

Roofing Contractors Industry



This study reflects on information derived from insurance claims. These claims form a database that can be analyzed to determine the many and varied causes of loss. CNA Risk Control presents this study of specific CNA claims and industry trends. We begin with a review of exposures inherent to the Roofing Contractors Industry and conclude with suggested practices to manage these risks.

Roofing Contractors Industry Defined

This guide is ultimately being developed to improve profitability for roofing contractors. Roofing contractors can be involved with many types of roofing to include tear off and replacement of an existing roof as well as a newly constructed roof. Roof types may include built-up roofing (with or without ballasting), torch applied roofing, membrane (rubber) roofing or metal roofing. Roofs may be installed on a low pitch roof or a steep pitch roof, and installation may include metal or wood deck replacement. Regardless of your specialty or “*niche*,” you must also be in the business of safety and risk management.

Roofing Contractors: An Analysis of Loss Exposures in the Roofing Contractors Industry

Roofing contractors encounter many loss exposures. These include employee injury, vehicle accidents, liability claims from many areas such as leaks from inadequate tie off procedures, third party claims by another company’s employees, and damage to the existing building or property. The following is a review of those exposures based on an analysis of claims incurred by roofing contractors insured by CNA between January 1, 2004, and December 31, 2007.

Workers’ Compensation Claims

By Type of Incident Causing the Injury, Shown as a Percentage of Total Claims

Incident Type	Percent of Total Claims
Manual Material Handling	24%
Struck By	15%
Slips/Trips/Falls on Same Level	14%

Shown as a Percentage of Total Claim Dollars

Incident Type	Percent of Total Claim Dollars
Falls From Elevation	49%
Manual Material Handling	17%
Slips/Trips/Falls on Same Level	9%

The data indicates that worker injuries are most likely caused by manual material handling, struck by and falls from elevations. Those claims responsible for the highest severity of claims paid are fall from elevations, manual material handling and struck by injuries. Falls from elevation costs are significantly higher than any other type of injury incurred.

Falls from Elevations - Statistics Dictate Fall Protection Need

The construction industry is one of the most dangerous fields to work in. According to the National Institute for Occupational Safety and Health (NIOSH), 15.2 workers per 100,000 are killed every year. That makes construction the third most dangerous industry behind mining and agriculture.

According to the U. S. Department of Labor’s Census of Fatal Occupational Injuries, deaths from falls are the number one cause of construction accident fatalities. An average of 540 people die in falls every year. Falls from buildings account for the majority of deaths. The second cause of death is falls from scaffolds. If there is a drop of six feet from one level to the next and there is no guardrail, then a safety harness or safety net should be in use.

Manual Handling – How It Contributes to Accident Types

Claims related to manual handling include strains, hernia rupture, sprains to the lower back, shoulders, and knees that were mainly associated with moving/pulling/lifting and installing product, using/moving machinery, materials and equipment.

Many of the manual material handling overexertion injuries are the result of employees bending, lifting and reaching throughout the day due to their work, materials and equipment being positioned on the roof or ground. The average employee who bends 100 times a day, working 250 days a year will bend 25,000 times annually, exacerbating the risk factor and increasing the probability of developing low back pain. Prolonged exposure to bending can cause fatigue making it a higher possibility of being struck by equipment or materials. The same factors can also contribute to slips and falls. Fatigue, handling and inefficient movement further enhances the potential for a slip or trip on an already challenging walk surface.

Struck By – A Leading Cause of Construction-Related Deaths

The U. S. Department of Labor's Census of Fatal Occupational Injuries indicates that struck-by objects are another leading cause of construction-related deaths. In 2005, struck by injuries were responsible for 18 percent of all fatalities, and 11 percent of these types of falls were a result of being struck by an object. Source: US Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2005.

Safety and health programs must take into account the many ways struck-by accidents can occur. The following related hazards cause the most struck-by injuries: vehicles, falling or flying objects, or masonry wall collapses. In the roofing industry, vehicles and falling objects are prevalent causes.

Auto Claims

By Type of Incident Causing the Loss, Shown as a Percentage of Total Claims

Incident Type	Percent of Total Claims
Struck By	17%
Rear-ended Other Vehicle	14%
Backed into Claimant	3%

Shown as a Percentage of Total Claim Dollars

Incident Type	Percent of Total Claim Dollars
Rear-ended Other Vehicle	29%
Turned Left in Front of Oncoming Traffic	7%
Other Vehicle Failed to Stop	6%

Analysis of auto claims data revealed that struck by accidents were the highest number of claims by incident type between 2004 and 2007. Rear-ending other vehicle accidents were the leading cause of total claim dollars spent. Driver inattentiveness and the lack of concentration are primary factors in rear-ending accidents, turning in front of oncoming traffic, and backing into claimants' vehicle. Other factors include aggressive driving, poor time management, and lack of route planning.

