# Hand Tool Inspections Stats and Facts

## FACTS

1. Employers are responsible for the safe condition of tools and equipment used by employees, which includes tools and equipment that employees may furnish themselves. It applies to tools such as knives, axes, paper cutters, shovels, hammers, chisels, etc.
2. A US Department of Labor study, reported, injuries to fingers and hands accounted for more than 23%, making them the highest in preventable injuries and in terms of lost work days, they ranked second only to back and neck injuries.
3. It was found that a vast majority of employees who suffer hand injuries were not wearing gloves at the time and that many of those injured were wearing the wrong kind of gloves.
4. Medical costs and disability claims have escalated rapidly and the cost of a single injury multiples with each work day missed.
5. A National Safety Council study reports that the cost of just one disabling hand or finger injury varies from $540 to $26,000 per patient. With a serious upward extremity trauma averaging $730,000 per incident.
6. According to a recent Occupational Safety and Health Administration (OSHA) study, 70.9% of hand and arm injuries could have been prevented with personal protective equipment (PPE), specifically safety gloves.

## STATS

**Key Hand Injury Statistics:**

- 110,000 lost-time hand injuries annually
- Hand injuries send more than one million workers to the emergency room each year

- 70 percent of workers who experienced hand injuries were not wearing gloves
- The remaining 30 percent of injured workers did wear gloves, but the gloves were inadequate, damaged or the wrong type for the type of hazard present.
- The National Safety Council Guide:
    - Direct cost of a laceration: $10,000
    - Stitches: $2,000 plus indirect
    - Butterfly: $300
    - Severed Tendon: > $70,000
- The Bureau of Labor Statics reveals that cuts, lacerations and puncture wounds—all injuries commonly associated with hand tool use— accounted for 14,960 of the lost work-time cases in manufacturing during 2017.

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# Hand Tool Inspections Fatality Report

Manitoba addressed a case of a worker for Arne’s Welding Ltd. who was injured while operating a horizontal band saw in June 2017.

While making angled cuts, a piece of metal fell into the cutting area and the worker tried to push it away with a brush.

The blade of the saw caught the worker’s glove and pulled his hand in, resulting in a serious injury, the province said.

The employer pleaded guilty to “failing to ensure that a machine or tool was used or operated in accordance with the manufacturer’s specifications,” the release stated, and was ordered to pay $25,000 in fines and penalties, plus $5,000 to the public education fund.

# Hand Tool Inspections – Picture This




Source: *I.pinimg.com*

# Hand Tool Inspections Meeting Kit – Spanish

## QUÉ ESTÁ EN RIESGO

**Inspecciones de herramientas manuales Charla de seguridad**

Se producen muchas lesiones al utilizar herramientas manuales en el trabajo. Muchas de estas lesiones ocurren por el uso inadecuado, pero también hay lesiones que involucran una herramienta que estaba rota o que necesitaba ser reparada. El tipo de herramienta que se utiliza decidirá lo que necesita ser inspeccionado en ella.

## CUÁL ES EL PELIGRO

Las herramientas manuales más comunes que se encuentran en casi todos los lugares de trabajo y en los hogares de todo el país son destornilladores, martillos, cinceles y llaves inglesas.

Estas sencillas herramientas pueden ser peligrosas y tienen el potencial de causar lesiones graves cuando se utilizan o se mantienen de forma inadecuada. Es necesario prestar especial atención a la seguridad de las herramientas manuales y eléctricas para reducir o eliminar estos peligros.

Las herramientas manuales y su uso parecen simples y sencillas, por lo que pocos empresarios imparten formación sobre la seguridad de las herramientas manuales. Asimismo, pocos empresarios realizan inspecciones formales de las herramientas. Sin embargo, los empleados se lesionan con frecuencia por el uso de herramientas inseguras o por el uso inadecuado de las mismas.

## COMO PROTEGERSE

**TIPOS DE HERRAMIENTAS MANUALES**

Las herramientas de mano vienen en diferentes tamaños y funcionalidades, aquí están las herramientas de mano más comunes que se utilizan hoy en día:

- Herramientas de medición
- Cintas largas, reglas de cinta, etc.
- Herramientas de acabado
- Cuchillas de masilla, rasquetas, herramientas especializadas y cuchillas
- Herramientas de percusión y golpeo
- Martillos (de trineo, de cara blanda, especiales, de clavos, para enmarcar), cinceles (incluidos los de madera), punzones.
- Herramientas de trazado
- Niveles, escuadras, carretes de tiza y tiza, accesorios y marcadores
- Herramientas de fijación
- Alicates, destornilladores, llaves inglesas, atornilladores y carracas, grapadoras y tachuelas, grapas y clavos, pistolas de pegamento y barras de pegamento, remachadoras y ojales
- Herramientas de corte
- Cuchillas, cuchillos, cepillos, hojas de sierra, sierras para metales, accesorios, tijeras y sierras
- Herramientas de automoción
- Juegos de herramientas mecánicas, carracas y accesorios, llaves y juegos de llaves

**PROCESO DE INSPECCIÓN/FORMACIÓN**

Los empleadores son responsables del estado de seguridad de todas las herramientas, independientemente del propietario. Pueden ser herramientas proporcionadas por el empresario, herramientas personales de los trabajadores o las pertenecientes a los contratistas; el empresario debe asegurarse de que todas están en condiciones seguras. Esto implica algún tipo de inspección de las herramientas. Los empresarios deben asignar a alguien la responsabilidad de asegurarse de que todas las herramientas están en buen estado y de que las herramientas inseguras se retiran del

servicio. Los usuarios también deben recibir formación para saber cuándo hay que poner una herramienta fuera de servicio.

Los trabajadores deben recibir formación para inspeccionar las herramientas y sustituirlas cuando se vuelvan inseguras. El empresario debe realizar inspecciones aleatorias de las cajas de herramientas para comprobar su estado y cualquier signo de mal uso de las mismas.

**ELEMENTOS COMUNES DE INSPECCIÓN DE HERRAMIENTAS DE MANO**

**Martillos** – Asegúrese de que el mango no esté roto o astillado. Si el mango está pegado con cinta adhesiva, lo más probable es que esté roto y deba ser sustituido. En cualquier herramienta, la cinta adhesiva no es una solución aprobada por el fabricante para una reparación necesaria. Asegúrese de que la cabeza del martillo esté bien ajustada al mango. Deseche el martillo si parte de la garra está rota.

**Destornilladores** – Asegúrese de que el mango no esté astillado o roto. Muchas personas utilizan el destornillador como un cincel y golpean el extremo posterior del mismo con un martillo. Esto provoca daños en el destornillador y dañará el mango. Si la cabeza del destornillador está astillada o desgastada, sustituya el destornillador.

**Cinceles**– Los cinceles son herramientas fuertes, pero al igual que cualquier otra herramienta empezarán a estropearse con el tiempo. Compruebe la parte posterior del cincel. A menudo, la parte de atrás empieza a hacerse hongos. Cuando se produce este fenómeno, el cincel debe ser reparado o sustituido.

**Llaves** – Compruebe que la llave no esté doblada. Reemplace cualquier llave que esté astillada o excesivamente desgastada. Perder el agarre de un tornillo debido a una llave desgastada o rota puede causar fácilmente lesiones en las manos del usuario.

**ASPECTOS BÁSICOS DE LA SEGURIDAD DE LAS HERRAMIENTAS PARA COMPARTIR CON LOS TRABAJADORES**

Para que sus empleados eviten accidentes al trabajar con

herramientas manuales, los siguientes puntos deben ser tratados durante la formación:

- Mantenga siempre las herramientas en buen estado con un mantenimiento regular. Las herramientas sucias pueden ser más difíciles de utilizar.
- Utilice la herramienta adecuada para el trabajo y úsela correctamente. No utilice nunca una herramienta manual para algo que no haya sido diseñada.
- Inspeccione cada herramienta en busca de daños antes de utilizarla y no utilice nunca una herramienta dañada. Si las herramientas se mantienen adecuadamente, su inspección no debería llevar mucho tiempo. Sin embargo, no dé por sentado que todas las herramientas están en buen estado.
- Utilice las herramientas de acuerdo con las instrucciones del fabricante. Cuando utilice una herramienta que no haya usado nunca, revise las instrucciones. Es la mejor fuente de información. Si las instrucciones no están disponibles, hable con un compañero de trabajo que utilice la herramienta con frecuencia o pida ayuda a su supervisor. Averigüe también qué tipo de precauciones de seguridad incorpora el aparato y pruébelas para asegurarse de que funcionan correctamente.
- Utilice el equipo de protección personal (EPP) adecuado. Casi siempre son necesarios los guantes y las gafas de seguridad, aunque muchas herramientas requieren un EPP adicional.
- Asegúrese de haber seleccionado la herramienta manual de tamaño adecuado para el trabajo. Es necesario que la herramienta se ajuste de forma segura al material. Un destornillador demasiado grande para un tornillo concreto puede salirse de la cabeza del tornillo y provocar una desagradable herida por punción.

# CONCLUSIÓN

Las inspecciones de las herramientas manuales suelen quedar en segundo plano. La razón es que se presta más atención a la seguridad de las herramientas eléctricas. Las lesiones causadas

por las herramientas manuales se subestiman, como demuestra la falta de inspecciones formales de las mismas.

