

Construction Practices Recommended by FORTIFIED™

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Hazard Resilient Building Workshop

AGENDA

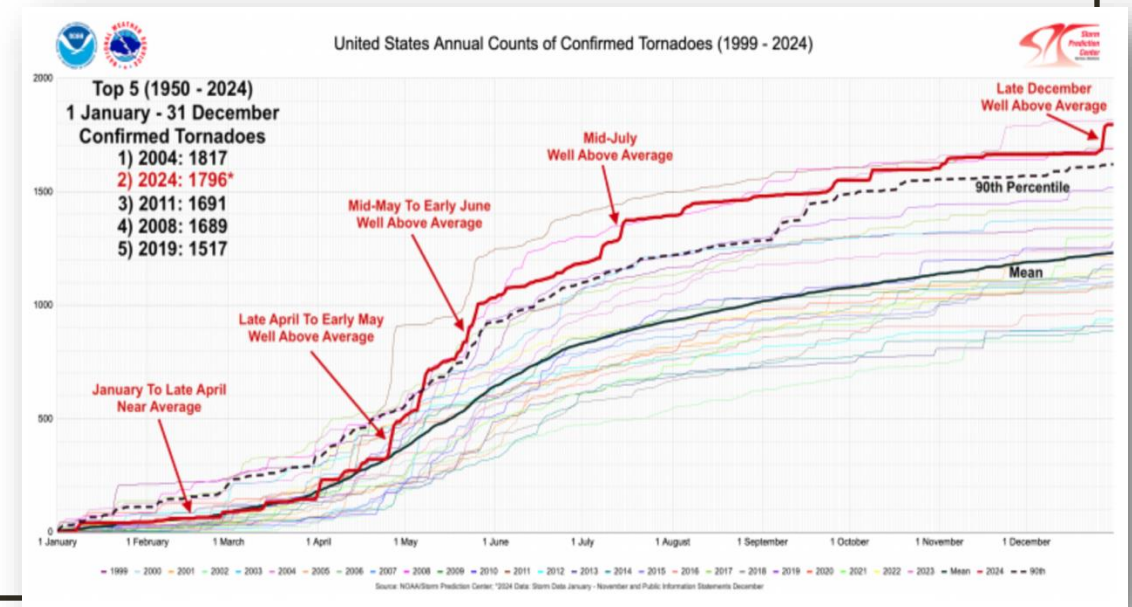
- ❑ FORTIFIED Program Overview
- ❑ FORTIFIED Standards
- ❑ Upfront Cost vs ROI

Disaster Impact

Tornado damage statistics (2024–2025)

- **2024**
 - 1700+ tornadoes, second-highest since 1950
 - Oklahoma had the most – 152
 - 50+ deaths
 - \$182 billion total losses
- **2025**
 - 60+ deaths from tornadoes by mid-year

Insurance industry losses and premium increases



Intangible Impact

- **Affects Quality of Life**
 - Psychological stress and trauma response
 - Recovery complexity following storm damage
 - Asset depreciation and market volatility

- **Threats to Communities**
 - Emergency response capacity strain
 - Extended infrastructure restoration period
 - Instability in the insurance market

FORTIFIED™ Program

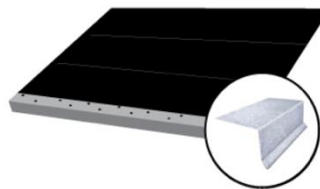
“FORTIFIED is a voluntary construction and re-roofing Program designed to strengthen **homes and commercial buildings** against specific types of severe weather such as high winds, hail, hurricanes and even tornadoes.”

- Institute for Business & Home Safety (IBHS) foundation
 - FORTIFIED Roof
 - FORTIFIED Silver
 - FORTIFIED Gold

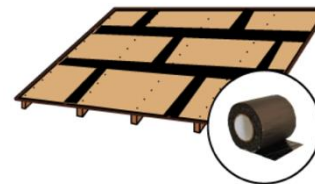
FORTIFIED™ Standards

■ FORTIFIED Roof

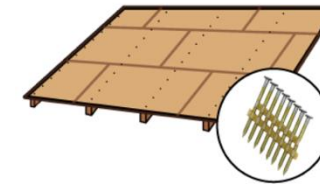
- Stronger edges (wider drip edge, fully adhered starter strip)
- Sealed roof deck
- Better attachment (ring-shank nails in enhanced pattern)
- Impact-resistant shingles (Class 4 rating)



