

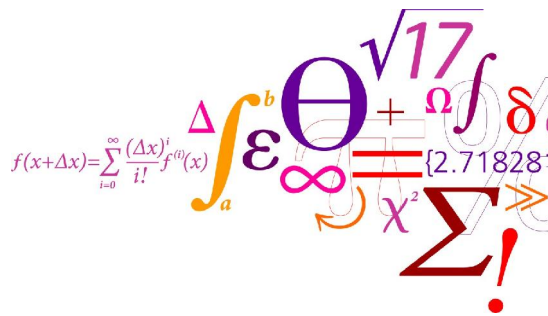


## Climate Classification for Thermally Activated Building Systems

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## Questions to answer

- Does the building need a ...
- ... cooling system?
- ... heating system?
- ... cooling and heating system?
- ... no dehumidification?
- ... intermittent dehumidification?
- ... continuous dehumidification?



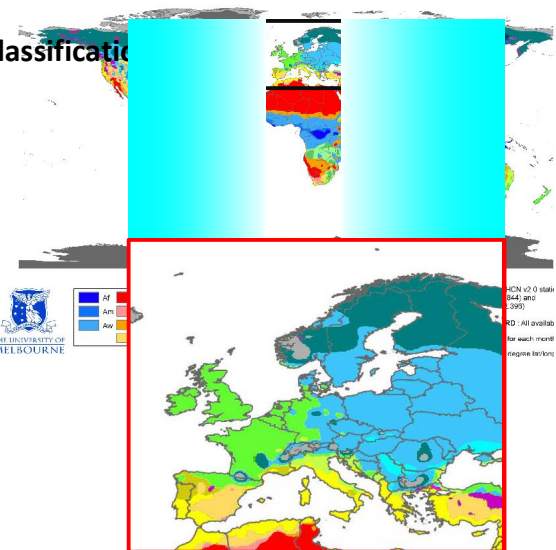
# Available classifications

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World map of Köppen-Geiger climate classification

**Köppen-Geiger climate classification**

- + Well established
- To many zones
- Zones to big
- Insufficient humidity information



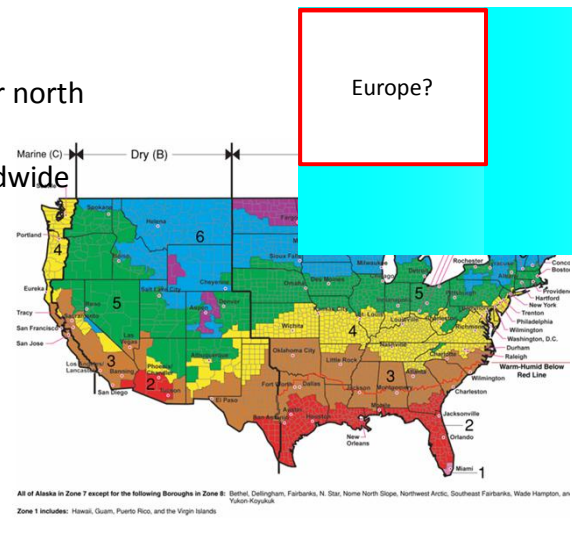
The image shows a world map color-coded by Köppen-Geiger climate zones. A red rectangular box highlights the continent of Europe. To the left of the map is a legend with color-coded boxes for 'Bf', 'Am', and 'Aw'. To the right is a small text block mentioning 'ICM v2.0 (since 1944 and 1995)' and 'All available for each month'. At the bottom right, there is a vertical URL: 'Image source: http://en.wikipedia.org/wiki/File:Koppen\_World\_Map\_(retouched\_version).png'.

