

Dr. T. Theodore Fujita first introduced The Fujita Scale in the SMRP Research Paper, Number 91, published in February 1971 and titled, "*Proposed Characterization of Tornadoes and Hurricanes by Area and Intensity*". Fujita revealed in the abstract his dreams and intentions of the F-Scale. He wanted something that categorized each tornado by *intensity and area*.

. The scale was divided into six categories:

- F0 (Gale)
- F1 (Weak)
- F2 (Strong)
- F3 (Severe)
- F4 (Devastating)
- F5 (Incredible)

Dr. Fujita's goals in his research in developing the F-Scale was

- categorize each tornado by its intensity and its area
- estimate a wind speed associated with the damage caused by the tornado

Dr. Fujita and his staff showed the value of the scale's application by surveying every tornado from the Super Outbreak of April 3-4, 1974. The F-Scale then became the mainstay to define every tornado that has occurred in the United States. The F-Scale also became the heart of the tornado database that contains a record of every tornado in the United States since 1950.



# An Enhanced Fujita-Scale Methodology

## 1. Identify the Damage Indicator (DI)



28	Trees: Softwood (TS)	
27	Trees: Hardwood (TH)	
26	Free-Standing Light Poles, Luminary Poles, Flag Poles (FSP)	
25	Free-Standing Towers (FST)	Towers
24	Transmission Line Towers (TLT)	
23	Warehouse Building [Tilt-up Walls or Heavy-Timber Construction] (WHB)	Metal Buildings
22	Service Station Canopy (SSC)	
21	Metal Building System (MBS)	
20	Institutional Building [Hospital, Government or University Building] (IB)	Professional Buildings
19	High-Rise Building [More than 20 Stories] (HRB)	
18	Mid-Rise Building [5-20 Stories] (MRB)	
17	Low-Rise Building [1-4 Stories] (LRB)	
16	Junior or Senior High School (JHSH)	Schools
15	Elementary School [Single Story; Interior or Exterior Hallways] (ES)	
14	Automobile Service Building (ASB)	Commercial Buildings
13	Automobile Showroom (ASR)	
12	Large, Isolated Retail Building [K-Mart, Wal-Mart] (LIRB)	
11	Large Shopping Mall (LSM)	
10	Strip Mall (SM)	
9	Small Professional Building [Doctor's Office, Branch Banks] (SPB)	
8	Small Retail Building [Fast Food Restaurants] (SRB)	
7	Masonry Apartment or Motel Building (MAM)	
6	Motel (M)	
5	Apartments, Condos, Townhouses [3 stories or less] (ACT)	Residential Buildings
4	Manufactured Home - Double Wide (MHDW)	
3	Manufactured Home - Single Wide (MHSW)	
2	One- or Two-Family Residences (FR12)	
1	Small Barns or Farm Outbuildings (SBO)	

## 2. Identify the Degree of Damage (DOD)



(Example is from FR12)

1	2	3	4	5	6	7	8	9
Threshold of Damage	Roof Loss <20%	Broken Glass in Windows	Uplift of Roof Deck	Entire House Shifts	Roof Removed	Exterior Walls Collapsed	Some Inside Walls Remain	All Inside Walls Remain

## 3. Fine Tune Wind Based Upon Construction Quality



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### 4. Round Off the Resulting Wind to the Appropriate EF-Scale Number

Wind Speed Range	EF-Scale Category
65 - 85	EF0
86 - 110	EF1
110 - 135	EF2
136 - 165	EF3
166 - 200	EF4
> 200	EF5

### 5. A Final Check for the Case of Running out of Damage Indicators