Reinforced Edges



Sealed Deck



More Fasteners

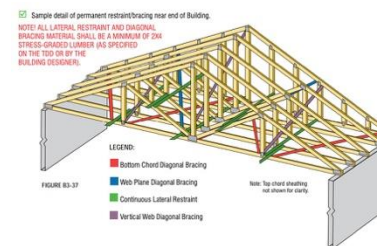


Impact Resistant
Shingles

FORTIFIED™ Standards

■ FORTIFIED Silver

- All FORTIFIED Roof requirements
- Structural bracing for gable ends, chimneys, attached structures
- Stronger garage door requirements



Additional Bracing

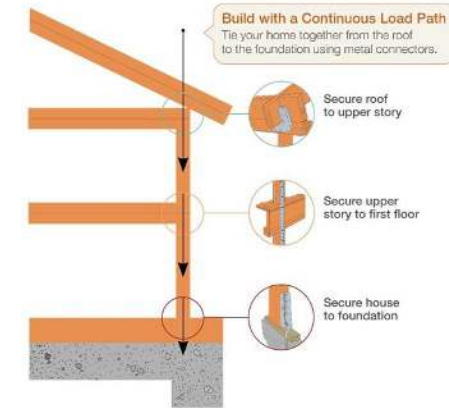


Pressure Rated
Garage Door



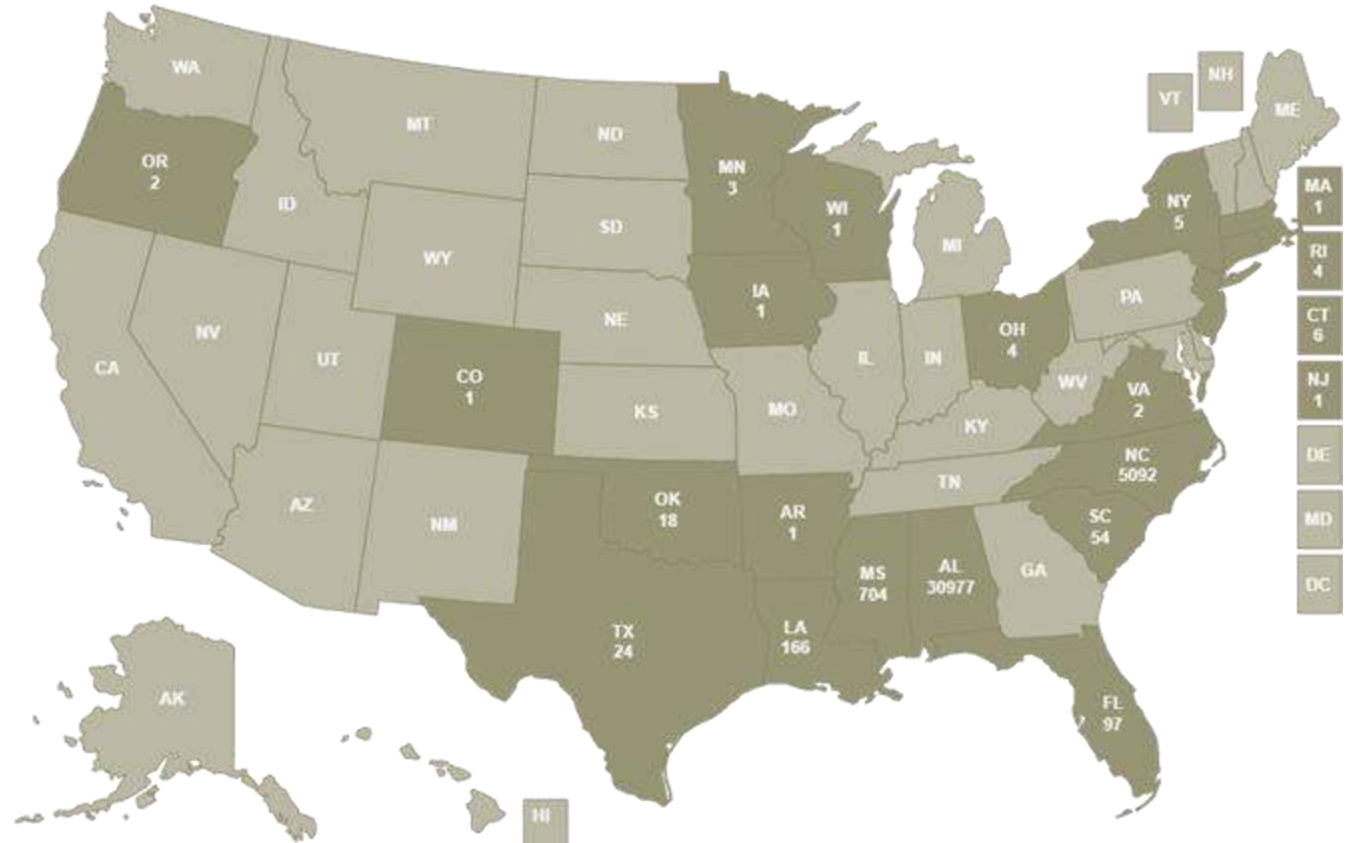
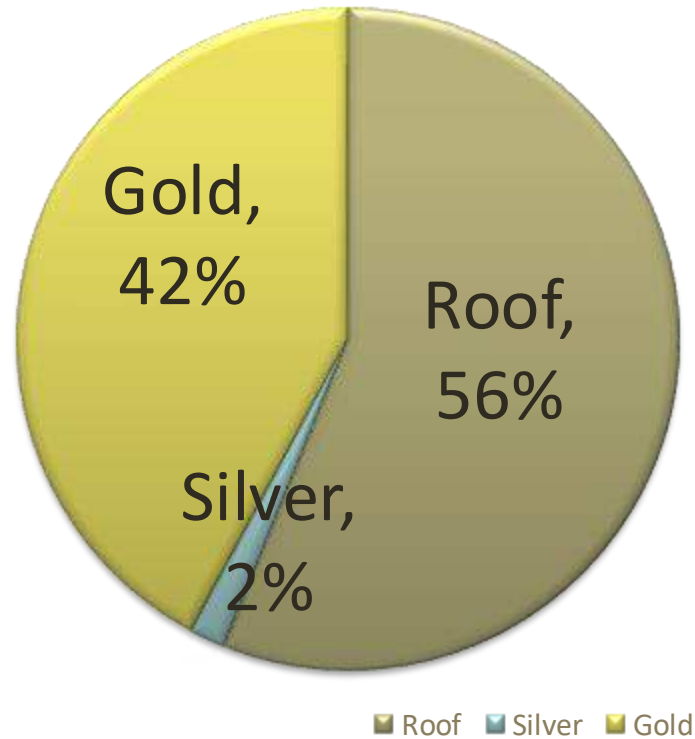
FORTIFIED™ Standards