# Available classifications

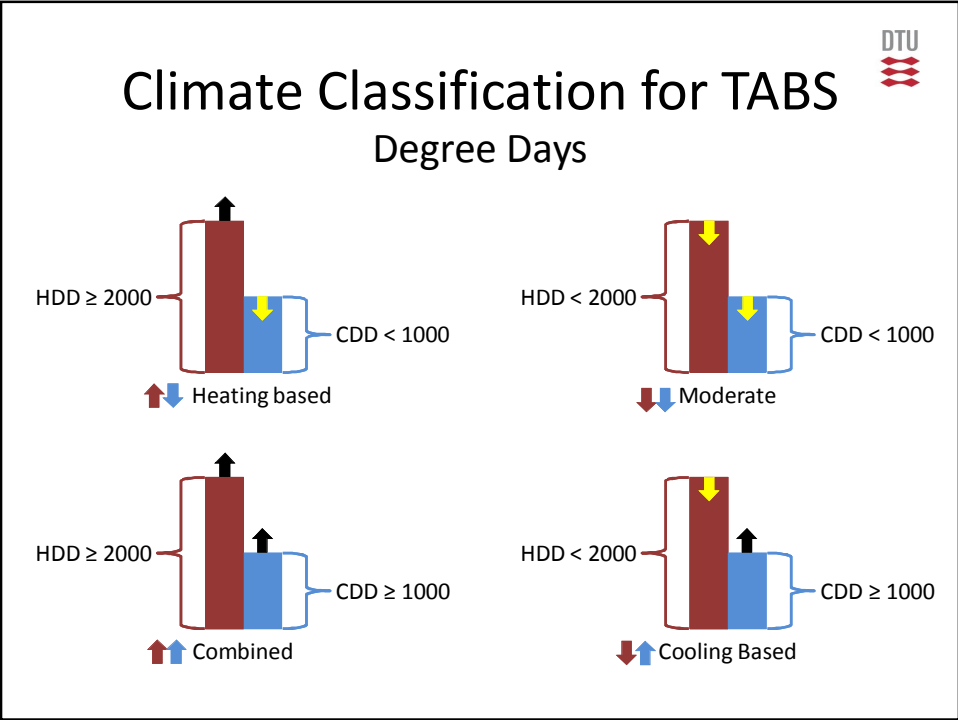
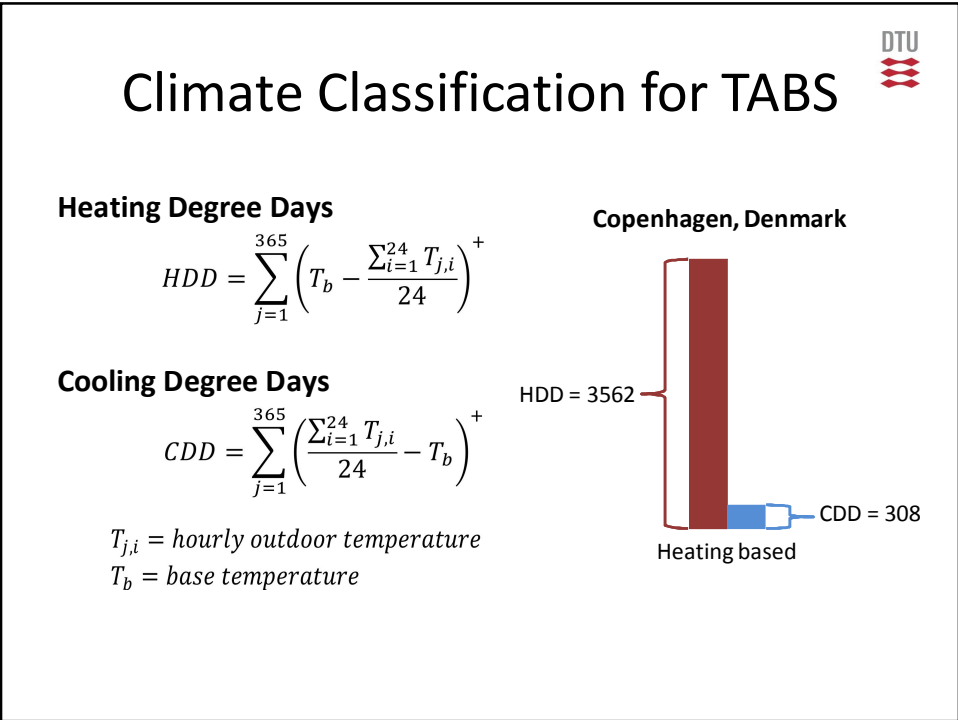
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**ASHRAE Climate Zones**

