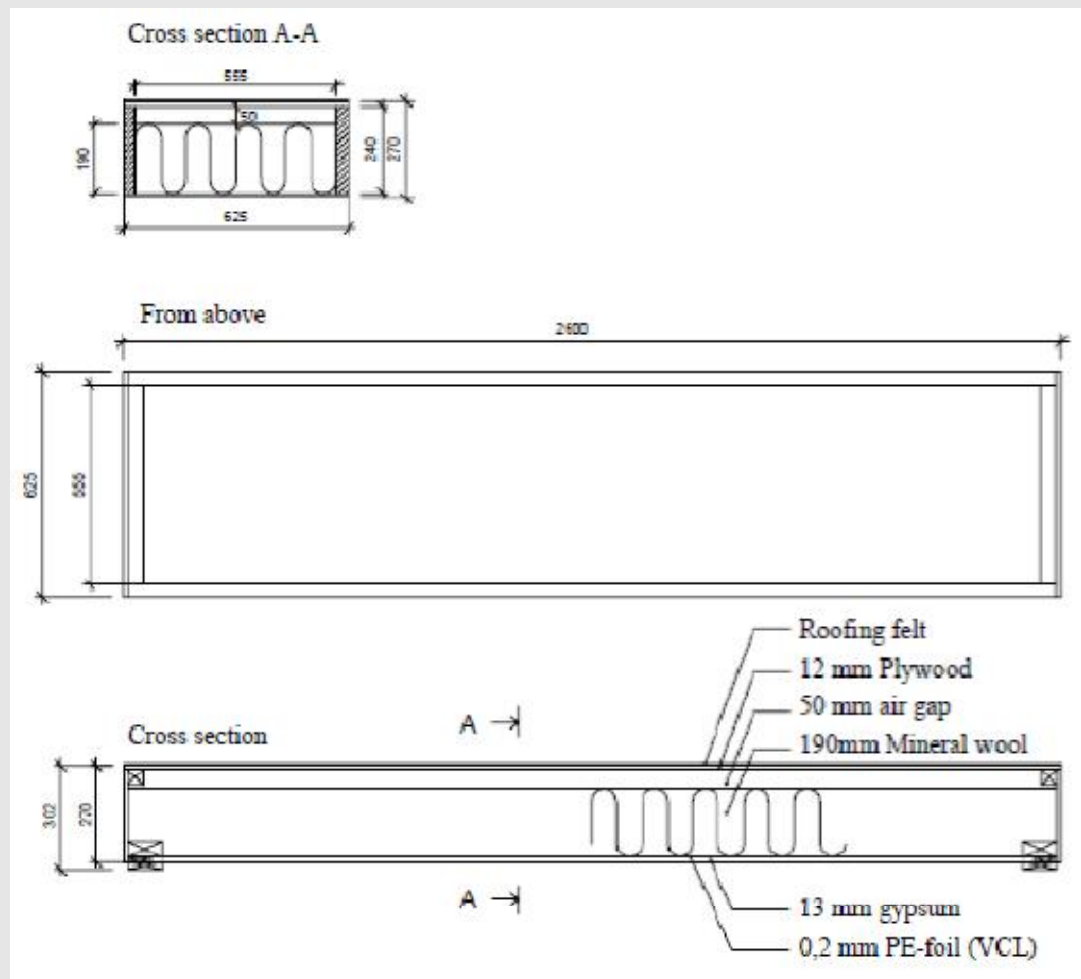
250-350

Expanded polystyrene  
(32 kg/m<sup>3</sup>)