Struck by

If vehicle safety practices are not observed at the job site, the risk for employees being pinned between construction vehicles and walls, struck by swinging backhoes, crushed beneath overturned vehicles, can increase. If safety practices are not adhered to while working near public roadways, the risk of being struck by trucks or cars can increase.

How to Avoid Hazards

- Wear seat belts that meet OSHA standards, 29 CFR 1926.601(b)(9), except on equipment that is designed only for standup operation, or has no rollover protective structure. Additional information on 29 CFR, Regulations (Standards - 29 CFR), Motor vehicles. - 1926.601, can be found at:
[http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10768#1926.601\(b\)\(9\)](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10768#1926.601(b)(9))
- Check vehicles before each shift to assure that all parts and accessories are in safe operating condition. For additional information, refer to OSHA Construction eTool, Vehicle Inspection, Vehicle Inspection Checklist.
<http://www.osha.gov/SLTC/etools/construction/struckby/vehinspect.html>
- Do not drive a vehicle in reverse gear with an obstructed rear view unless it has an audible reverse alarm, or a worker signals that it is safe.
- Drive vehicles or equipment only on roadways or grades that are safely constructed and maintained.
- Make sure that you and all other personnel are in the clear before using dumping or lifting devices.
- When not in use, lower or block bulldozer and scraper blades, end-loader buckets, and dump bodies, and leave all controls in neutral position.
- Set parking brakes when vehicles and equipment are parked, and chock the wheels if they are on an incline.
- All vehicles must have adequate braking systems and other safety devices [*For additional information, refer to OSHA Construction eTool, Brake Systems.*
<http://www.osha.gov/SLTC/etools/construction/struckby/braking.html>
- Haulage vehicles that are loaded by cranes, power shovels, and loaders must have a cab shield or canopy that protects the driver from falling materials.
- Do not exceed a vehicle's rated load or lift capacity.
- Do not carry personnel unless there is a safe place to ride.
- Use traffic signs, barricades or flaggers when construction takes place near public roadways.
- Workers must be highly visible in all levels of light. Warning clothing, such as red or orange vests are required and, if worn for night work, must be of reflective material.

Rear-ending Other Vehicle

Rear-ending type accidents occur when a driver is following too close for conditions, distracted by activities inside the car/cab, or when a vehicle has mechanical problems. Drivers are distracted by situations outside of the vehicle and inside the vehicle. Companies must help control distractions and make drivers be aware of maintaining adequate distance from the vehicle ahead of them. This raises the concept of human factors in the cab and how many stimuli the brain can handle while driving/operating a vehicle.

Failure to Yield

Many failures to yield accidents occur because the driver is distracted, and didn't see the traffic sign or the light change to red. Other fail to yield accidents occur because the driver may not understand how long it will take to cross the traffic lane. When turning left or pulling out, the driver needs to know how long it will take for his vehicle and trailer, if applicable, to clear the lane being crossed. Drivers should never try to run a yellow light.

A safety program is only effective if drivers are held accountable for violation of safety rules and preventable accidents. Driver behavior needs to be monitor. Most drivers do not have an accident or get a ticket the first time they do something wrong. The purpose of monitoring and accountability is to identify behaviors the driver is exhibiting that are unsafe and provide safety instructions on how to avoid these behaviors prior to an accident occurs.

General Liability Claims

By Type of Incident Causing the Loss, Shown as a Percentage of Total Claims

Incident Type	Percent of Total Claims
Leaking/Seeping	30%
Damage Not Other Classified	29%
Struck by	6%

Shown as a Percentage of Total Claim Dollars

Incident Type	Percent of Total Claims
Leaking/Seeping	28%
Fire/Explosion	18%
Damage Not Other Classified	17%

Leaking/seeping incident types lead both frequency and severity as loss leaders. These types of claims are typically managed through application of basic quality control principles. Poor craftsmanship or failure to tie off an uncompleted section of the new roof to the existing will lead to leak claims. All incomplete roof sections should be tied off at the end of each work shift regardless of weather forecast. If the roof is tied off each time a crew leaves the site at the end of the shift, leaks due to weather can be greatly minimized or eliminated.