- + Detailed data only for north America
- + Many locations Worldwide
- Insufficient humidity information (except north America)



The image shows a map of North America divided into numbered climate zones (1-8). A red rectangular box is placed over the Atlantic Ocean and Europe, with the text 'Europe?' inside it. Above the map, there are labels for 'Marine (C)' and 'Dry (B)'. At the bottom right, there is a label 'Warm-Humid Below Red Line'. At the bottom left, there is a note: 'All of Alaska in Zone 7 except for the following Boroughs in Zone 8: Bethel, Dillingham, Fairbanks, N. Star, Nome North Slope, Northwest Arctic, Southeast Fairbanks, Wade Hampton, and Yukon-Koyukuk. Zone 1 includes: Hawaii, Guam, Puerto Rico, and the Virgin Islands'. At the bottom right, there is a vertical URL: 'Image source: http://energy modeling.gameworks.com/1/126455344/'.






## Climate Classification for TABS Humidity restraints

When is humidity a problem?


- Any occurrence of condensation.
- Extended periods with high humidity close to (active) surface.

May lead to:


- Mold growth
- General discomfort




No  
Dehumidification



Intermittent  
Dehumidification

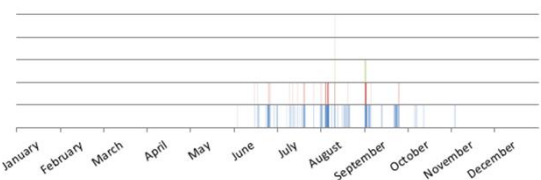


Continuous  
Dehumidification

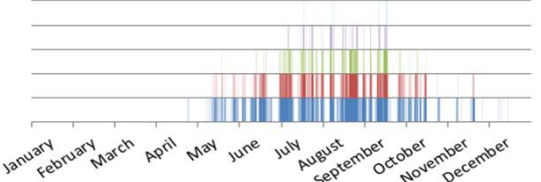




## Climate Classification for TABS Humidity restraints

**Madrid**





**Athens**







No  
Dehumidification




















Intermittent  
Dehumidification

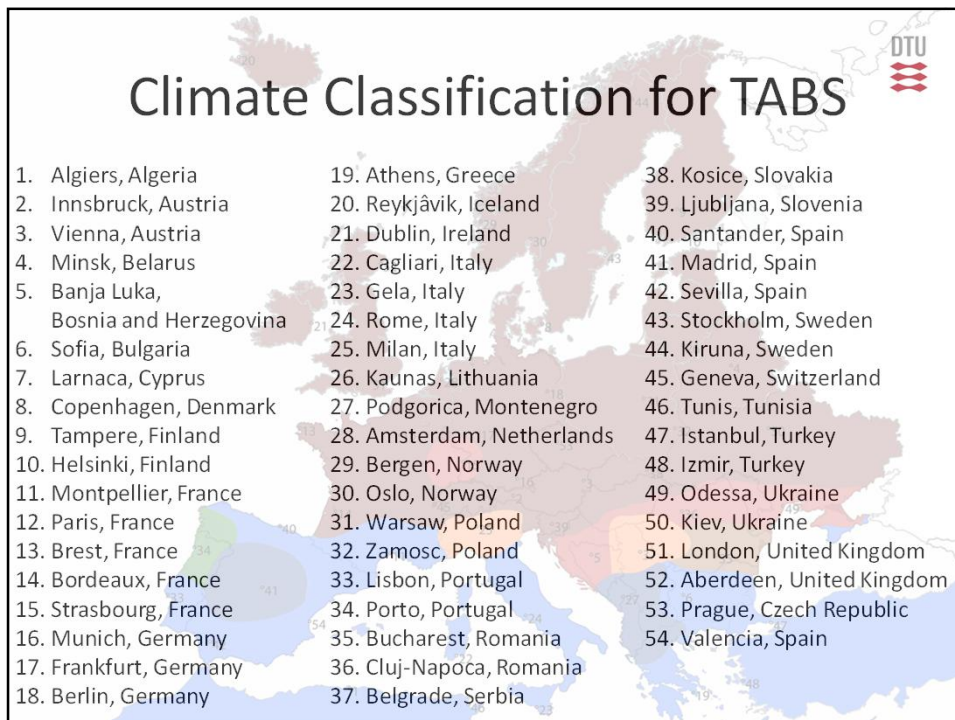
■ DPT > 14 °C ■ DPT > 16 °C ■ DPT > 18 °C ■ DPT > 20 °C ■ DPT > 22 °C