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# Hand Tool Inspections Stats and Facts – Spanish

## HECHOS

1. Los empleadores son responsables del estado de seguridad de las herramientas y equipos utilizados por los empleados, lo que incluye las herramientas y equipos que los empleados puedan proporcionar ellos mismos. Se aplica a herramientas como cuchillos, hachas, cortadoras de papel, palas, martillos, cinceles, etc.
2. Un estudio del Departamento de Trabajo de los Estados Unidos, informó, que las lesiones en los dedos y las manos representaron más del 23%, lo que las convierte en las más altas en lesiones prevenibles y en términos de días de trabajo perdidos, ocuparon el segundo lugar después de las lesiones de espalda y cuello.
3. Se descubrió que una gran mayoría de los empleados que sufren lesiones en las manos no llevaban guantes en ese momento y que muchos de los lesionados llevaban el tipo de guantes equivocado.
4. Los costes médicos y las reclamaciones por incapacidad han aumentado rápidamente y el coste de una sola lesión se multiplica con cada día de trabajo perdido.
5. Un estudio del Consejo Nacional de Seguridad informa de que el coste de una sola lesión incapacitante en la mano o el dedo varía entre 540 y 26.000 dólares por paciente. Con un traumatismo grave en las extremidades superiores, la media es de 730.000 dólares por incidente.

6. Según un reciente estudio de la Administración de Seguridad y Salud en el Trabajo (OSHA), el 70,9% de las lesiones de manos y brazos podrían haberse evitado con equipos de protección personal (EPP), concretamente con guantes de seguridad.

## ESTADÍSTICAS

- Principales estadísticas sobre lesiones de la mano:
- 000 lesiones de manos con baja laboral al año
- Las lesiones en las manos envían a más de un millón de trabajadores a urgencias cada año
- El 70% de los trabajadores que sufrieron lesiones en las manos no llevaban guantes
- El 30% restante de los trabajadores lesionados sí llevaba guantes, pero éstos eran inadecuados, estaban dañados o eran del tipo incorrecto para el tipo de peligro presente.
- Guía del Consejo Nacional de Seguridad:
    - Coste directo de una laceración: 10.000 dólares
    - Puntos de sutura: 2.000 dólares, más los indirectos
    - Mariposa: 300 dólares
    - Tendón cortado: > $70,000
- La Oficina de Estadísticas Laborales revela que los cortes, laceraciones y heridas por punción -todas las lesiones comúnmente asociadas con el uso de herramientas manuales- representaron 14,960 de los casos de tiempo de trabajo perdido en la industria manufacturera durante 2017.

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# Hand Tool Inspections Fatality Report – Spanish

Manitoba abordó el caso de un trabajador de Arne’s Welding Ltd. que se lesionó mientras operaba una sierra de cinta horizontal en junio de 2017.

Mientras realizaba cortes en ángulo, un trozo de metal cayó en la zona de corte y el trabajador trató de apartarlo con un cepillo.

La hoja de la sierra atrapó el guante del trabajador y le arrastró la mano, lo que le provocó una lesión grave, según la provincia.

El empleador se declaró culpable de “no garantizar que una máquina o herramienta se utilizara o funcionara de acuerdo con las especificaciones del fabricante”, según el comunicado, y se le ordenó pagar 25.000 dólares en multas y sanciones, más 5.000 dólares al fondo de educación pública.

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# Hand Tool Inspections – Picture This – Spanish



Cualquier herramienta tiene el potencial de ser peligrosa si está defectuosa o mal fabricada; esto no solo se aplica a las herramientas eléctricas, como las sierras de mesa y los taladros, sino que también se puede aplicar a las herramientas manuales sencillas, como los martillos, las llaves inglesas o los destornilladores. Según la industria, los trabajadores también

pueden usar maquinaria computarizada muy sofisticada que no solo debe fabricarse con especificaciones estrictas, sino que también debe mantenerse en buen estado durante todo el ciclo de vida de la herramienta o máquina.

Cuando los trabajadores usan herramientas en el lugar de trabajo, se espera que hayan sido fabricadas para ser seguras cuando se usan según las instrucciones y que funcionen según lo previsto por el fabricante. Sin embargo, cuando se trata de accidentes laborales, las herramientas y la maquinaria defectuosas se encuentran entre las principales causas de lesiones graves y muertes.

Es responsabilidad del empleador asegurarse de que todas las herramientas y equipos que todos los empleados utilizan en el trabajo estén en buen estado de funcionamiento y se mantengan de esa manera, inclusive el reemplazo de cualquier pieza rota cuando sea necesario.

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# Learning the Hard Way Meeting Kit

We have all heard the saying “learn the hard way”. There are many lessons in life that are learned the hard way because it may be the only way to really learn that particular lesson at a personal level. One area in life we cannot afford to learn the hard way is avoiding injury at work (or at home).

## LEARNING THE HARD WAY EQUALS INJURIES OR PROPERTY LOSS

When it comes to workplace safety, we cannot afford to let others around us learn the hard way. Learning the hard way will result in

an injury, property damage, loss in production, or worse. Learning a lesson, the hard way is reactive in nature. Someone has to fail for the lesson to be learned.

We all make mistakes. No one is perfect. But how many mistakes can be avoided? The truth is, some people repeat mistakes with alarming regularity. They make a mistake, get up from the fall, and run right back into the wall…again.

Everyday lessons are learned the hard way by workers who are injured on the job. There are many times we hear the horror stories of injuries and fatalities either through a safety share or lessons learned document. Too often the lessons we can learn from these safety shares are not embraced because it did not happen to us or someone, we are close to.

Employees should embrace the lessons learned from incidents at other companies or facilities that result in injury and be proactive in order to prevent a similar incident occurring in their workplace.

**WHEN EMPLOYEES ARE PROACTIVE, SAFETY IS CREATED**

For safety to be achieved on the job **workers need to be proactive**. Many safety rules and policies are created after an incident or injury occurs which is reactive in nature. To prevent a similar incident from happening again the lessons learned are turned into proactive measures that need to be implemented. Every safety meeting, safety training, and time taken to implement safeguards prior to work beginning is an attempt to be proactive when it comes to addressing safety in the workplace.

# PROACTIVE SAFETY DEFINED

In short, proactive safety measures entail any tactics employed to minimize the likelihood of an incident taking place. Being proactive means anticipating accidents, being prepared, minimizing response times, decreasing the number of injuries that occur in the workplace.

**REACTIVE SAFETY DISTINGUISHED FROM PROACTIVE SAFETY**

Reactive safety measures are essentially the opposite. A perceived advantage of operating under this method is saving money. However, both the direct and indirect costs of a workplace injury are notable. With unexpected expenses that could take a toll on your company's long-term profits, it just isn't worth the risk.

**PROACTIVE IS KEY FOR WORKPLACE SAFETY**

Workplace safety is often overlooked or simply taken for granted. No worker wants to be injured, and no employer wants to be responsible for an employee injury. So it's just "common sense" A worker who says "I've never been hurt" isn't necessarily being proactive to prevent injuries, he's simply recounting how lucky he's been. Similar to the stock market where past performance is not an indicator of future returns, a good safety record is not a guarantee of employee safety. **Complacency is the biggest threat to workplace safety.**

# SAFETY CULTURE AND THE EMPLOYEE´S ROLE

Safety culture encompasses the expectations, feelings, and perspectives of employees toward the safety of all workers in an organization – it is how safety is managed in the workplace. Of course, taking a proactive approach to building a positive safety culture will have a large impact on your company. A positive safety culture can lower staff turnover, reduce absenteeism, lower training costs, decrease workplace accidents, reduce possible insurance claims, and have a positive effect on your company's reputation.

**EVERY EMPLOYEE MISTAKE IS A LEARNING OPPORTUNITY**

- Mistakes make you human. Making a mistake is acceptable. Just don't let it return for an encore.
- Admit your mistakes and own them. Treat every mistake as a learning opportunity.

- Welcome feedback. Treat feedback as a gift rather than a slap in the face.
- Give yourself a grade. Every time you finish an activity, ask yourself, “If I had an opportunity to do this again, what would I do differently?”
- Challenge your routines. Leave your comfort zone and be receptive to change.
- Modify your habits. Ditch your bad habits. Practice doesn’t make perfect if you’re doing it wrong.
- Think before you begin an activity. Determine if you’ve done it in the past.
- Learn from others. If you learn from the mistakes of others, you won’t have to make every mistake yourself.

## FINAL WORD

When it comes to safety at work it is everyone’s responsibility. Allowing someone to “learn the hard way” cannot happen with safety on the job. Injuries and property damage affect everyone on a job not just the person at fault or who is a victim in the scenario.

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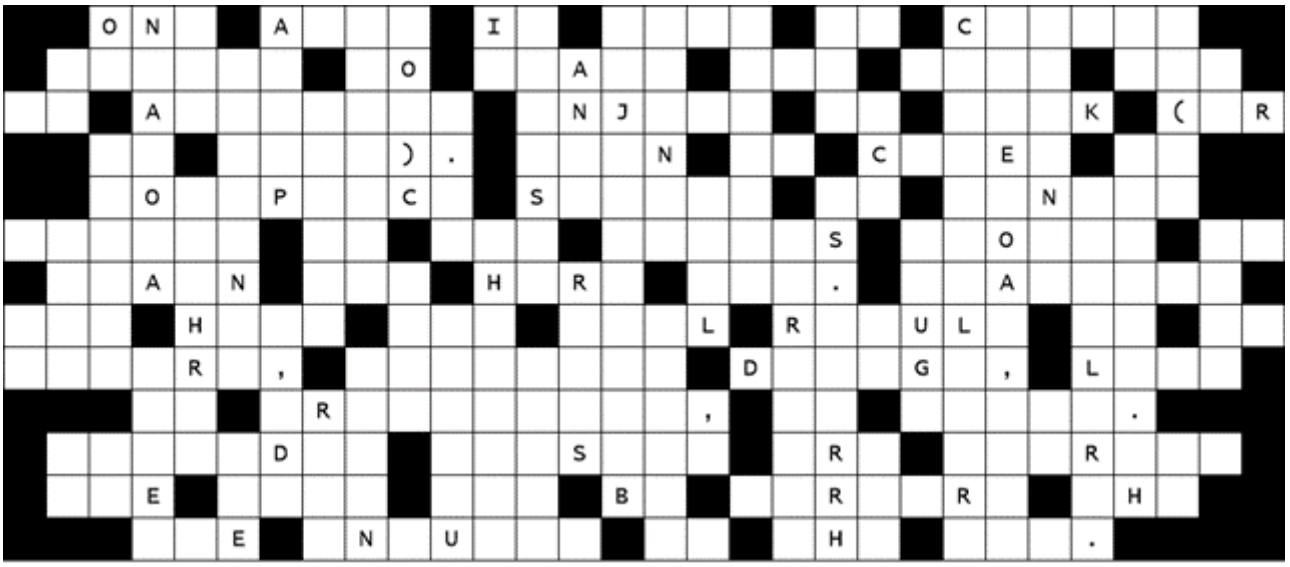
# Learning the Hard Way Fallen Phrases





Answer:

One area in life we cannot afford to learn the hard way is avoiding injury at work (or at home). When it comes to workplace safety, we cannot afford to let others around us learn the hard way. Learning the hard way will result in an injury, property damage, loss in production, or worse. Everyday lessons are learned the hard way by workers who are injured on the job.

