

HOW PRECAST BUILDS: RESILIENT STRUCTURES

High performance precast concrete structures are inherently resilient and provide excellent protection against high winds from tornados and hurricanes, storm water surge and floods, fires, earthquakes, and blasts. Precast concrete is often used in FEMA storm shelters, residential single and multifamily housing, institutional, public, government, commercial, industrial, and other structures providing protection, durability, and resiliency. Impact testing of precast concrete insulated sandwich wall panels show they provide excellent resistance against flying debris, which can often become projectiles or missiles during a tornado or hurricane. Precast concrete is ideal for residential and commercial structures providing excellent multi-hazard protection, structural durability, life safety and health.

Today's U.S. building codes are based solely on establishing minimum requirements that intend to save lives, but no provisions to keep buildings usable after multi-hazard disasters. Consequently, organizations like the U.S. Resiliency Council (USRC) and the National Institute of Building Sciences (NIBS) have been formed to educate the design and construction communities on the importance of building resilient

structures. Resiliency can be defined as the ability of a structure to survive a multi-hazard event without severe long-term damage, recover with minimal repairs and be safely put back into service as soon as possible. The USRC has estimated that the additional cost to build resilient, high-performance structures is typically only 1% to 3% more than structures that just meet minimum building code standards. Similarly, NIBS

has published a 2019 Report, "Natural Hazard Mitigation Saves," that describes the life-cycle cost benefits and return on investment for resilient design. Precast concrete is particularly well suited to provide the inherent multi-hazard resiliency to earthquakes, high winds, floods, fires, and blasts that it delivers to high performance structures. Precast concrete is a high-performance building material that integrates easily with other systems and inherently provides the versatility, efficiency, and resiliency needed to meet the multi-hazard requirements and long-term demands of high-performance structures that can be repaired and safely returned to service quickly after any natural disaster.

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Today, even our U.S. political leaders are publicly endorsing the need to build more high-performance resilient structures in the