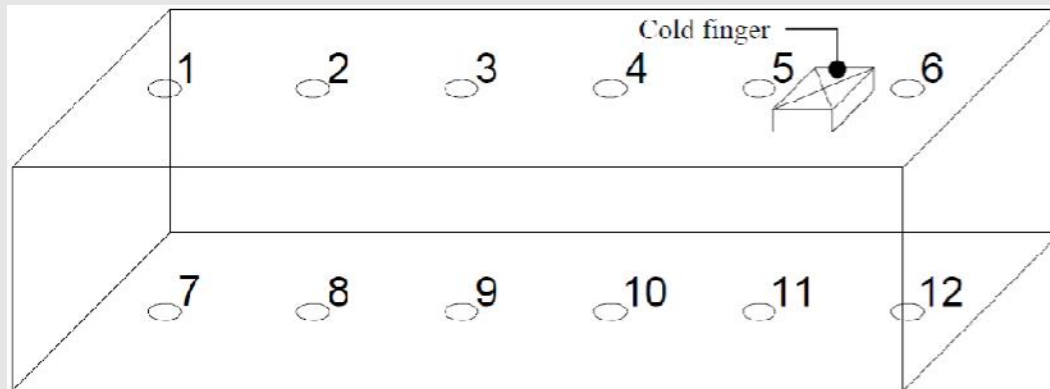
650-1500



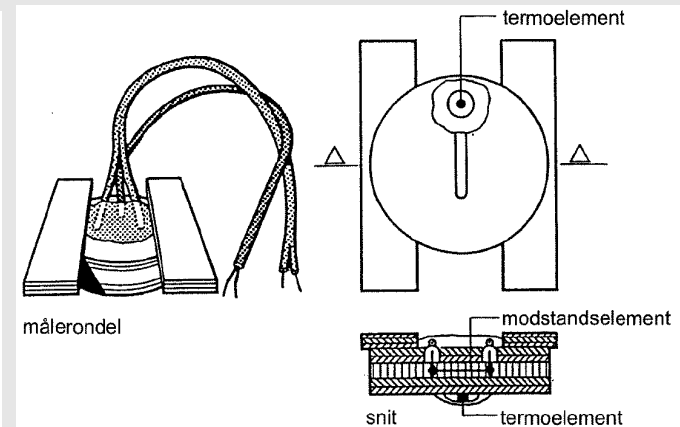
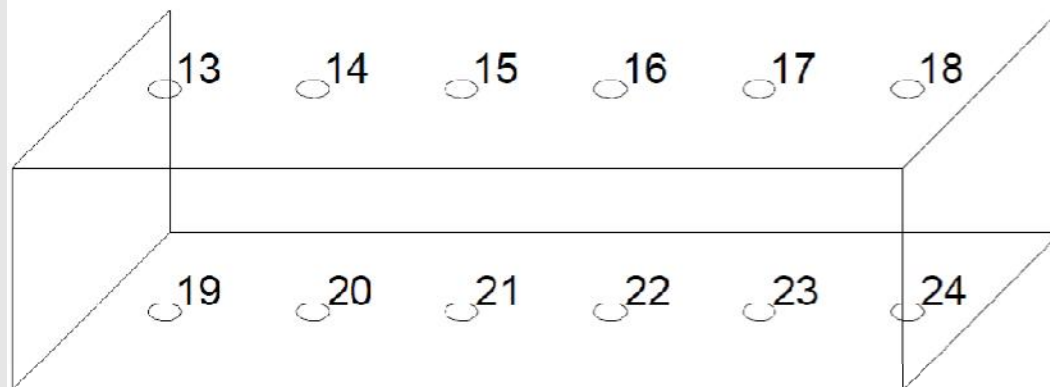
# Test Roof Component



# Test Roof Component Measuring points



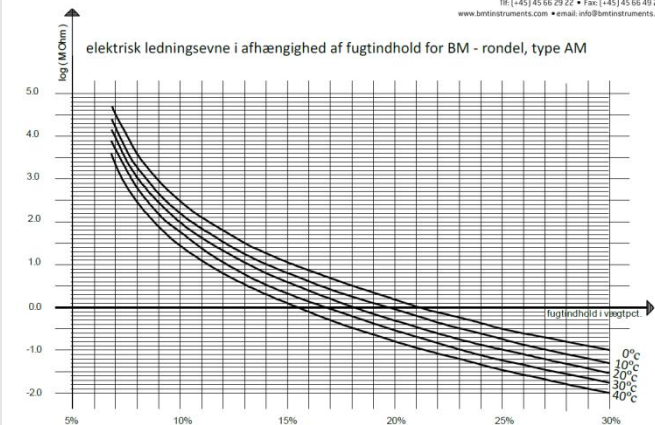
The "Cold finger" is installed between measuring point 5 and 6.