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# Learning the Hard Way Word Search

WORD SEARCH

# LEARNING THE HARD WAY

## WORD SEARCH



T O U S C F Y Q Y Y R W V S T
S A F E T Y N O W C I I K A N
E R A P E R P Q H N A T W F E
V Q D T O Z G O J A S N A E D
L F M A N O I U K Z R N V G I
K J I R L E R M J V T D Y U C
U E S H O Y V Q I I Q E E A N
W O T K U M K E C N C Y S R I
I D A M A G E I R U I G A D O
R G K L W L P F D P N M E S Z
Q R E A E A O E K C A W R Y O
Q F S P T A R S D L H B C L X
L E Z E T X R S P I B Y E I O
B V Y K C K R N P B K J D C E
R E V I T C A O R P W T I I S

Safety Now
Learn
Mistakes
Anticipate
Prepare

Minimize
Decrease
Reduce
Damage
Hard

Safeguards
Injury
Proactive
Prevent
Incident

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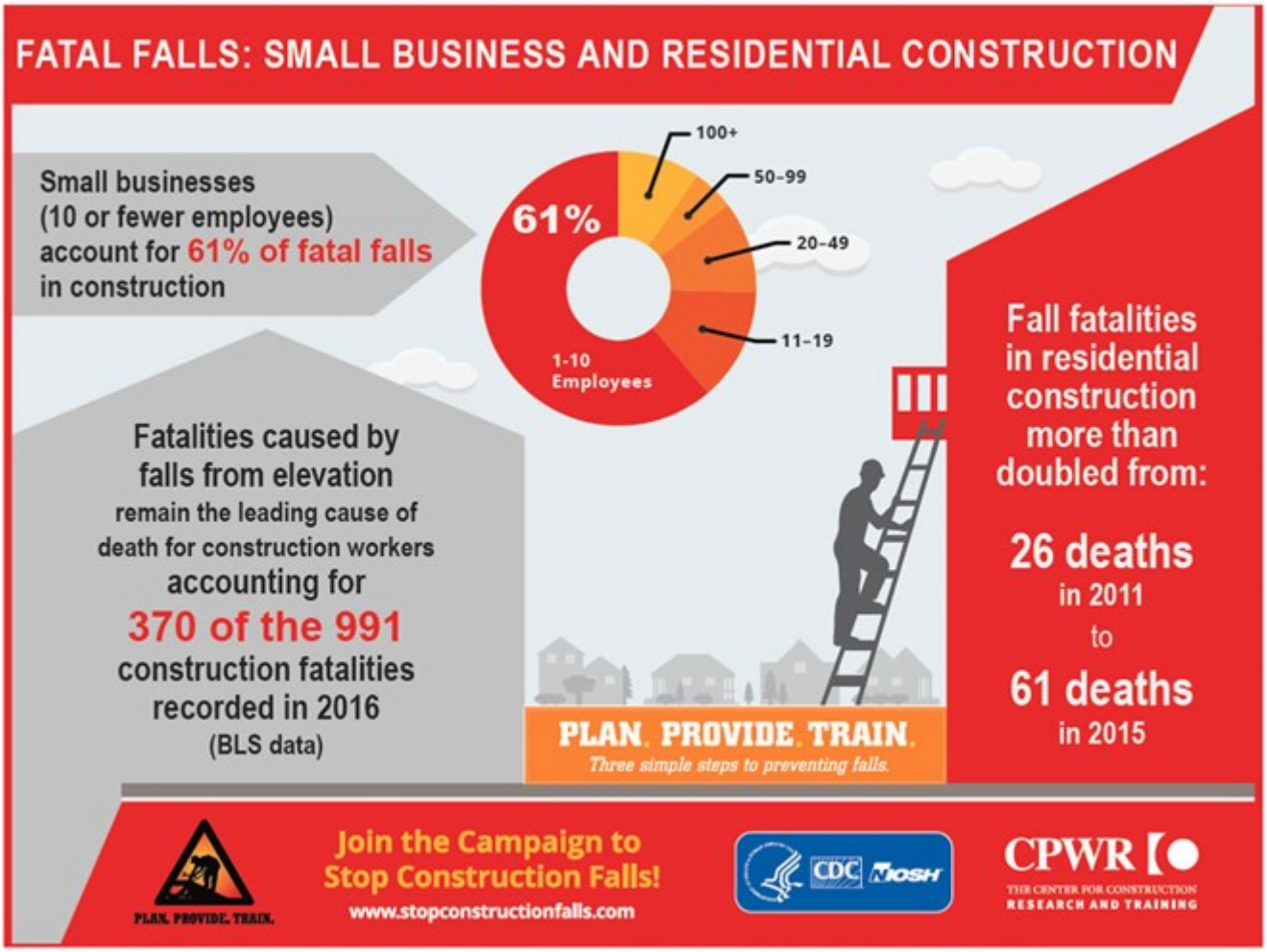
# Learning the Hard Way – Picture

# This




Source: *https://www.cdc.gov*

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# Learning the Hard Way Meeting Kit – Spanish

## QUÉ ESTÁ EN RIESGO

Todos hemos oído el dicho “aprender por las malas”. Hay muchas lecciones en la vida que se aprenden por las malas porque puede

ser la única manera de aprender realmente esa lección concreta a nivel personal. Un aspecto de la vida que no podemos permitirnos aprender por las malas es evitar las lesiones en el trabajo (o en casa).

# CUÁL ES EL PELIGRO

**APRENDER POR LAS MALAS EQUIVALE A LESIONES O PÉRDIDAS MATERIALES**

Cuando se trata de la seguridad en el lugar de trabajo, no podemos permitirnos que los demás aprendan por las malas. Aprender por las malas puede dar lugar a lesiones, daños materiales, pérdidas de producción o algo peor. Aprender una lección por las malas es de naturaleza reactiva. Alguien tiene que fallar para que se aprenda la lección.

Todos cometemos errores. Nadie es perfecto. Pero ¿cuántos errores se pueden evitar? La verdad es que algunas personas repiten errores con una regularidad alarmante. Cometen un error, se levantan de la caída y vuelven a estrellarse contra el muro… de nuevo.

Todos los días, los trabajadores que se lesionan en el trabajo aprenden la lección por las malas. Muchas veces nos enteramos de las historias de horror de las lesiones y los accidentes mortales a través de un parte de seguridad o de un documento de lecciones aprendidas. Con demasiada frecuencia, las lecciones que podemos aprender de estas acciones de seguridad no se aceptan porque no nos han ocurrido a nosotros o a alguien cercano.

Los empleados deben aprovechar las lecciones aprendidas de los incidentes ocurridos en otras empresas o instalaciones que provocan lesiones y ser proactivos para evitar que se produzca un incidente similar en su lugar de trabajo.

# COMO PROTEGERSE

**CUANDO LOS EMPLEADOS SON PROACTIVOS, SE CREA SEGURIDAD**

Para lograr la seguridad en el trabajo, los trabajadores deben ser

proactivos. Muchas normas y políticas de seguridad se crean después de que se produzca un incidente o una lesión, lo cual es de naturaleza reactiva. Para evitar que vuelva a producirse un incidente similar, las lecciones aprendidas se convierten en medidas proactivas que deben aplicarse. Cada reunión de seguridad, la formación en materia de seguridad y el tiempo dedicado a aplicar las medidas de protección antes de comenzar el trabajo es un intento de ser proactivo a la hora de abordar la seguridad en el lugar de trabajo.

**DEFINICIÓN DE SEGURIDAD PROACTIVA**

En resumen, las medidas de seguridad proactivas implican cualquier táctica empleada para minimizar la probabilidad de que se produzca un incidente. Ser proactivo significa anticiparse a los accidentes, estar preparado, minimizar los tiempos de respuesta y disminuir el número de lesiones que se producen en el lugar de trabajo.

**LA SEGURIDAD REACTIVA SE DISTINGUE DE LA PROACTIVA**

Las medidas de seguridad reactiva son esencialmente lo contrario. Una de las ventajas que se perciben al operar con este método es el ahorro de dinero. Sin embargo, los costes directos e indirectos de una lesión en el lugar de trabajo son notables. Con unos gastos inesperados que podrían afectar a los beneficios de su empresa a largo plazo, no merece la pena correr el riesgo.

