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# Wood protection

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## CULS lessons

- Destruction of wood by biotic pests and abiotic agents
- Physical and structural protection of wood
- Wood protection by chemical means
- Ways of applying chemical protection
- Wood drying
- Surveys and sterilization of wooden structures, rehabilitation
- Hydrothermal treatment of wood



## Destruction of wood by biotic pests and abiotic agents

- Durability of wood
- Wood degrading agents
  - Biotic agent
  - Abiotic agent



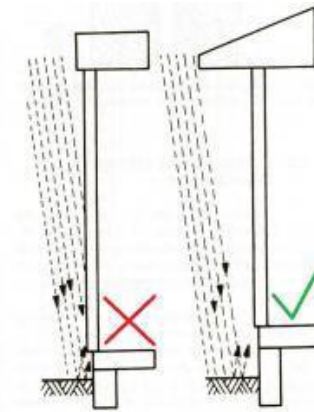
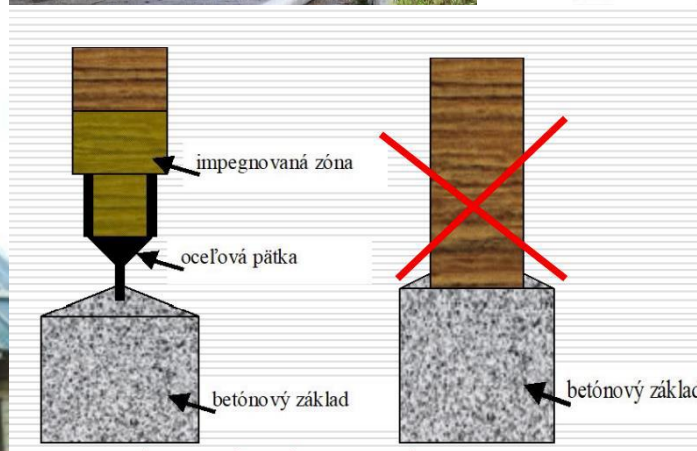
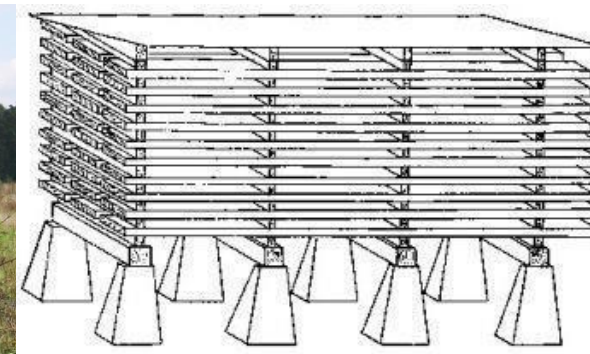


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## Physical and structural protection of wood

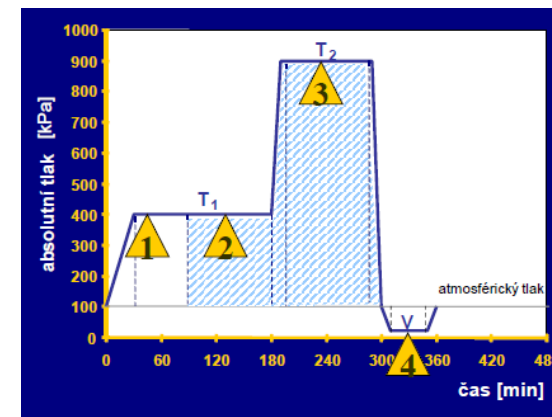
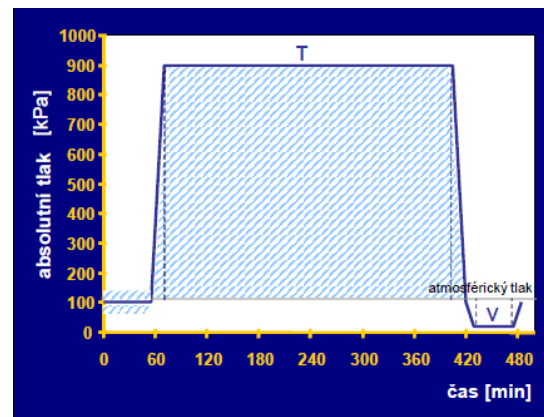
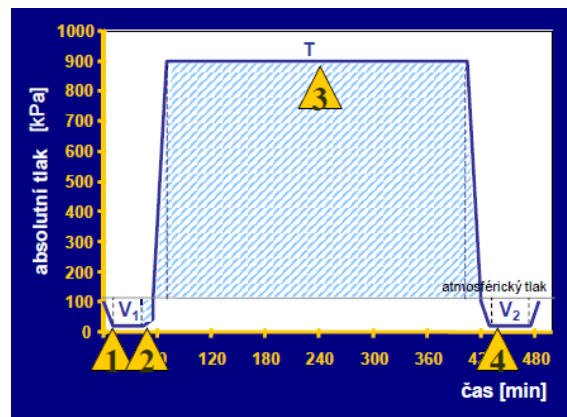
- Wet and dry protection
- Structural protection





