

Materials Perspective on Fire-Containment

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As technology evolves, so do the fire-threats related to goods being moved. From a materials perspective, this evolving severity of fire-loads is only a minor design constraint – materials have inherent energy dissipation responses in reaction to the multitude of defeat-mechanisms present within a fire event - understanding how different materials in the aircraft environment react to the various forms of energy present and how they fail under different scenarios within a fire should dictate system design. With increasing fire-risks, aircraft safety systems must be designed not just for fire performance, but for longevity, redundancy, maintainability, and sustainability to ensure they perform in the future and provide the longest relevant service-life. These principles are demonstrated using testing examples from the air-cargo (Fire-Resistant Container ULD's), aircraft (cargo liners, APU), and EV-battery enclosure systems perspective.