**LA PROACTIVIDAD ES LA CLAVE DE LA SEGURIDAD EN EL TRABAJO**

La seguridad en el lugar de trabajo a menudo se pasa por alto o simplemente se da por sentada. Ningún trabajador quiere lesionarse, y ningún empleador quiere ser responsable de una lesión de un empleado. Un trabajador que diga “nunca me he lesionado” no está siendo necesariamente proactivo para prevenir las lesiones, sino que simplemente está contando la suerte que ha tenido. Al igual que en el mercado de valores, donde los resultados pasados no son un indicador de los rendimientos futuros, un buen historial de seguridad no es una garantía de seguridad para los empleados. La complacencia es la mayor amenaza

para la seguridad en el trabajo.

**LA CULTURA DE LA SEGURIDAD Y EL PAPEL DEL EMPLEADO**

La cultura de la seguridad engloba las expectativas, los sentimientos y las perspectivas de los empleados respecto a la seguridad de todos los trabajadores de una organización: es la forma en que se gestiona la seguridad en el lugar de trabajo. Por supuesto, adoptar un enfoque proactivo para construir una cultura de seguridad positiva tendrá un gran impacto en su empresa. Una cultura de seguridad positiva puede disminuir la rotación de personal, reducir el absentismo, reducir los costes de formación, disminuir los accidentes laborales, reducir las posibles reclamaciones al seguro y tener un efecto positivo en la reputación de su empresa.

**CADA ERROR DE LOS EMPLEADOS ES UNA OPORTUNIDAD DE APRENDIZAJE**

- Los errores lo hacen humano. Cometer un error es aceptable. Pero no permita que vuelva a repetirse.
- Admita sus errores y asúmalos. Trate cada error como una oportunidad de aprendizaje.
- Acepte los comentarios. Trata los comentarios como un regalo y no como una bofetada en la cara.
- Póngase una nota. Cada vez que termine una actividad, pregúntese: “Si tuviera la oportunidad de hacer esto de nuevo, ¿qué haría de forma diferente?”
- Desafíe sus rutinas. Salga de su zona de confort y sea receptivo al cambio.
- Modifique sus hábitos. Abandone sus malos hábitos. La práctica no hace la perfección si lo haces mal.
- Piense antes de empezar una actividad. Determine si lo ha hecho en el pasado.
- Aprenda de los demás. Si aprendes de los errores de los demás, no tendrá que cometer todos los errores usted mismo.

# CONCLUSIÓN

Cuando se trata de la seguridad en el trabajo, es responsabilidad de todos. Permitir que alguien “aprenda por las malas” no puede

ocurrir con la seguridad en el trabajo. Las lesiones y los daños a la propiedad afectan a todos en un trabajo, no sólo a la persona culpable o a la que es víctima en el escenario.

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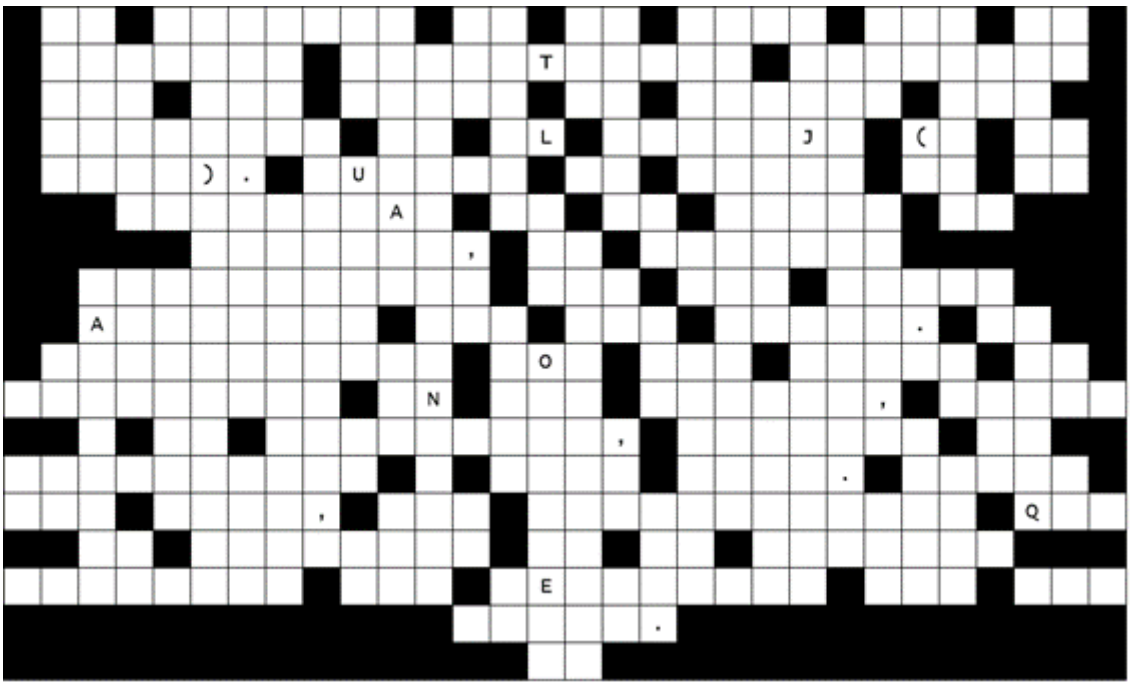
# Learning the Hard Way Fallen Phrases – Spanish






Respuesta: Un aspecto de la vida que no podemos permitirnos aprender por las malas es evitar las lesiones en el trabajo (o en casa). Cuando se trata de la seguridad en el lugar de trabajo, no podemos permitirnos que los demás aprendan por las malas. El aprendizaje por las malas se traducirá en una lesión, daños a la propiedad, pérdida de producción o algo peor. Todos los días, los trabajadores que se lesionan en el trabajo aprenden las lecciones por las malas.

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# Learning the Hard Way Word Search – Spanish

SOPA DE LETRAS

# APRENDIENDO DE LA MANERA MÁS DIFÍCIL

## SOPA DE LETRAS

P R E V E N I R K A Q J J P
A U D P I N C I D E N T E R
N A A P M F T C D G Q N U E
T P Ñ G S R E D U C I R V P
I R A R E R R O R E S B F A
C E R W S A F E T Y N O W R
I N V Z K J Q G H N Y B F A
P D K G M Y S D P R R Y T C
A E H Q Y D I F Í C I L U I
R R D Y I Z Y H J J S R F Ó
S Q X P R O A C T I V O P N
E C X D I S M I N U I R A P
G Y F G H M I N I M I Z A R
J R F R L E S I Ó N R K V T

Safety Now
Aprender
Errores
Anticiparse
Preparación

Minimizar
Disminuir
Reducir
Dañar
Difícil

Protectores
lesión
Proactivo
Prevenir
Incidente

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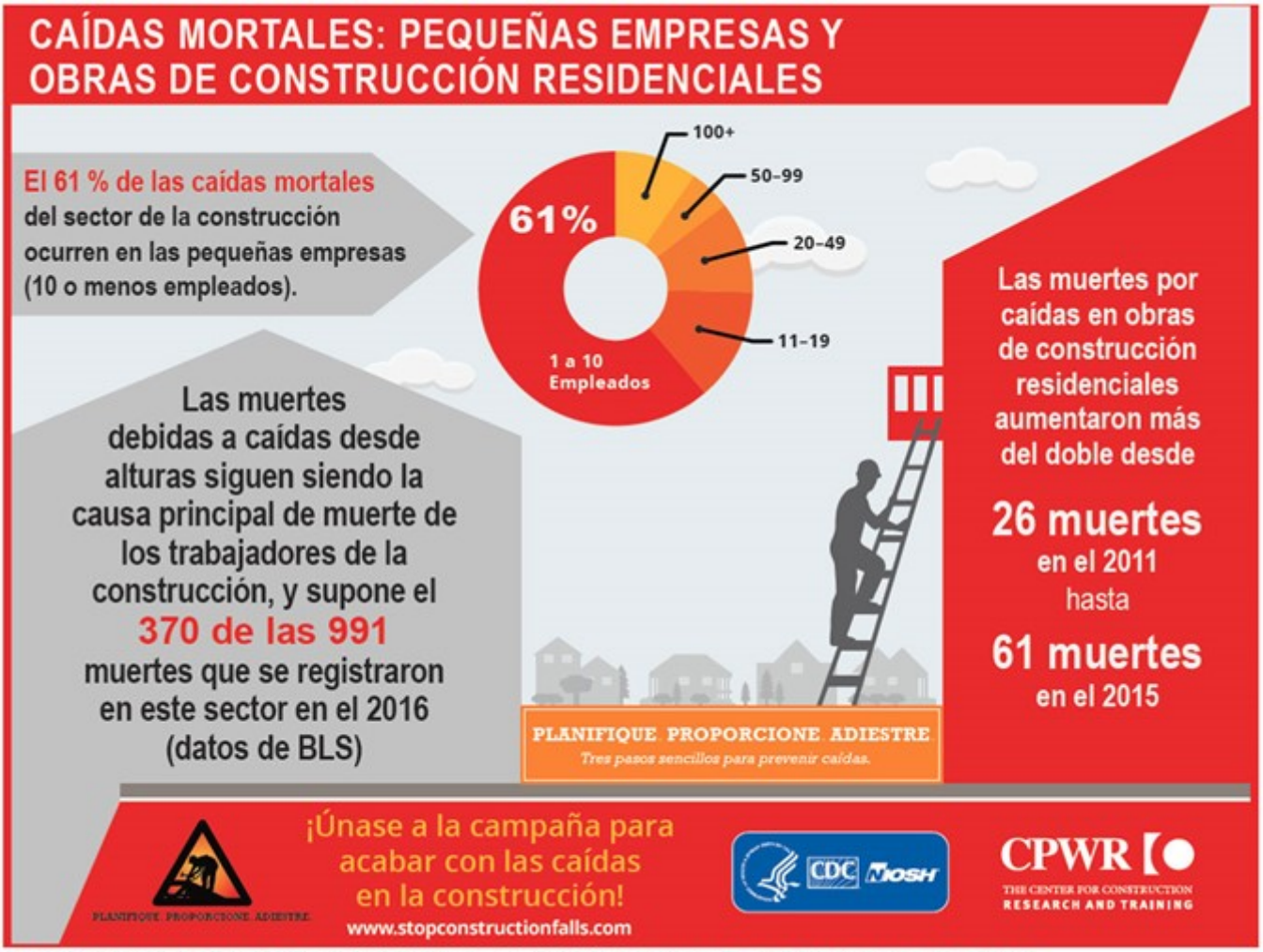
# Learning the Hard Way – Picture This – Spanish