# Wood protection by chemical means and ways of applying chemical protection

- Fungicides, insecticides, biocides, flame retardants and weather corrosion inhibitors
- Non-pressure and pressure methods



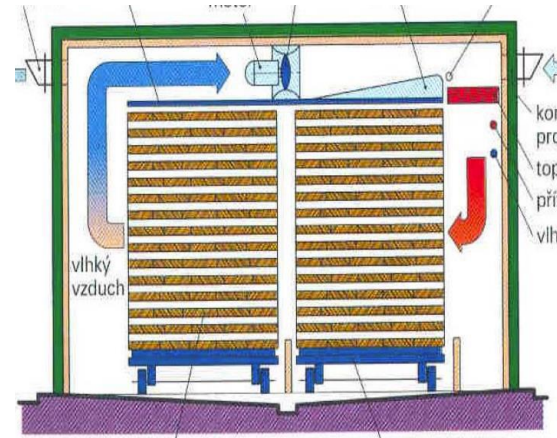


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## Wood drying

- Natural and artificial drying



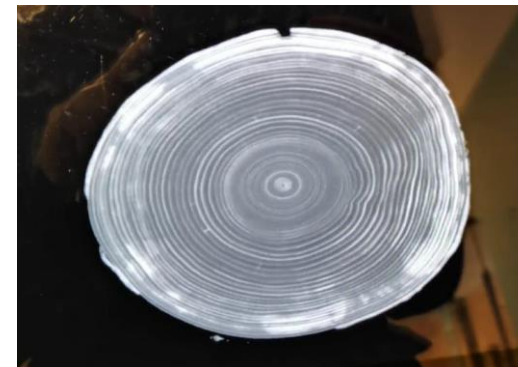
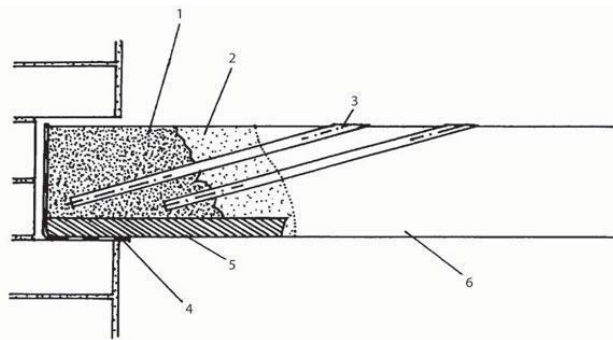
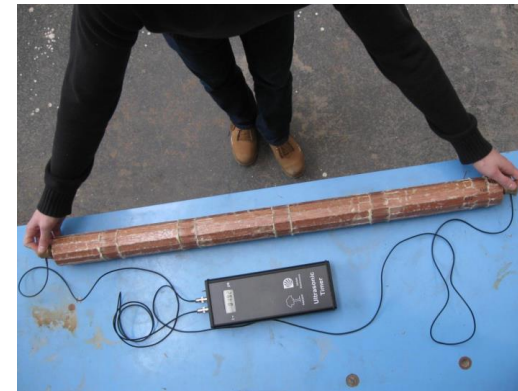


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# Diagnostics and sterilization of wooden structures, remediation

- Various diagnostic methods
- Types of sterilization
- Remediation options





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# Modifications and hydrothermal treatment of wood

