

## Insurance Inspection Knowledge Base

### Comprehensive Guidelines for Claims Inspection Operations

#### Inspection Safety Protocols

##### Pre-Inspection Safety Assessment

- Structural Integrity Check: Before entering any property, visually assess for:

- Sagging rooflines or compromised load-bearing elements
- Cracked foundations or visible settlement
- Damaged stairs, railings, or entry points
- Electrical hazards (exposed wiring, water near electrical panels)

- Environmental Hazards:

- Asbestos (properties built before 1980)
- Lead paint (properties built before 1978)
- Mold presence (musty odors, visible growth, recent water damage)
- Gas leaks (distinctive odor, hissing sounds)

- Access Requirements:

- Ladder safety for roof inspections (3:1 ratio, secure footing)
- Personal protective equipment (hard hat, safety glasses, non-slip footwear)
- Two-person rule for confined spaces or hazardous areas

#### Damage Assessment Methodologies

##### Storm Damage Evaluation

- Hail Damage Indicators:

- Impact marks on soft metals (gutters, vents, AC units)
- Granule loss patterns on asphalt shingles
- Exposed mat or cracked shingles
- Damaged siding, windows, or outdoor fixtures

- Wind Damage Assessment:

- Uplift damage (shingle tabs lifted or missing)
- Directional damage patterns consistent with wind direction
- Debris impact marks and penetrations
- Compromised flashing or trim elements

- Water Intrusion Evaluation:

- Primary vs. secondary water damage
- Moisture meter readings in affected areas
- Timeline assessment (acute vs. chronic exposure)
- Potential for mold development (48-72 hour window)

##### Fire Damage Classification

- Direct Fire Damage: Charring, melting, structural combustion

- Smoke Damage Types:

- Wet smoke (low temperature, smoldering fires)
- Dry smoke (high temperature, fast-burning fires)
- Protein smoke (kitchen fires, invisible but odorous)

- Heat Damage: Warping, discoloration, thermal shock to materials

- Suppression Damage: Water damage from firefighting efforts

#### Material-Specific Assessment Guidelines

##### Roofing Systems

- Asphalt Shingles:

- Service life indicators: granule loss, curling, cracking
- Impact damage: exposed mat, broken tabs, punctures
- Age-related deterioration patterns

- Metal Roofing:

- Corrosion assessment (red rust vs. white rust)
- Fastener integrity and panel alignment
- Thermal expansion joint functionality

- Tile Roofing:
  - Individual tile fractures or displacement
  - Underlayment exposure and integrity
  - Mortar joint deterioration
- Flat/Low-Slope Roofing:
  - Membrane condition (punctures, tears, blistering)
  - Drainage adequacy and ponding issues
  - Flashing and penetration sealing

#### Exterior Building Components

- Siding Systems:
  - Impact resistance and damage patterns
  - Joint sealant integrity and weather barrier function
  - Color-matching considerations for partial replacements
- Windows and Doors:
  - Glazing integrity (stress cracks, impact damage)
  - Frame and hardware functionality
  - Weatherstripping and insulation performance
- Foundation Systems:
  - Settlement indicators (cracks, displacement)
  - Water intrusion and drainage issues
  - Structural support and load transfer capability

#### Environmental Condition Assessment\Indoor Air Quality Factors

- Moisture Content Standards:
  - Wood: 6-12% normal, >20% concerning
  - Drywall: <1% normal, >1% requires attention
  - Concrete: <4% normal, >4% indicates moisture issues
- Temperature and Humidity:
  - Optimal indoor humidity: 30-50% RH
  - Condensation risk factors and mitigation
  - HVAC system impact on moisture control
- Mold Risk Assessment:
  - Visual indicators and growth patterns
  - Sampling protocols (air vs. surface samples)
  - Remediation thresholds and protocols

#### Contamination Identification

- Asbestos Locations (Pre-1980 Construction):
  - Pipe insulation and boiler wrapping
  - Floor tiles and mastic adhesives
  - Ceiling textures and joint compounds
  - Siding and roofing materials
- Lead Paint Considerations (Pre-1978 Construction):
  - XRF testing protocols
  - Renovation and repair regulations
  - Worker safety and containment requirements
- Cost Estimation GuidelinesReplacement vs. Repair Thresholds
  - Roofing: Replace if damage exceeds 25% of surface area
  - Siding: Consider full replacement if color-matching impossible
  - Windows: Energy efficiency upgrades during replacement
  - HVAC Systems: Age and efficiency considerations for replacement decisions
- Regional Cost Factors
  - Labor Rate Variations: Urban vs. rural pricing differentials

- Material Availability: Supply chain disruptions and lead times
- Permit Requirements: Local building code compliance costs
- Seasonal Pricing: Weather-dependent construction schedules

#### Technology Integration Standards

##### Photography Documentation

- Image Requirements:
  - Minimum 12MP resolution for detail capture
  - Multiple angles for comprehensive documentation
  - Scale references (measuring tape, coins) for size context
  - Before/after comparisons for repairs
- Metadata Standards:
  - GPS coordinates for exterior shots
  - Timestamp verification
  - Image sequence and organization
  - Damage severity classification tags

##### Digital Measurement Tools

- Laser Measurement: Accuracy standards and calibration
- Drone Usage: FAA compliance and insurance requirements
- Thermal Imaging: Temperature differential interpretation
- Moisture Detection: Pin vs. pinless meter applications

#### Regulatory Compliance Framework

##### Building Code Considerations

- Local Amendments: City and county code variations
- Energy Efficiency Standards: Current vs. grandfathered requirements
- Accessibility Compliance: ADA upgrades during reconstruction
- Environmental Regulations: Wetlands, coastal zones, flood plains

##### Insurance Policy Integration

- Coverage Limitations: Understanding policy exclusions
- Depreciation Schedules: Age-based value adjustments
- Code Upgrade Coverage: Bringing repairs to current standards
- Loss Settlement Methods: Replacement cost vs. actual cash value

##### Quality Assurance Protocols

##### Inspection Report Standards

- Executive Summary: Key findings and recommendations
- Detailed Findings: Room-by-room or area-specific assessments
- Photographic Evidence: Organized and referenced documentation
- Cost Estimates: Detailed scope and pricing breakdowns
- Timeline Projections: Repair sequencing and completion schedules

##### Follow-up Inspection Triggers

- Progress Inspections: 25%, 50%, 75% completion milestones
- Change Order Reviews: Scope modifications and cost impacts
- Final Inspections: Completion verification and quality standards
- Warranty Inspections: Post-completion performance verification

#### Emergency Response Protocols

##### Immediate Stabilization Priorities

1. Life Safety: Structural stability and occupant protection
2. Property Protection: Tarping, boarding, water extraction
3. Security Measures: Temporary fencing and access control
4. Utility Safety: Gas, electrical, and water system shutoffs

##### Rapid Assessment Techniques

- Triage Methodology: Critical, urgent, and routine categorization
- Resource Allocation: Inspector expertise matching to damage types

- Communication Protocols: Real-time updates to claims management

- Vendor Coordination: Emergency contractor mobilization procedures

This knowledge base provides detailed inspection expertise and protocols that complement the basic task management capabilities of the MCP server, enabling comprehensive inspection guidance and support for insurance claims operations.