Fuente 1: The Construction Chart Book 6th Edition, Chart 44d. https://www.cpwr.com/sites/default/files/publications/The_6th_Edition_Construction_eChart_Book.pdf
Fuente 2: CPWR Quarterly Data Report, First Quarter 2017. https://www.cpwr.com/sites/default/files/publications/Quarter1-QDR-2017.pdf

Fuente: https://www.cdc.gov

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# Pressure Washing Meeting Kit

## Pressure Washer Safety

A pressure washer is a power tool that sprays water at high pressures to clean large, sturdy surfaces such as buildings, farm equipment and roads.

While the pressure of the water can be considered the biggest exposure to risk during this work task, there are certainly many more hazards to be considered.

# RISKS OF PRESSURE WASHING

The strong spray from a pressure washer can cause serious wounds that might first appear minor. Wounds that appear minor can cause a person to delay treatment, increasing risk for infection, disability or amputation.

The fast, strong spray can throw objects that strike and injure others who are close by.

Electric shock can occur if the pressure washer is not used properly and if safety instructions are not followed.

Workers should not use any equipment powered by gasoline engines inside buildings or other partially enclosed spaces unless the gasoline engine can be placed outdoors and away from air intakes.

# HAZARDS AND INJURIES CAUSED BY PRESSURE WASHERS

Some of the injuries that cleaning technicians can suffer while using pressure washers include:

- Penetration wounds from thrown glass fragments, rocks, and other debris
- Abrasions
- Infections such as tetanus
- Eye injuries
- Injection injuries caused when cleaning chemicals penetrate the skin
- Slip-and-fall injuries occurring on flat surfaces
- Electrocution injuries
- Falls from height when use of a pressure washer on a ladder or scaffolding causes a worker to lose balance

**MORE HAZARDS INFORMATION**

Long-term use of these pressure washers can cause hearing loss. Use of gas pressure washers in enclosed spaces lead to the buildup of carbon monoxide and result in asphyxiation.

A significant danger for workers is the innocuous appearance of some of these injuries when they first occur. But a penetration wound, for example, can result in an infection, which in turn can lead to eventual disability or even amputation.

**PRESSURE PRECAUTIONS FOR WORKERS**

- Never point a pressure washer at yourself or others.
- Never attempt to push or move objects with spray from the washer.
- Never use a gasoline powered washer in an enclosed space.
- Always test the ground fault circuit interrupter (circuit breaker or outlet) before using a pressure washer.
- Always plug a properly grounded pressure washer into a properly grounded receptacle.
- Wear rubber-soled shoes that provide some insulation when using the pressure washer.
- Never cut or splice the pressure washer’s power cord or extension cords.
- Never remove the grounding prong from the pressure washer’s power cord plug or the extension cord.
- Always have a qualified electrician check the pressure washer for electrical problems after it has tripped a circuit breaker.
- Never allow children to operate a pressure washer. Keep children at a safe distance when an adult is using a pressure washer.

**WORKERS CAN REDUCE THE LIKELIHOOD OF PRESSURE WASHER INJURIES**

Those who use pressure washers as part of their work duties understand their power. But when people use a tool every day, they can grow complacent and even careless. Workers can minimize the possibility of injury by taking these steps:

- Don’t depress the trigger until you have pointed the nozzle at the thing you want to spray.
- When using an electrically-powered pressure washer, make sure that the power cord and any extension cord are not in standing water.

- If you have to operate a pressure washer on a ladder, lift, or scaffold, use a safety harness.
- Avoid the use of solid stream nozzles. Use a wide-angle or fan nozzle instead.
- Set up your work area where other people are not in the line of fire of the water stream or flying debris.
- Use a longer wand that makes it hard for the individual who is using the pressure washer to make contact with their own body.
- When using a pressure washer that is also supplied with heat, do not turn it all the way up. Using heat can be more effective to remove debris; however it also creates the opportunity for a burn.
- Maintain good housekeeping. Keep the area free of trip hazards. Remove excess mud to prevent slip injuries.
- Wear the proper PPE. Depending on what is being cleaned and the power of the pressure washer will dictate what exact PPE is needed. A good start is rain gear, safety toe boots, gloves, safety glasses, and face shield.
- Never use a pressure washer to spray off yourself or your boots.
- Never use zero tips. These tips are usually painted red. Choose a tip with a wider angle of spray to reduce the chance of a severe injury if the stream makes contact with the body.

# FINAL WORD

Consider all of the risks of pressure washing and what steps you need to take to protect yourself and the others around you. While the main hazard considered is the pressure of the water, there are many more secondary hazards that could lead to the actual injury.

# Pressure Washing Stats and Facts

## FACTS

1. Use of pressure washers can cause hearing loss.
2. Use of pressure washers in enclosed spaces lead to the buildup of carbon monoxide and result in asphyxiation.
3. A pressure washer’s powerful spray is hazardous when misdirected, it’s strong enough to damage or lacerate the skin in an instant. Lacerations are the most common injury, followed by bruises, punctures, infections and eye injuries.
4. Other injuries caused when using pressure washers include:

- Infections such as tetanus.
- Injection injuries caused when cleaning chemicals penetrate the skin.
- Slip-and-fall injuries occurring on flat surfaces.
- Falls from height when use of a pressure washer on a ladder or scaffolding causes a worker to lose balance.
- Electrocution injuries.

## STATS

- In 2014 alone, over 6,000 people were admitted into emergency rooms due to injuries they suffered while using power washers. While many only needed emergency medical treatment, almost **15** % of the injuries suffered were so severe that hospitalization was required.
- Up to **30%** of pressure injuries eventually require amputation and expert surgical opinions in case reports even recommend that all high-pressure injection injuries receive a fasciotomy within six hours from injury onset in order to decrease amputation risk.
- Four hundred thirty-five cases of high-pressure injection injury to the upper extremity were identified. The amputation rate after these injuries was **30%**. The location

of the injury and the material injected contributed significantly to the need for amputation. For injections of paint, paint thinner, gasoline, oil, or jet fuel (organic solvents), the amputation risk was lower if wide surgical debridement occurred within 6 hours of injury.

- An estimated 6,057 people in 2017 alone went to an emergency room with injuries related to pressure washer use, according to the Consumer Product Safety Commission. And **14%** of those ER visits led to additional hospitalization.

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# Pressure Washing Fatality Report

Standing In fall of 2015, a 34-year-old Hispanic man was electrocuted while using a pressure washer to clean the interior of a swine finishing barn.1 He and a coworker had been assigned to pressure wash buildings at local farms managed by their employer.

The victim was a native of Honduras who had worked in the US for several months before moving to the local area. The incident occurred on his sixth day of work.

The day of the fatality, the victim and his coworker arrived to work at the farm where the incident later occurred. Their supervisor, the site manager, instructed them to clean the finishing barn’s concrete floors and steel gate partitions using the electric-powered high pressure washer they had used in other buildings that week.

At mid-morning, the coworker left to work at a different farm, but he returned to eat lunch with the victim over the noon hour. During lunch, the two workers discussed that the washer continued to malfunction just as it had during the week. After lunch, the coworker went back to the farm where he had been working, and the victim resumed pressure washing alone. The site manager returned

to the barn at 15:30 to check on the victim's progress and saw him inside, slumped over a steel gate partition along the center aisle of the main room.

The manager tried to rouse the unresponsive victim and pulled him to the loading dock area adjacent to the main room. The victim was cold and without a pulse. The manager called 911, and he then disconnected power at the circuit breaker and turned off the faucet supplying water to the pressure washer. Within several minutes, the county Sheriff, an ambulance crew, and local emergency responders arrived from a town nearby. The county Medical Examiner arrived at the site and pronounced the victim dead at 16:00.

The position of the victim's body when found suggested that he had been leaning over the gate to reach the pressure washer. An autopsy identified an electrical burn injury to the victim's right thigh where it had contacted the steel gate. The cause of death was determined to be electrocution.

Law enforcement agencies and the Iowa Division of Labor Services/Occupational Safety and Health Bureau (IOSHA) investigated the fatality. Interviews with the victim's manager and coworker revealed that the pressure washer had a history of electric malfunction that was known to the manager and employees for several days preceding the fatality: workers who handled the metal wand or high pressure hose had received electric shocks; the machine "threw sparks" when its metal wand contacted other metal surfaces in the buildings; power surges of the pressure washer motor caused room lights on the same circuit to dim; and the machine periodically shut off while in operation. Four days before the fatality, it had short-circuited, tripping circuit breakers and burning a receptacle at a different farm building.

