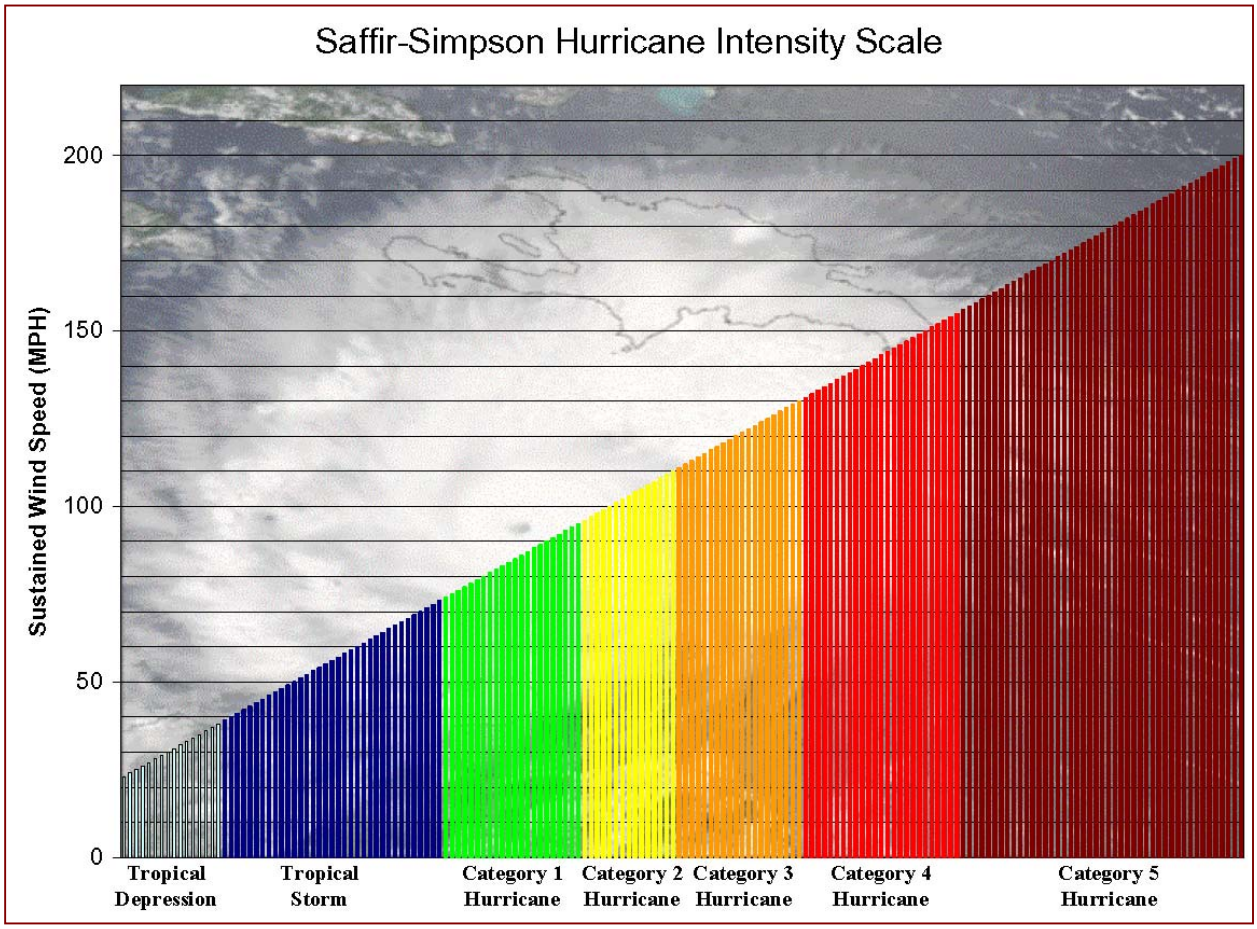
Saffir-Simpson
Hurricane Intensity Scale

Reinsurance Services

The Saffir-Simpson Hurricane Intensity Scale is a categorical rating scale ranging from 1 to 5 based on a hurricane's present sustained wind speed. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly dependent on the slope of the continental shelf in the landfall region. The Saffir-Simpson scale uses a 1-minute average wind speed for category determination.



Category 1 Hurricane
Winds of 74 to 95 mph (64 to 82 knots or 119 to 153 km/hr). Storm surge generally 4 to 5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage. Hurricanes Allison of 1995 and Danny of 1997 were Category One hurricanes at their peak intensity.

Category 2 Hurricane
Winds of 96 to 110 mph (83 to 95 knots or 154 to 177 km/hr). Storm surge generally 6 to 8 feet above normal. Some roofing material, door, and window damage to buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2 to 4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings. Hurricane Bonnie of 1998 was a Category Two hurricane when it hit the North Carolina coast, while Hurricane Georges of 1998 was a Category Two Hurricane when it hit the Florida Keys and the Mississippi Gulf Coast.

Category 3 Hurricane
Winds of 111 to 130 mph (96 to 113 knots or 178 to 209 km/hr). Storm surge generally 9 to 12 feet above normal. Some structural damage to small residences and utility buildings with a minor amount of curtain-wall failures. Damage to shrubbery and trees with foliage blown off trees and large tress blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3 to 5 hours before arrival of the hurricane center. Flooding near the coast destroys smaller structures with larger structures damaged by battering of floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required. Hurricanes Roxanne of 1995 and Fran of 1996 were Category Three hurricanes at landfall on the Yucatan Peninsula of Mexico and in North Carolina, respectively.

Category 4 Hurricane
Winds of 131 to 155 mph (114-135 knots or 210 to 249 km/hr). Storm surge generally 13 to 18 feet above normal. More extensive curtain-wall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3 to 5 hours before arrival of the hurricane center. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km). Hurricane Luis of 1995 was a Category Four hurricane while moving over the Leeward Islands. Hurricanes Felix and Opal of 1995 also reached Category Four status at peak intensity.

Category 5 Hurricane
Winds greater than 155 mph (135 knots or 249 km/hr). Storm surge generally greater than 18 feet above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3 to 5 hours before arrival of the hurricane center. Major damage to lower floors of all structures located less than 15 feet above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5 to 10 miles (8 to 16 km) of the shoreline may be required. Hurricane Mitch of 1998 was a Category Five hurricane at peak intensity over the western Caribbean. Hurricane Andrew was a Category 5 hurricane when it made landfall near Miami, Florida in 1992. Hurricane Gilbert of 1988 was a Category Five hurricane at peak intensity and is the strongest Atlantic tropical cyclone of record.

If additional information or assistance is requested, please contact Impact Forecasting by phone at (312) 381-5919, by email at ifsupport@aon.com, or by the worldwide web at www.impactforecasting.com.