

EXAMINATION QUESTIONS

For the students of MATERIALS OF ENVIRONMENTALLY COMPATIBLE CONSTRUCTION
subject

1. Define environmental pollution! List all the types of environmental pollution!
2. List at least 5 environmentally conscious building technologies or elements!
3. Define ecological footprint! Which parameters are calculated in the ecological footprint?
4. Define LCA and give all the investigated parameters of it! What is the cradle to gate/grave approach?
5. Give at least two examples of rural/traditional building materials and compare them with modern materials used for the same purpose from the ecological point of view!
6. List the main material selection criteria for construction materials, including the environmental aspects!
7. Define the Sick Home/House Syndrome and describe its main focuses and reasons!
8. What is durability? How can it influence the LCA result of a material/technology? Give at least 4 examples of improper building of a material which can reduce its durability!
9. Define the lifespan of a building material! Describe material performance according to age! Explain the significance of maintenance from an ecological aspect!
10. List the main external atmospheric effects on building materials!
11. List the main aspects of choosing ecologically conscious building materials!
12. List the main air pollutants and briefly describe their effects on the environment!
13. List the main air pollutants and briefly describe their effects on the built environment!
14. List the main water pollutants and briefly describe their effects on the environment!
15. List the main water pollutants and briefly describe their effects on the built environment!
16. List the main soil pollutants and briefly describe their effects on the environment!
17. List the main soil pollutants and briefly describe their effects on the built environment!
18. List the contributor pollutants for acidic rain and give the chemical reactions for providing acidic rains!
19. Define the re-a-gypsum! How is it produced? Give the chemical reactions!
20. List the contributor pollutants for the Green House Effect! Please give at least 3 technologies how can we reduce the amount of these chemical agents!
21. Define the following terms and dimensions of radioactivity: Radioactive concentration, Absorbed dose, Disambiguation Half-life! Give their significance in defending against radioactive radiation! How to prevent humans with construction elements?
22. Sources of radioactive radiation. Ranking of building materials by radioactive radiation.
23. Define asbestos! Why is it harmful to the health? Which kind of asbestos products were used in the building industry? How can we handle them and deposit them?
24. Asbestos water pipe degradation and test methods. How to evaluate their properties?
25. Give two examples of innovative ecologically conscious building materials and analyse them from the ecological point of view! Compare them with some commonly used building materials!
26. How can building materials be grouped according to environmental criteria? Give one typical and one rarely used example for each of the 6 categories!

27. What are the 3 main requirements that a building material or construction must meet to be considered sustainable?
28. List construction products that typically contain over 50% recycled content! Describe one in detail!
29. What methods can be used to measure the environmental performance of buildings? What do they have in common?
30. Describe the modern (21st century) use of adobe!
31. Group natural thermal insulation materials! Present one in detail and evaluate it in different situations!
32. Get the category of the building wastes in 5R system! Write at least one example of each! Which do you think is the most effective?
33. What are the 2 main principles for reducing the environmental impact of concrete? What are the implementation options? Why is concrete mitigation important?
34. Why and how can the cement content of concrete be reduced? What are the advantages and disadvantages?
35. List the typical waste-based concrete aggregates! Describe one in detail!
36. In what form and for what purpose can waste aerated concrete/cellular concrete be used? Why should it be collected separately from other silicate-based construction waste?
37. Can straw thermal insulation boards be classified as porous or fibrous thermal insulation from the point of view of heat transport? The answer should be explained in more detail!
38. Please provide examples of methods by which the compressive strength of straw-based insulation boards can be increased! Which mechanisms do these methods act through?
39. Give examples of which methods can be used to increase the compressive strength of straw-based thermal insulation boards! Through which action mechanism do they exert their effect?