# Pressure Washing – Picture This




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# NFPA 30 Flammable Liquids – Quick Tips

The mission of the National Fire Protection Association (NFPA) is to help save lives and reduce loss with information, knowledge and passion. NFPA is a trade association established in 1896 that creates and maintains over 300 private, copyrighted standards and codes aimed at eliminating death, injury, property and economic loss due to fire, electrical and related hazards. NFPA also conducts research, training, education, outreach and advocacy that are designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service and installation around the world.

**What is NFPA 30?**

On August 17, 2017, the NFPA Standards Council issued the 2018 edition of NFPA 30: Flammable and Combustible Liquids Code with an effective date of September 17, 2017. NFPA 30 provides fundamental safeguards for the storage, handling and use of flammable and combustible liquids, including waste liquids. It is the best practice widely used in industry and by insurers.

The 2018 edition highlights 19 notable changes from the 2015 edition. Most of the changes clarify the Code's intent and help reduce conflicts or confusion. Other changes provide essential safety updates and references to current Underwriter Laboratory (UL) standards, as well as completely revised requirements for General Purpose Warehouses to only allow specific liquid/container combinations to be stored in such facilities. Other key changes include:

- Nonmetallic intermediate bulk containers are now recognized as meeting the fire exposure test protocols found in 9.4.1.1.
- Subsection 18.5.4 has been completely revised to reflect current maximum allowable quantities (MAQs) found in section 9.6.
- Definitions of "rack," "rack bay," and "rack section" have been added to section 3.3.
- Definitions of "protected" and "unprotected" as they related to storage of containers have been modified.
- UL standard 2368 and FM Class 6020 has been referenced in paragraph 9.4.1.1 and deleted from Table 9.4.3 and added to subsection 16.3.7.
- UL standard 1275 and FM Class 6050 has been referenced in paragraph 9.4.3(4).
- Provisions have been added to section 12.8 General Warehouses that only allow specific liquid/container combinations to be stored in such facilities.
- The requirement to use foam-water sprinkler system designed in accordance to NFPA 16 has been removed from paragraph 16.5.1.6.

- Alternative means to calculate the water demand for the most hydraulically remote in-rack sprinklers were added to paragraph 16.6.4.4(3).
- Reference to the single horizontal barrier was removed in paragraphs 16.6.2.4(3) and 16.6.2.4(4).
- Alternate means were added to calculate the water demand for the most hydraulically remote in-rack sprinklers to paragraph 16.6.3.4(3).
- Text relating to listed flexible connectors was removed from subsection 18.4.7 to avoid duplication found in subsection 27.5.2.
- A new paragraph 19.7.2.2.2 adds a requirement that nonmetallic cooking oil tanks be listed in accordance with UL standard 2152.
- The requirement of permitted means of securing cooking oil tanks was clarified in paragraph 19.7.3.2.1.
- Paragraph 21.4.3.4 was amended to eliminate a potential conflict with paragraph 21.4.2.1.2.
- The reference to API 1604 found in paragraph 21.7.4.3.1 was moved to Annex A.21.7.4.3.1.
- The required separation distance between liquid storage tanks and LP-Gas containers was amended in paragraph 22.4.2.4.2 to match requirement found in NFPA 58.
- A requirement that flexible connectors be listed in accordance with UL standard 2039 was added to subsection 27.5.2.
- The extinguisher’s weight was replaced with its rating as the appropriate criteria was amended in paragraph 29.3.28.4. Existing extinguishers provided on a weight basis are allowed to remain in service.

**NFPA 30 Handbook:** The NFPA Handbook is a companion to the NFPA 30 code. It includes the texts of both NFPA 30 and NFPA 30A (Code for Motor Fuel Dispensing Facilities and Repair Garages) with added expert commentary that explains the provisions of the standards. It also adds hundreds of visuals, including full-color photographs that help visualize concepts, more detailed descriptions of the changes made from the 2015 edition and various other enhancements to help better understand the NFPA 30 provisions.

**What Was New in the 2015 Edition of NFPA 30?**

The 2015 edition of NFPA 30 highlighted 11 notable changes from the 2012 edition. Most notable of these changes is the definition of a safety can. It has been amended to incorporate a screen/strainer in each fill and pour opening. Other changes to the 2015 edition of NFPA 30 include:

- The definition of “safety can” has been amended to incorporate a screen/strainer in each fill and pour opening.
- A new storage height restriction of 12 feet for unprotected storage in mercantile occupancies.
- Numerous amendments to Chapter 16 to eliminate inconsistencies between NFPA 30 and NFPA 13: Installation of Sprinkler System rules.
- Separation distances were increased between process vessels and adjacent important buildings and property lines as recommended by the U.S. Chemical Safety and Hazard Investigation Board.
- A new subsection was added to cover hand-operated pumps to dispense liquids that require the use of compressed air.
- A new section governs the installation of bulk cooking oil storage and dispensing systems for use in commercial kitchens.
- The use of a weak roof-to-shell seam was eliminated as a means of emergency venting for aboveground steel storage tanks.
- A maximum capacity of 50,000 gallons was set for all secondary containment type storage tanks for Class I, Class II and Class IIIA liquids.
- Provisions for the use of low melting point piping material were strengthened.
- Added additional requirements for those responsible for loading and unloading tank vehicles.
- Security of storage tanks in remote areas is now addressed in Annex A.

**Frequently Asked Questions**

**Q: What is a safety can?/b>**

**A**: NFPA 30 paragraph 3.3.49 defines a **safety can** as a listed container of not more than 5.3 gallons (20 liters) capacity having a screen or strainer in each fill-and-pour opening and having a spring-closing lid and spout cover designed to safely relieve internal pressure when exposed to fire.

**Q: Are wooden cabinets acceptable for flammable storage?**

**A**: NFPA 30, chapter 9.5.3(3) states, "Wooden cabinets constructed in the following manner are acceptable. The bottom, sides and top shall be constructed of exterior grade plywood at least 1 inch (25 millimeters) in thickness, which shall not break down or delaminate under fire conditions. All joints shall be rabbeted and shall be fastened in two directions with wood screws. When more than one door is used, there shall be a rabbeted overlap of not less than 1 inch (25 millimeters). Doors shall be equipped with a means of latching, and hinges shall be constructed and mounted in such a manner as to not lose their holding capacity when subjected to fire exposure. A raised sill or pan capable of containing a 2 inch (50 millimeter) depth of liquid shall be provided at the bottom of the cabinet to retain spilled liquid within the cabinet."

**Q: Do flammable liquid storage cabinets have to be vented?**

**A**: NFPA 30, paragraph 9.5.4 states that a flammable liquid storage is not required to be vented for fire protection purposes. Paragraph 9.5.4.2 states if the storage cabinet is vented for any reason, the vent openings must be ducted directly to a safe location outdoors or to a treatment device designed to control volatile organic compounds (VOCs) and ignitable vapors in such a manner that will not compromise the specified performance of the cabinet and in a manner that is acceptable to the authority having jurisdiction.

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*the information or references are complete or remain current. This article is not a substitute for review of current applicable government regulations, industry standards, or other standards specific to your business and/or activities and should not be construed as legal advice or opinion. Readers with specific questions should refer to the applicable standards or consult with an attorney.*

Source: Grainger Know How – https://www.grainger.com/know-how

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# Chemical Compatibility Storage Guidelines – Quick Tips

Reduce or eliminate chemical-related storage risks.

Chemicals play an important role in many workplace applications. The inherent hazards of chemicals can be reduced by minimizing the quantity of chemicals on hand. However, when chemicals must be in-house, proper storage and handling can reduce or eliminate some of the associated risks.

Proper storage information can be obtained from Section 7 of the Safety Data Sheet (SDS). As required by 29 Code of Federal Regulations (CFR) 1910.1200, an SDS must be on hand for every hazardous chemical in your workplace. Sections 7, 9, and 10 of the SDS can also answer questions such as:

- Is the chemical a flammable?
- Is the chemical a corrosive?
- Does the chemical need to be stored other than at ambient temperature?
- Is the chemical an oxidizer or reducer?
- Is the chemical light sensitive?
- Does the chemical require any special handling procedures?

Typical storage considerations may include temperature, ignition control, ventilation, segregation and identification. Proper segregation is necessary to prevent incompatible materials from inadvertently coming into contact. If incompatible materials were to come into contact, fire, explosion, violent reactions or toxic gases could result.

When segregating chemicals, acids should not be stored with bases, and oxidizers should not be stored with organic materials or reducing agents. Physical barriers and/or distance are effective for proper segregation.

If cabinets are used to segregate chemicals, consider the compatibility of the chemicals with the cabinet. For example, corrosives, like strong acids and caustics, will corrode most metal cabinets. Non-metallic or epoxy-painted cabinets are available and will provide a better service life with these types of chemicals. Some acids and bases may damage the epoxy-painted surfaces of a cabinet if a spill occurs. Also, perchloric acid should not be stored in a wooden cabinet.