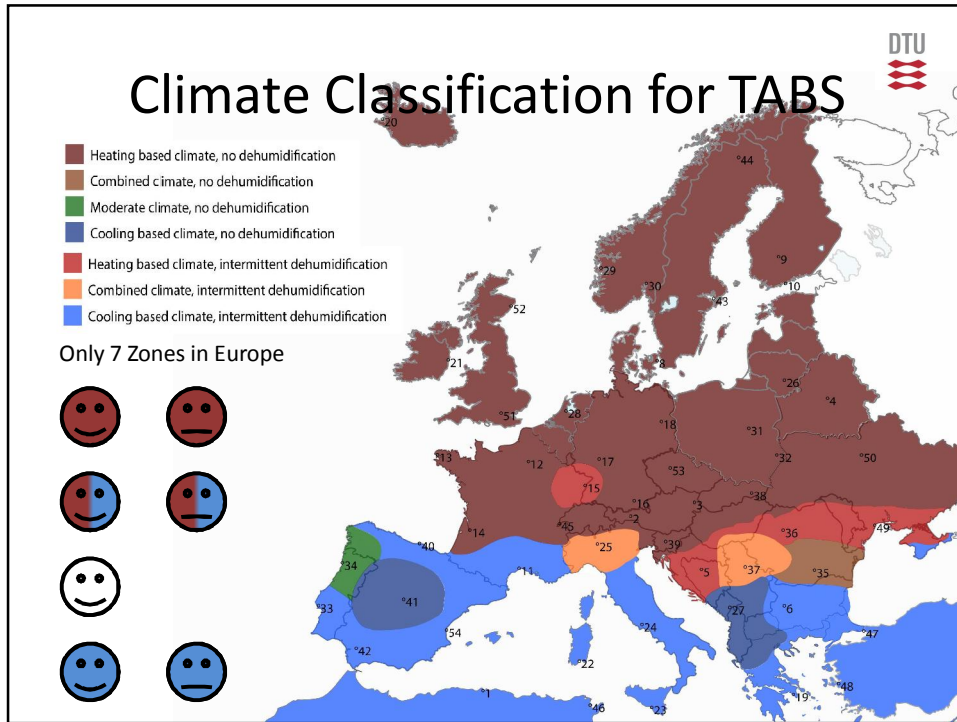
**DTU**  


## Climate Classification for TABS


### Combining Degree Days and Humidity

The 12 possible climate classifications		Humidity Restraints		
		No Dehumidification 	Intermittent Dehumidification 	Continuous Dehumidification 
<b>Degree Days</b>	Heating Based 			
	Combined 			
	Moderate 			
	Cooling Based 			





## Thanks you for your Attention!



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# Climate Classification for TABS

## Humidity restraints



Abu Dhabi, United Arab Emirates