Impacting Profitability

Safety and risk management are key elements that can greatly impact the profitability of roofing contractors industry. Poor management of these elements can lead to an increase in incidents and accidents and higher costs/losses for companies. In order to better understand the negative impact, following are some specific effects on profitability:

- **Direct /Indirect Costs of Accidents or Incidents** – The hard or tangible costs resulting from the occurrence are the direct costs such as treatment or repair costs, and they are fairly easy to track. However, the larger cost can result from indirect costs such as lost time of supervisor and crew around the scene, dropped tools, and contract delays that can run between 4 to 10 times that of direct costs.
- **Regulatory Fines** – Regulatory agencies can and will issue citations and fines for any deficiencies in safety and risk management practices that have governing standards.
- Increases in the frequency of incidents or accidents leads to a potential increase in the severity. This increase in frequency and severity can lead to an increase in your **Experience Modification Rate (EMR)**. This rate is a complex derivation from your actual loss data. Every business starts with an EMR of 1.00. Good experience (low claim activity) will result in an EMR less than 1.00. Poor experience (high claim activity) will result in an EMR higher than 1.00. Insurance rates start at an established point and then are basically multiplied by the EMR. You can see that a low EMR lowers the rate and a high EMR raises the rate. This alone can affect how you compete in the bidding process. There are some owners or contract holders that will not allow anyone to bid if they do not have an EMR that is 1.00 or lower.
- **Recovery** of loss costs is another area impacting profitability. Companies should know their profit margin. You can use that factor to find out how much *new business* must be generated to cover the cost of the loss. For example, a company operating with a profit margin of 5 percent would have to generate \$20,000 worth of new business to recover \$1,000 lost in an incident or accident. If that same company's profit margin was 1 percent, they would need to generate \$100,000 of new business to recover the same \$1,000.

Losses and Insurance Coverage

Accidents and incidents can be *broken down* or *categorized* by insurance coverage. The following covers some of the basics.

When an employee gets injured at work, the claim will likely be addressed through the Workers' Compensation coverage. When an owner, neighboring dwelling, subcontractor, the public, or a non-employee makes a claim, it is typically addressed through the general liability coverage. When an employee is driving on the company's behalf, a claim made for the vehicle or for another person's vehicle or property would be addressed through the auto coverage. There will be a potential for "*overlapping*" at times. An employee who is driving on the company's behalf has a vehicle accident and is injured may result in a Workers' Compensation claim for injury and an auto claim for damage to vehicle.

Suggested Practices

Manual handling, struck by and slips, trips and falls injuries can be addressed through the development and implementation of CNA's "Motion is Money," a process to enhance worker productivity and reduce risk factors. By examining the staging, positioning, work flow and work method techniques of the employee, you will be able to develop business solutions and make changes that will reduce or eliminate the exposures. Evaluating these activities through the

application of human factors, Lean and engineering methodologies, companies can identify and analyze non-value added task elements such as walking, bending, reaching, and twisting. This is critical to achieving a reduction in risk, improvement in productivity and enhancement in quality.

CNA offers construction specialists can assist in the development and implementation of a comprehensive safety program involving the Motion is Money process and other safety processes to address workers' compensation exposures outlined in this guide. In addition, CNA offers the Motion is Money pocket guide to superintendents and foreman who conduct observations and measures on the job site to better understand where productivity improvements can be made.

The fleet safety process should be approached from a human factor perspective, or the iteration of worker abilities to job requirements, for both in and out of cab behaviors such as eating, drinking, smoking while driving, climbing in/out of vehicles and raising and lowering trailers.

Fleet safety is an essential part of any business' safety program. Few companies can operate without at least occasionally allowing employees to drive their personal vehicle for company/business use. Companies have exposure to auto claims whether they own their vehicles or reimburse employees for mileage, fuel, extra work hours, or allowances while driving their personal vehicles on company business. Claim data indicates that accidents in which the insured driver rear-ended other vehicles are the leading loss source in terms of accident frequency and severity.

Developing motor vehicle report (MVR) criteria, a point systems for evaluating driver violations, driver orientation, drug testing of employees, and maintenance tracking of company-owned vehicles should be a part of a written, comprehensive fleet process.

Contractors have a unique situation where they complete heavy physical work throughout the day resulting in the accumulation of both mental and physical fatigue that can affect reaction time while driving. Management must have an understanding of this issue, educate employees, and develop and implement in-cab behavior guidelines to address the mental and physical fatigue levels. Roofing contractors must begin to explore beyond the traditional vehicle education and training methods and expand to incorporating human factors methodologies into their fleet program.

