

## HAZUS Building Attribute Rulesets - Wind - MH76HUD

**Note: Defaults should be assigned to all MH76HUD Buildings as defined below; then rulesets should be applied to override those defaults as informed by available data.**

shutters			
Valid Entries	yes, no	Input Variable	YearBuiltNJDEP, WBD
Default	no	Input Variable Source	Custom Inventory
Years Ruleset Applies	Ruleset	Notes	Possible Extensions
YearBuiltNJDEP > 1994	Use MH94HUDI-II-III rules	Use this ruleset only for 1976 < YearBuiltNJDEP <=1994	
1976 <YearBuiltNJDEP ≤ 1994	IF WBD = yes, Assign as Random Variable (RV): shutters = yes (RV = 45%) shutters = no (RV = 55%)	Based on Human Subjects Data, roughly 45% of houses built in the 1980s and 1990s had entries that implied they had shutters on at some or all of their windows, which is assumed as the ruleset for homes built under the IRC codes. The HUD Code was amended in 1994 with requirements that manufactured homes meet building and installation standards to provide wind safety safeguards in pre-designated storm regions of the country. Manufactured homes produced since 1994 have been proven to be equal and, in many respects, safer than site-built homes during tornadoes and hurricanes. ( <a href="http://www.homespotonline.com/blog/what-you-need-know-about-manufactured-homes/">http://www.homespotonline.com/blog/what-you-need-know-about-manufactured-homes/</a> ) Therefore, 45% of manufactured homes under the 1976 HUD codes should be randomly assigned to have shutters, and 55% should not.  Data ranges checked: 1992 to 1995, 33/74 entries (44.59%) with shutters 1986 to 1992, 36/79 entries (45.57%) with shutters 1983 to 1986, 19/44 entries (43.18%) with shutters Valid Entries: 1 - Homemade storm panels (plywood) 4 - Shutters 5 - Store-bought storm panels 6 - Store-bought fabrics/screens 7 - Some other covering	
YearBuiltNJDEP <= 1976	Use MHPHUD Rules	Use this ruleset only for 1976 < YearBuiltNJDEP <=1994	
TieDowns			
Valid Entries	yes, no	Input Variable	YearBuiltNJDEP
Default	no	Input Variable Source	Custom Inventory
Years Ruleset Applies	Ruleset	Notes	Possible Extensions
YearBuiltNJDEP > 1994	Use MH94HUDI-II-III rules	Use this ruleset only for 1976 < YearBuiltNJDEP <=1994	
1976 <YearBuiltNJDEP ≤ 1994	Assign as Random Variable (RV): TieDown = yes (RV = 45%) TieDown = no (RV = 55%)	The HUD Code was amended in 1994 with requirements that manufactured homes meet building and installation standards to provide wind safety safeguards in pre-designated storm regions of the country, therefore tie downs were not required by code before 1994. However, it is recommended that all manufactured homes install tie downs. Therefore, this ruleset assumes roughly the same percentage voluntary compliance as shutters before 1994, meaning, 45% of manufactured homes under the 1976 HUD codes should be randomly assigned to have tie-downs, and 55% should not. ( <a href="http://www.homespotonline.com/blog/what-you-need-know-about-manufactured-homes/">http://www.homespotonline.com/blog/what-you-need-know-about-manufactured-homes/</a> )	
YearBuiltNJDEP <= 1976	Use MHPHUD Rules	Use this ruleset only for 1976 < YearBuiltNJDEP <=1994	