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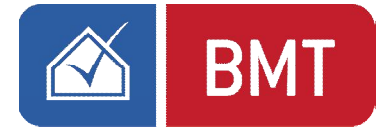


# Test Roof Component





# Test Roof Component “Cold finger”

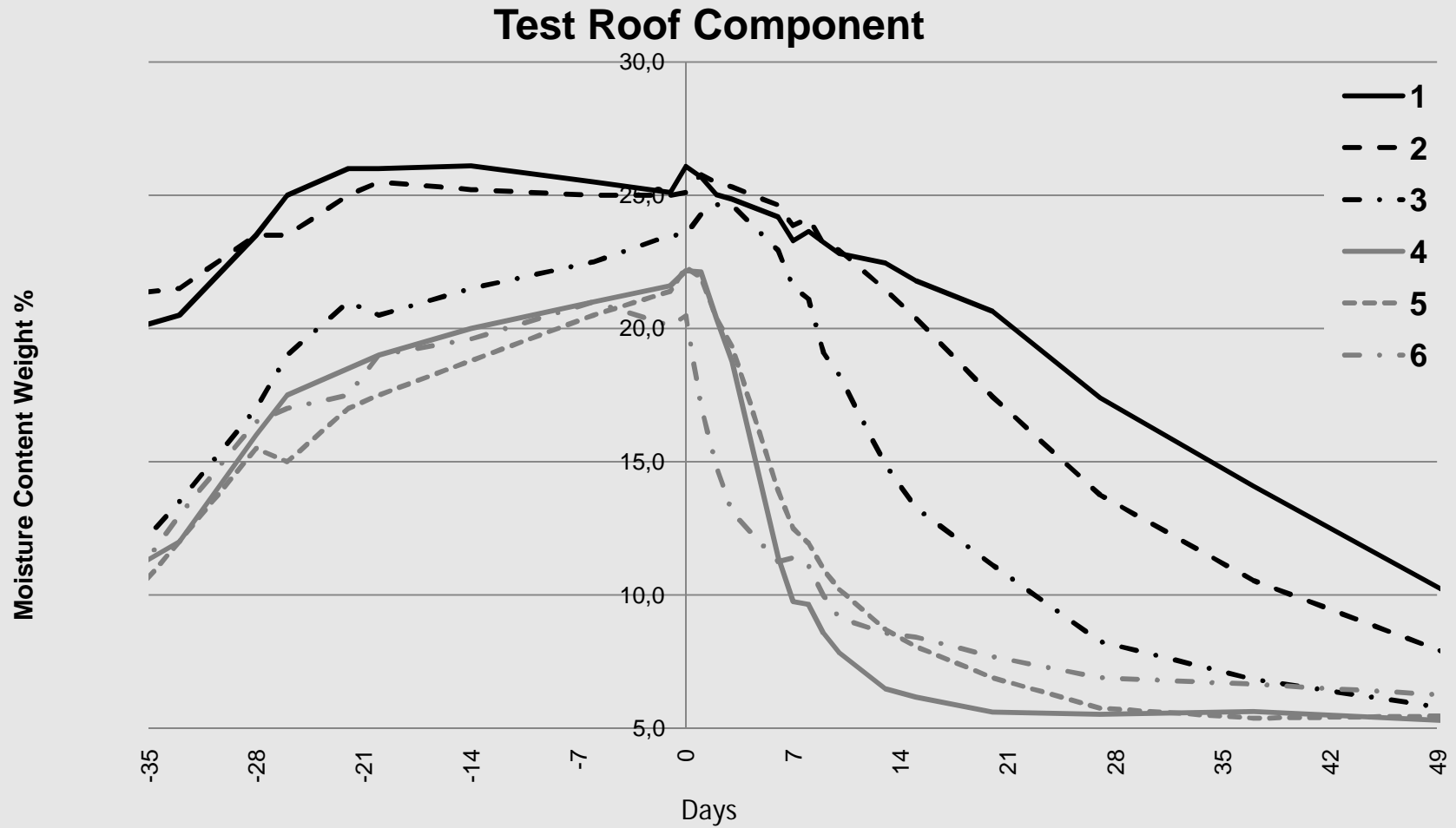


12 v DC standard cooling cabinet



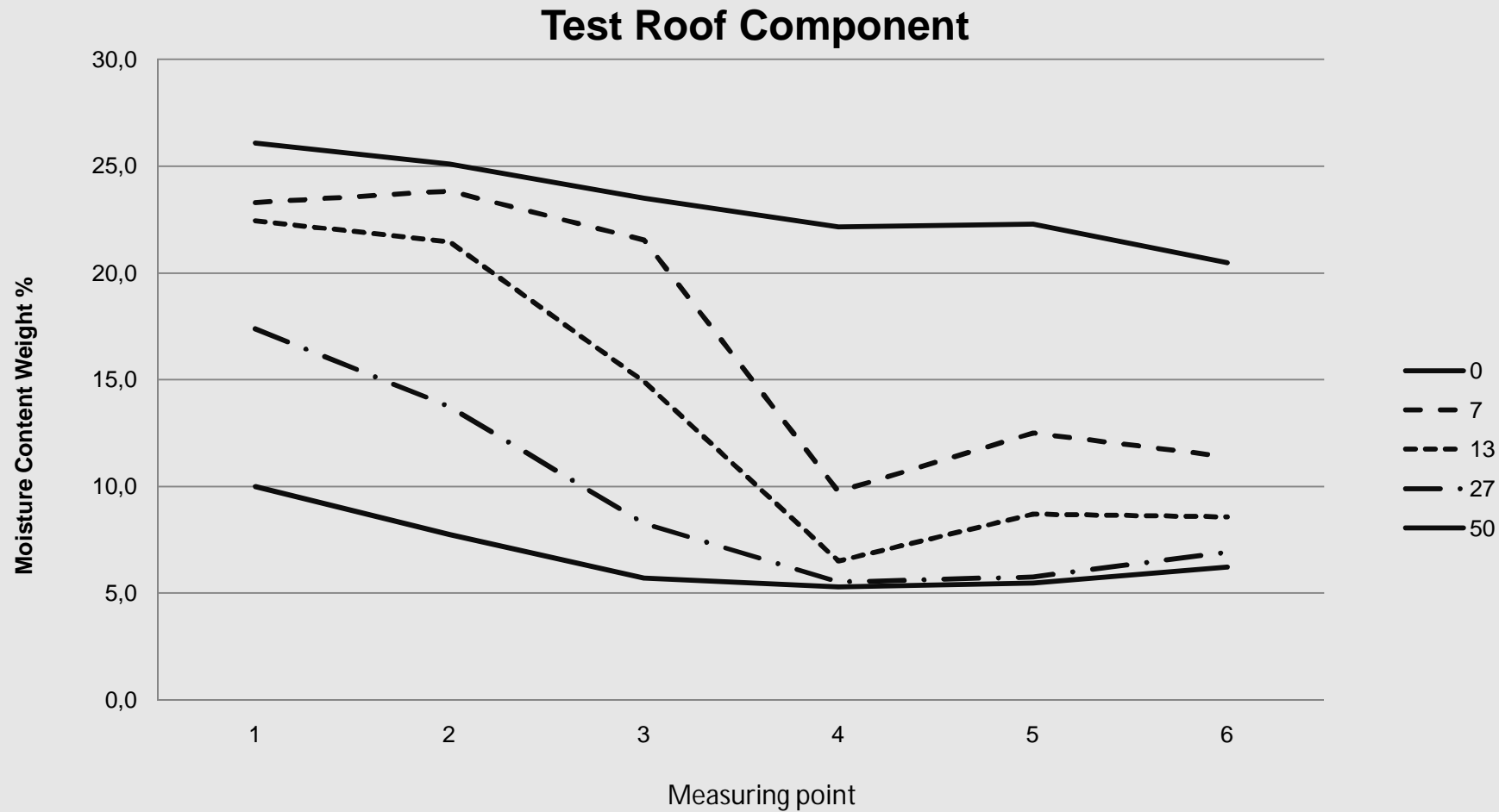
# Results

## Test Roof Component



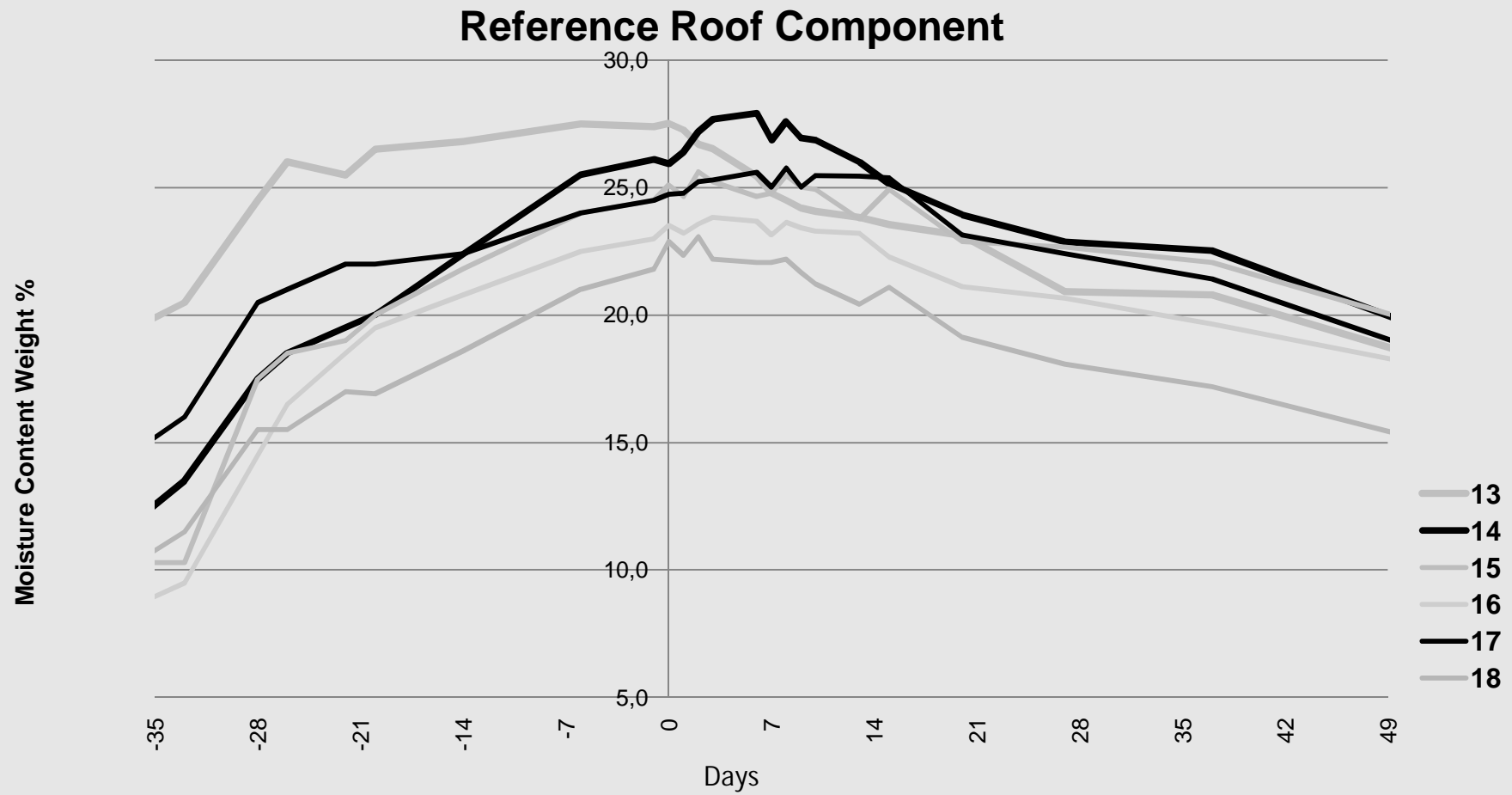