CNA offers a Fleet Institute for contractors that addresses issues and exposures presented in this study. In addition, CNA has fleet and ergonomic specialists who can assist in the development and implementation of a comprehensive fleet process.

CNA offers resources to aid in the implementation of a fleet safety program including guides and bulletins on managing fleet safety, accident prevention, and driver safety awareness. In addition, CNA provides customized fleet courses that are instructor-led or webinar-based that further addresses fleet safety.

A formal, written quality control program should be established with basic procedural requirements. Employees should be trained on the program and how to apply it. The program should be designed to follow the flow of work starting with a thorough review of all plans and specifications to ensure that all potential exposures are addressed at the level needed. If program changes are made or required, companies need to ensure that all change orders are in writing and properly signed by an authorized person. Any subcontracted work must have full risk transfer in place between the company and the subcontractor. This includes subcontract agreements that specifically address quality requirements. Companies should attain documentation from the contract holder that any required preparation work has been completed and authorization has been given to begin work. The program should also include steps to receive and retain all necessary quality documents from material suppliers, i.e., application systems, manufacturer's specifications, and warranty enforcement. As work begins, site supervisors must make documented quality inspections on a regular basis. Pictures are always recommended for the

documentation process. Roof quality, penetrations, seams joints, skylights and curbs should be inspected jointly by the company, the contract holder or their representative with sign-off where applicable. The key to a company's success is to make the process fit the business, and to document these processes.

Fire and explosion hazards are typically reduced through proper control, handling and storage of flammable and combustible liquids and materials. The Material Safety Data Sheet (MSDS), governing standards such as the Occupational Safety and Health Administration (OSHA), and the National Fire Protection Association (NFPA) give guidance for safe handling, control and storage. Controlling fuel sources and ignition sources are two critical steps. Smoking, flames, and sparks must all be controlled.

CNA offers construction specialists who can assist in the development and implementation of a comprehensive safety program involving the Motion is Money process, fleet program development or enhancement, and other safety processes to address the exposures discussed in this guide. In addition, exposure guides and bulletins are available covering topics such as Risk Transfer: A Strategy to Help Protect Your Business, Safety Responsibility of Job Site Foremen, and Slip and Fall Procedures on Job Sites.

School of Risk Control Excellence

Courses applicable for the Roofing Contractors Industry:

- Accommodating the Maturing Driver** – Highlights how age impacts driving and what safety measures can be adopted
- Case Management – A Partner With Workers' Compensation** – Addresses techniques to maximize the delivery of healthcare and return-to-work outcomes
- Department of Transportation (DOT) Primer** – Covers how to comply with DOT regulations, such as driver qualification files, vehicle inspection and maintenance, substance abuse and driver training requirements
- Drug and Alcohol Prevention** – Identifies ways to properly manage the work risks and legal issues of drug screening with pre-employment, post-accident, reasonable suspicion and random testing
- FallPRO** – Outlines steps for implementing a comprehensive fall protection process for the leading cause of fatalities in the construction industry
- In-Cab Behaviors** – Introduces human factors concept of addressing vehicle accidents
- Incident Investigation** – Identifies causes that can lead to incident investigation steps
- Lower Back Pain and Manual Material Handling** – Covers symptoms, characteristics and risk factors that contribute to the development of lower back pain
- Manage Chemical Health Risks to Protect Your Employees and the Company's Liability** – Explains the effect that chemicals in a product might have on the health of employees
- Managing Your Hearing Loss Trends** – Identifies risk management steps to limit further loss of hearing claims
- OSHA 10-Hour for Roofers** – Focuses on roofing construction safety and health
- Return-to-Work Process** – Explores elements of the return-to-work process and workers' compensation requirements
- Risk Transfer for Construction** – Addresses strategies for allocating and insuring risks to help minimize exposure and shift it to the responsible party
- Roofing Contractors Boot Camp** – Addresses industry loss drivers from a safety and industrial practice viewpoint
- Understanding Driver Fatigue** – Highlights sources of driver fatigue and provides controls that companies can use to reduce exposures

To find out more about these classes, go to: www.cna.com/riskcontrol

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To learn more about how CNA Risk Control can work with you to help you mitigate risks, please speak with your local independent agent, call us toll-free at 866-262-0540, or view our Risk Control tools online at www.cna.com/riskcontrol.

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