

**Fire Investigation Independent Study Continuing Education**  
**NFPA 921 (2004 Edition) UNIT #5 – Study Guide**  
**NFPA 921 Guide for Fire and Explosion Investigations 2004 Edition**

**Objective:** Given an examination the participant shall demonstrate a knowledge and understanding of building systems.

**Reading/study assignment:** NFPA 921 Guide for Fire and Explosion Investigations, 2004 Edition, pp. 921-49 through 921-56 (Chapter 7)

**Study/reference questions:**

**Chapter 7- Building Systems**

Are attics considered concealed spaces?

What NFPA manual is reference for more detailed information on building systems?

**“Important” - Study and review construction assembly sections 7.4 through 7.4.5.**

In what ways can building design affect fire spread and development?

What are some of the building design considerations that may influence the way a fire develops and spreads?

Fire spread and development is primarily the effect of what type of heating?

What are thermal plastics? What are thermoset plastics? How do they differ in reference to fire?

What is toxicity and why should the fire investigator be concerned about it?

Why is the compartmentation concept of building design of interest to the fire investigator?

What are building loads and how may affect a building subjected to fire?

How may attitude, position, or placement affect the burning of a material? Give an example.

What are live loads?

Why must the fire investigator be aware of the occupancy and use of a fire damaged structure?

How does room size affect the growth and development of a fire?

What are common modes of fire spread in compartmentalized buildings?

What product(s), when properly constructed and maintained, will help contain severe fires in light-hazard occupancies?

What is thermal inertia?

What and why should the fire investigator be concerned about with the building materials?

What are concealed and interstitial spaces and why should the fire investigator be concerned with them?

Why and what should the fire investigator know concerning building systems?

What does “as built” mean when compared to planned design and why and should the fire investigator be concerned and how should the fire investigator verify information?

Why should the fire investigator be concerned about with the ignitability of materials?

Why should the fire investigator be concerned about with the flammability of materials?

What plays an important role in the way a fire develops upon a material?

Does fire usually spread by heat transfer through floor/ceiling assemblies? If so, when?

What is thermal conductivity and how does conduction impact a fuel?

What is the dominant toxic product in most fires and where is this particularly true?

**“Important” - Study and review types of construction sections 7.3 through 7.3.5.3.2.**

How may the physical state and heat resistance of a material affect the fire?

Can small changes in specifications of a building have an effect on fire spread and development, how, why and give an example?

Why is occupancy of concern to the fire investigator?

What are dead loads?

What are some extreme architectural designs that may be of interest to the fire investigator?

How may a computer fire model survey be of value to the fire investigator?

What are some of the variations of explosion damage that may be of interest to the fire investigator and what some reasons for these variations?

What materials are more likely to cause fall-down damage or ignitable liquid fire spread?

What is the Steiner Tunnel Test? Is it always valid? Why or why not?

**Note – The two bold “Important” items in the study guide may contain several examination questions.**