- Chemical, physical and biological
- Hydrothermal treatment





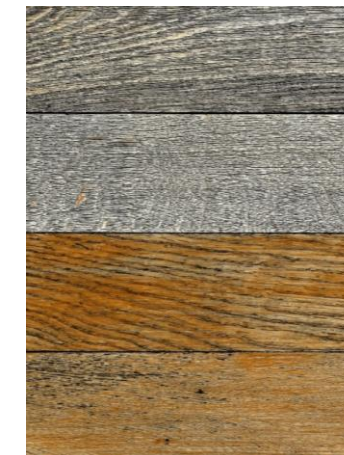
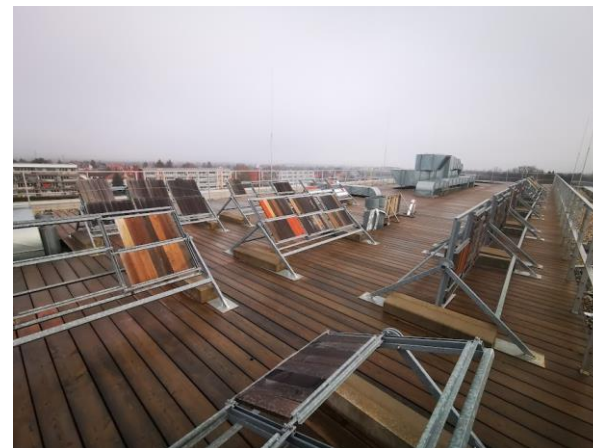
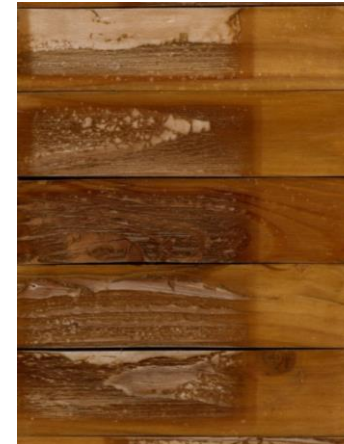


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## Background for teaching and research

- Artificial weathering in UV chambre and Xenotest
- Natural weathering
- Climat chamber



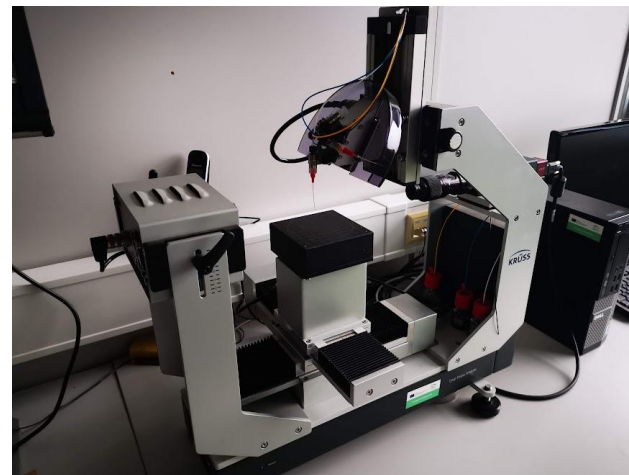


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## Background for teaching and research

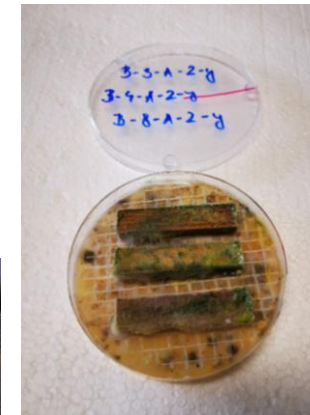
- Colour and gloss measurement
- Contact angle and free surface energy
- Microscopy





## Researches

- Ing. Kristýna Šimůnková, Ph.D. – Final thesis
- Durability of modified wood to selected species of wood-destroying fungi and insects
  - Finding suitable wood modifications on a natural basis in terms of long-term stability and resistance to weathering and attack by wood-destroying insects, fungi and molds
  - Caffeine, lavender essential oil





## Researches

- Ing. Ondřej Dvořák – Final thesis
- Effect of surface treatment of wood on the overall life of transparent exterior coating systems
  - The effect of the underlying wood species and its modification on the overall life of the coating system
  - The effect of modification of the coating system with UV stabilizers and the effect of the polymer base on the overall resistance of the coating
  - Influence of the upper hydrophobic layer

Testing time	Spruce - REF	Spruce + Coating
0 months		
6 months		
12 months		
	Oak - REF	Oak + Coating
0 months		
6 months		
12 months		



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