# Results

## Test Roof Component



# Results

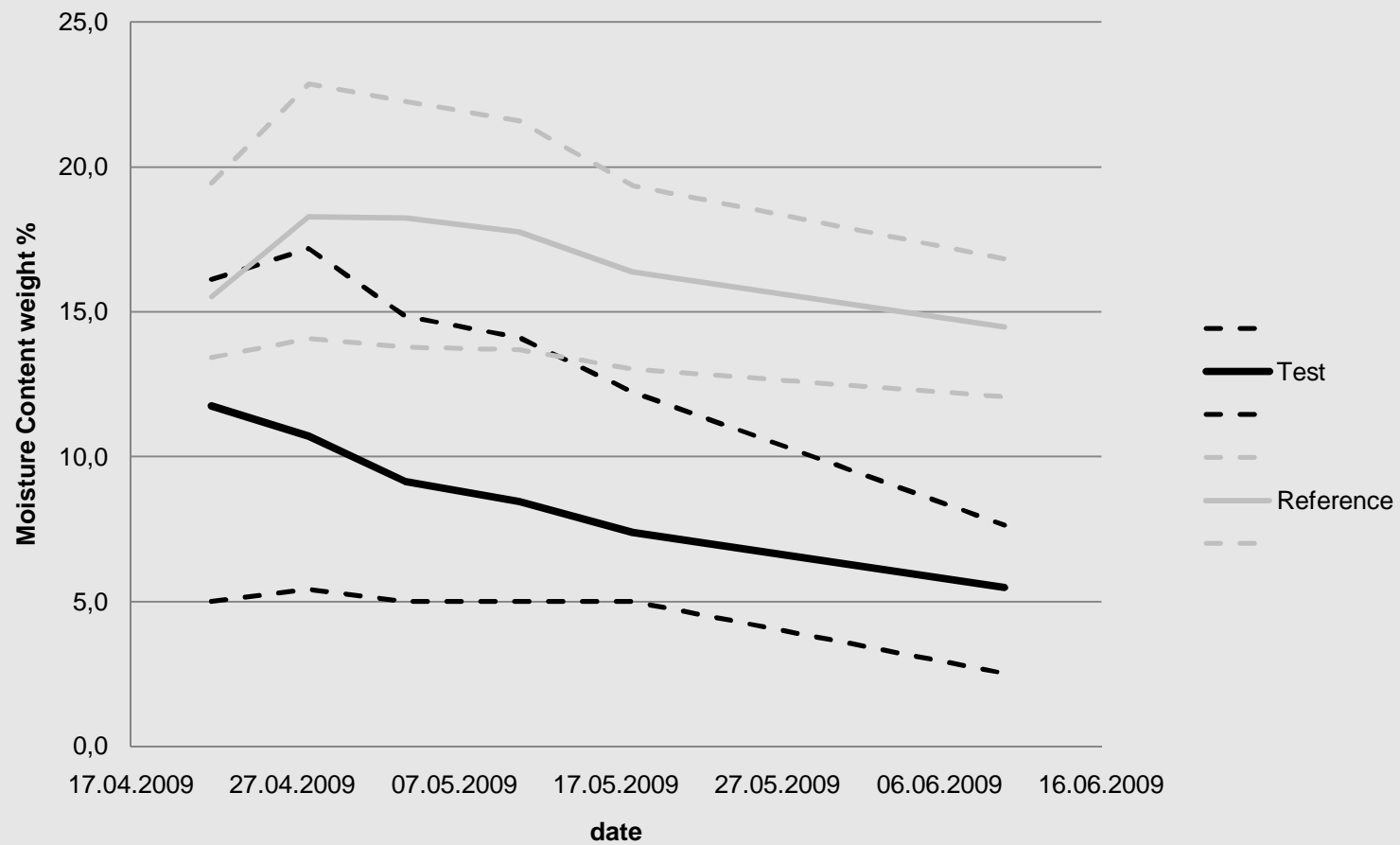
## Reference Roof Component



# Results

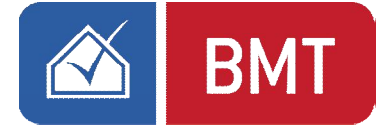


## Roof Components Bottom





# Discussion



Diffusion – takes a long a time

Moisture profiles

Evacuation of condensed moisture

Costs

Cheap to produce

Easy installation (12V)

Running costs

Low power consumption

(15 W compared to 1KW)

No ventilation.

Solar cell

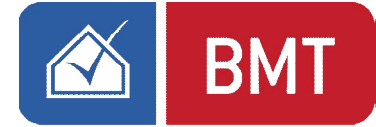
Test dP: 1.100 – 1.500 Pa

80°C 75% RH: 35.500 Pa

25°C 100% RH: 3.200 Pa

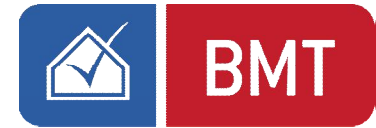
dP : 32.300 Pa

# Conclusion



- Conclusion
  - Drying out under laboratory conditions is demonstrated for a cold deck roof
- Next step
  - Demonstration project in the field
  - Test on warm deck roofs
  - Test in attics
  - Under flooring and other cavities

# A new method for drying out low pitched cold deck roofs.



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