- FORTIFIED Gold
 - All previous levels included
 - Engineered continuous load path
 - Complete structural system integration



Engineered Load Path

FORTIFIED™: Current Market Penetration



Upfront Cost

- Construction Cost Breakdown
 - FORTIFIED Roof: 1.1-1.3% of home value
 - FORTIFIED Silver: 1.6-1.9% of home value
 - FORTIFIED Gold: 2.25-2.8% of home value

House	Base Sale Price	Fortified Roof cost	%	Fortified Silver cost	%	Fortified Gold cost	%
1 – 1806 SF	\$274,395	\$2,821.92	1.03	\$4,481.92	1.63	\$6,681.92	2.4
2 – 2,026 SF	\$357,125	\$3,756.92	1.05	\$5,416.92	1.52	\$7,627.28	2.14
3 – 2,343 SF	\$432,430	\$4,133.20	1.00	\$5,793.20	1.34	\$8,003.56	1.85
Average			1.1		1.6		2.25

Additional Upfront Cost Consideration

- Cost Variables by Home Size
 - Economies of scale for larger homes
 - Regional material and labor cost variations
 - Seasonal pricing considerations
- Additional Costs
 - Initial inspection fees (\$\$)
 - Required inspections every 5 years
 - Certification and documentation costs

Savings & Benefits Analysis

- Insurance Premium Discounts
 - Discount ranges (3%-42% based on 2022 study)
 - Reality check: actual vs. advertised discounts
- ROI Analysis
 - FORTIFIED Roof: Break-even 6-9 years
 - FORTIFIED Silver: Break-even 7-11 years
 - FORTIFIED Gold: Break-even 7-12 years

Barriers to Adoption

■ Awareness Gap

- Updated insurance agent survey results
- Consumer education needs
- Marketing and outreach challenges

■ Market Realities

- Oklahoma roof replacement cycle
- Competing priorities of homeowners
- Limited certified inspectors
- Contractor training needs

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