There are cabinets designed specifically to store flammable liquids. It is important to be aware of the maximum allowable container size and maximum quantities for storage in cabinets based on the category of the flammable. The category of a flammable is determined by its flash point and boiling point. The Occupational Safety and Health Administration (OSHA) has defined a flammable liquid as any liquid having a flash point of not more than 93° C or 199.4° F (29CFR 1910.106(a)(19)). OSHA further classifies flammables into four categories. 29 CFR 1910.106(a)(19)(i-v) and Table B.6.1 of 29 CFR 1910.1200 Appendix B provides the criteria for the four flammable liquid categories:

| Category | Criteria |
|---|---|
| 1 | Flash point |
| 2 | Flash point 95 °F |
| 3 | Flash point > 73.4 °F and ≤ 140 °F |
| 4 | Flash point > 140 °F and ≤ 199.4 °F |

The following chart lists the maximum volume of flammables that can be stored in a single container type:

| Maximum Allowable Size of Containers and Portable Tanks | | | | |
|---|---|---|---|---|
| Container Type | Category 1 | Category 2 | Category 3 | Category 4 |
| Glass or approved plastic | 1 pint | 1 quart | 1 gallon | 1 gallon |
| Metal (other than DOT drums) | 1 gallon | 5 gallons | 5 gallons | 5 gallons |
| Safety Cans | 2 gallons | 5 gallons | 5 gallons | 5 gallons |
| Metal Drums (DOT spec.) | 60 gallons | 60 gallons | 60 gallons | 60 gallons |
| Approved Portable Tanks | 660 gallons | 660 gallons | 660 gallons | 660 gallons |

The following chart lists the maximum volume of flammables that can be stored in a single flammable storage cabinet.

| Maximum Storage Quantities for Cabinets | |
|---|---|
| Liquid Class | Maximum Storage Capacity |
| Category 1 | 60 Gallons |
| Category 2 | 60 Gallons |
| Category 3 | 60 Gallons |
| Category 4 | 120 Gallons* |

*Not more than 60 gallons may be Category 1, 2, or 3 liquids. No more than 120 gallons of Category 4 liquids may be stored in a storage cabinet, according to OSHA 29 CFR 1910.106(d)(3)(i).

For ease of locating chemicals, many storerooms organize chemicals alphabetically. However, chemical storage based upon an alphabetical arrangement of chemicals may inadvertently locate incompatible materials in close proximity to one another. A few examples of this potentially dangerous storage method are

demonstrated by the following pairs of incompatible materials:

| Chemical | Reaction |
|---|---|
| Acetic acid and acetaldehyde | Polymerization of acetaldehyde |
| Copper (II) sulfide and cadmium chlorate | Explosive reaction |
| Hydrogen peroxide and iron (II) sulfide | Reacts vigorously |
| Sodium nitrite and sodium thiosulfate | Explosive when heated |

Other common examples of incompatible chemicals:

| Chemical | Is Incompatible and Should Not Be Mixed or Stored With |
|---|---|
| Acetic acid | Chromic acid, nitric acid, hydroxyl compounds, ethylene glycol, perchloric acid, peroxides, permanganates |
| Acetylene | Chlorine, bromine, copper, fluorine, silver, mercury |
| Acetone | Concentrated nitric and sulfuric acid mixtures |
| Alkali and alkaline earth metals (such as powdered aluminum or magnesium, calcium, lithium, sodium, potassium) | Water, carbon tetrachloride or other chlorinated hydrocarbons, carbon dioxide, halogens |
| Ammonia (anhydrous) | Mercury, chlorine, calcium hypochlorite, iodine, bromine, hydrofluoric acid (anhydrous) |
| Ammonium nitrate | Acids, powdered metals, flammable liquids, chlorates, nitrates, sulfur, finely divided organic or combustible materials |

| | |
|---|---|
| Aniline | Nitric acid, hydrogen peroxide |
| Arsenical materials | Any reducing agent |
| Azides | Acids |
| Bromine | See Chlorine |
| Calcium oxide | Water |
| Carbon (activated) | Calcium hypochlorite, all oxidizing agents |
| Carbon tetrachloride | Sodium |
| Chlorates | Ammonium salts, acids, powdered metals, sulfur, finely divided organic or combustible materials |
| Chromic acid and chromium trioxide | Acetic acid, naphthalene, camphor, glycerol, alcohol, flammable liquids in general |
| Chlorine | Ammonia, acetylene, butadiene, butane, methane, propane (or other petroleum gases), hydrogen, sodium carbide, benzene, finely divided metals, turpentine |
| Chlorine dioxide | Ammonia, methane, phosphine, hydrogen sulfide |
| Copper | Acetylene, hydrogen peroxide |
| Cumene hydroperoxide | Acids (organic or inorganic) |
| Cyanides | Acids |
| Flammable liquids | Ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens |
| Fluorine | Everything |
| Hydrocarbons (such as butane, propane, benzene) | Fluorine, chlorine, bromine, chromic acid, sodium peroxide |
| Hydrocyanic acid | Nitric acid, alkali |

| | |
|---|---|
| Hydrofluoric acid (anhydrous) | Ammonia (aqueous or anhydrous) |
| Hydrogen peroxide | Copper, chromium, iron, most metals or their salts, alcohols, acetone, organic materials, aniline, nitromethane, combustible materials |
| Hydrogen sulfide | Fuming nitric acid, oxidizing gases |
| Hypochlorites | Acids, activated carbon |
| Iodine | Acetylene, ammonia (aqueous or anhydrous), hydrogen |
| Mercury | Acetylene, fulminic acid, ammonia |
| Nitrates | Sulfuric acid |
| Nitric acid (concentrated) | Acetic acid, aniline, chromic acid, hydrocyanic acid, hydrogen sulfide, flammable liquids, flammable gases, copper, brass, any heavy metals |
| Nitrites | Acids |
| Nitroparaffins | Inorganic bases, amines |
| Oxalic acid | Silver, mercury |
| Oxygen | Oils, grease, hydrogen, flammable liquids, solids or gases |
| Perchloric acid | Acetic anhydride, bismuth and its alloys, alcohol, paper, wood, grease, oils |
| Peroxide, organic | Acids (organic or mineral), avoid friction, store cold |
| Phosphorus (white) | Air, oxygen, alkalis, reducing agents |
| Potassium | Carbon tetrachloride, carbon dioxide, water |
| Potassium chlorate | Sulfuric and other acids |

| | |
|---|---|
| Potassium perchlorate (see also chlorates) | Sulfuric and other acids |
| Potassium permanganate | Glycerol, ethylene glycol, benzaldehyde, sulfuric acid |
| Selenides | Reducing agents |
| Silver | Acetylene, oxalic acid, tartartic acid, ammonium compounds, fulminic acid |
| Sodium | Carbon tetrachloride, carbon dioxide, water |
| Sodium nitrate | Ammonium nitrate and other ammonium salts |
| Sodium peroxide | Ethyl or methyl alcohol, glacial acetic acid, acetic anhydrite, benzaldehyde, carbon disulfide, glycerin, ethylene glycol, ethyl acetate, methyl acetate, furfural |
| Sulfides | Acids |
| Sulfuric acid | Potassium chlorate, potassium perchlorate, potassium permanganate (similar compounds of light metals, such as sodium, lithium) |
| Tellurides | Reducing agents |

| General Incompatibilities by Chemical Groups | |
|---|---|
| Acids | Alkalines, Combustibles, Flammables, Cyanides, Nitrates and Reactive Sulfides |
| Oxidizers | Organics |
| Nitrates | Acids |
| Ammoniated Compounds | Hypochlorites / Bleach |

| | |
|---|---|
| Organics<br>Nitrates | Perchlorates / Oxidizers / Metals |

In addition to chemical compatibility concerns, safe chemical handling requires regular inspections of chemical storage areas and maintenance of stringent inventory control.

**Commonly Asked Questions**

**Q: What are some things to look for when inspecting a chemical storage area?**

**A:** All chemicals should be properly labeled. Chemicals should have their caps secured at all times. No chemicals should be stored on bench tops, fume hoods, on the floor or extending into traffic aisles. Chemical shelves should not be over crowded. Chemicals should not be stored above eye level.

**Q: What should we do if we have old, unlabeled chemicals in house?**

**A:** Hire a hazardous waste contractor to come in and evaluate the situation and properly dispose of the materials.

**Q: What emergency equipment should be located near the chemical storage area?**

**A:** First aid supplies, emergency phone numbers, eyewash and shower facilities, fire extinguishers, spill cleanup supplies and personal protective equipment should be readily available.

**Sources**


- Prudent Practices for Handling Hazardous Chemicals in Laboratories. National Academy Press, Washington D.C. 2011.
- 29 CFR 1910.106, Flammable Liquids.
- 29 CFR 1910.1200 Hazard Communication.
- Fire Protection Guide to Hazardous Materials. National Fire Protection Association, Quincy, MA. 2010.
- CRC Handbook of Chemistry and Physics, 96th edition, CRC Press. 2016.


(Rev. 4/2016)

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Source: Grainger Know How – https://www.grainger.com/know-how

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# Recordkeeping Requirements – Quick Tips

Understand how OSHA's extensive recordkeeping and reporting rules affect your business.

The Occupational Safety and Health Administration's (OSHA's) recordkeeping requirements in place since 1971 (29 Code of Federal Regulations CFR Part 1904) are designed to help employers recognize workplace hazards and correct hazardous conditions by keeping track of work-related injuries and illnesses and their causes. These requirements were updated in 2002, 2015, 2016 and 2019.

**2002 Changes**

The 2002 revision was written in plain language using a question and answer format. OSHA changed the injury and illness reporting forms, eliminating the 200 form and replacing it with the new 300 series of forms: OSHA Form 300 (Log of Work-Related Injuries and

Illnesses), Form 300A (Summary of Work-Related Injuries and Illnesses) and Form 301 (Injury and Illness Incident Report) were introduced. The list of exempted industries was updated to reflect then recent industry data. The revised rule included provisions for recording needlestick and sharps injuries, musculoskeletal disorders (MSDs), standard threshold shift (STS) hearing loss cases and tuberculosis transmission cases. It also clarified the definition of restricted work or light duty making it easier to record those cases; promoted employee awareness and involvement in the process; and addressed employee privacy concerns. Medical treatment and first aid definitions were also modified to simplify recording decisions.

**2015 Changes**

In 2015, OSHA updated the recordkeeping rule to include two key changes. The first change updated the list of industries exempt from the requirement to routinely keep OSHA injury and illness records due to relatively low occupational injury and illness rates.

The second change expanded the list of severe work-related injuries and illnesses that all covered employers must report to OSHA. This revision retained the requirement to report all fatalities within 8-hours and added a requirement to report all inpatient hospitalizations, amputations and loss of an eye within 24-hours to OSHA.

**Reporting Flowchart**




**HOW DO I REPORT?**

1. Call 1-800-321-OSHA (6742) or
2. Call your nearest area office during normal business hours or
3. Report online at: www.osha.gov/report_online

**To Make a Report**

- Call the nearest OSHA office.
- Call the OSHA 24-hour hotline at 1-800-321-6742(OSHA).
- Report online(https://www.osha.gov/pls/ser/serform.html)

**Source**: OSHA

**2016 Changes**

On May 12, 2016, OSHA published the injury and illness reporting rule, known as "Improved Tracking of Workplace Injuries and Illnesses" and it became effective January 1, 2017. This rule does not change the core requirements of the existing recordkeeping rule but required identified establishments to submit their OSHA 300, 300A, or 301 forms to OSHA on an annual basis. The forms required are dependent on the size (number of employees) of each establishment covered:

- Establishments with 250 or more employees in industries covered by the recordkeeping regulation must submit the 300, 300A and all 301 forms by March 2 of the year following data has been recorded.
- Establishments with 20-240 employees in certain high-risk industries must submit the 300A form by March 2 of the year following data has been recorded. Establishments of less than 20 employees do not need to report.

**2019 Changes**

On January 25, 2019 OSHA published a final rule that eliminates the requirement for establishments with 250 or more employees to electronically submit information from OSHA Form 300 and OSHA Form 301 to OSHA each year. It became effective on February 25, 2019. These establishments are still required to electronically submit information from OSHA Form 300A.

OSHA felt this change was necessary to eliminate the possibility of sensitive information found on Forms 300 and 301 such as descriptions of workers' injuries and body parts affected being

disclosed to the public. OSHA felt it will better protect personally identifiable information or data that could be re-identified with a particular worker. OSHA also felt this change will allow it to focus on information gathered from their severe injury reporting initiative along with data collected from Form 300A. This rule also eliminated the requirement to electronically submit an Employer Identification Number (EIN) with the 300A form.

**Scope of Recordkeeping Standard**

Employers are classified by OSHA's injury and illness recordkeeping requirements into one of three groups: employers regularly exempt from OSHA recordkeeping; employers exempted from preparing and maintaining injury and illness records; and employers that are not classified under the prior two groups.

Employers regularly exempt from OSHA recordkeeping includes small businesses with fewer than 11 full- or part-time employees during the previous calendar year and employers classified in low-hazard industries. However, these employers are required to report all inpatient hospitalizations and fatalities as required by 29 CFR 1904.39. In addition, if the employer is notified in writing by OSHA to participate in a statistical survey, the employer must maintain injury and illness records in accordance with 29 CFR 1904.41. Employers who receive a Survey of Occupational Injuries and Illnesses Form from the Bureau of Labor Statistics (BLS) must promptly complete the form and return it (29 CFR 1910.42).

Employers exempted from preparing and maintaining injury and illness records include industries listed in Appendix A of Subpart B of the revised recordkeeping standard.

**OSHA Form 300**

The OSHA Form 300 log is used by each employer's establishment to record and maintain information about employee injuries and illnesses. An establishment, as defined by OSHA, is a single physical location where business is conducted, or where services or industrial operations are performed; the place where employees report for work, operate from or from which they are paid.

The form itself is divided into three general sections: Identity (e.g. name, case number, job title), Descriptive (e.g. date, injury location, description of incident) and Classification (e.g. type of injury, days away from work, days on restriction).

Every injury or illness that meets the recording criteria must be entered as a new case on the OSHA 300 form and maintained as the case conditions change such as the number of days accumulated as transfer, restricted or away from work. If the status of the case changes, then the entry must be changed.  For example, if the injured employee is experiencing days away from work, then dies, the employer must remove (or line out) the days away entry and the day count and check the box for a fatality.

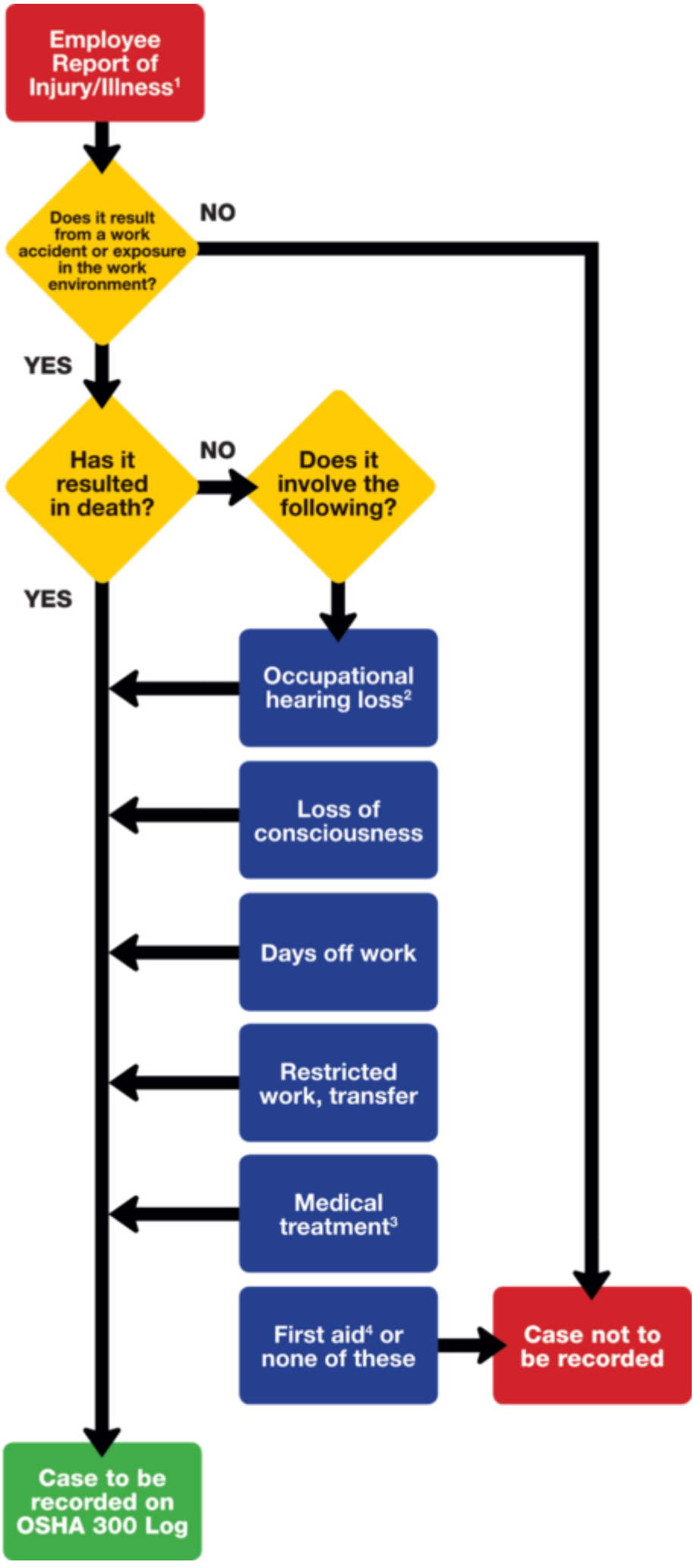
**OSHA Form 301**

If an injury or illness is recordable, a supplementary form (e.g. OSHA Form 301) must be completed. This form provides more information about the case. Such information as the events leading up to the injury or illness, body parts affected, object(s) or substance(s) involved, etc., must be included on this form.

Within seven calendar days after receiving information that a recordable work-related injury or illness has occurred, a 301 incident report or equivalent must be completed.  Equivalent forms may be used if it contains the same information as OSHA Form 301. Examples of equivalent forms may come from: state workers' compensation reports, insurance claim reports or the employer's incident report form.

**Process to Determine if a Case is Recordable**

Employers are responsible for reporting all recordable injuries and illnesses. To help determine if an injury or illness is recordable, refer to the flow chart below. If you are unable to determine if an injury or illness is recordable, call the OSHA area office nearest you.


Employee Report of Injury/Illness[1]
Does it result from a work accident or exposure in the work environment?
NO
YES
Has it resulted in death?
NO
Does it involve the following?
YES
Occupational hearing loss[2]
Loss of consciousness
Days off work
Restricted work, transfer
Medical treatment[3]
First aid[4] or none of these
Case not to be recorded
Case to be recorded on OSHA 300 Log

**Source**: OSHA

**Definitions**

- Employee Report of Injury/Illness: Injury or illness reported assumes the individual reporting the injury or illness is an employee of host employer. If the employee is a temporary employee from a temporary staffing agency, incidents are to be recorded in the OSHA Form 300 log; however, the temporary staffing agency would be responsible for reporting workers' compensation claims to the carrier.
- Occupational Hearing Loss:
    - A change in hearing threshold relative to the baseline audiogram as an average of 10 decibels (dB) or more in either ear at 2000, 3000 and 4000 hertz.
    - An employee's total hearing level of 25dB or more above audiometric zero in both ears at the same hertz levels.
- Medical Treatment: The management and care of a patient to combat disease or disorder. It does not include:
    - Visits to practitioners for observation and/or evaluation only
    - Diagnostic procedures
    - First aid
- First Aid: Treatments that are considered first aid include:
    - The use of nonprescription medication at nonprescription strength
    - Tetanus immunizations
    - Cleaning, flushing or soaking surface wounds
    - Use of wound coverings, butterfly bandages, Steri-Strips tape
    - Hot or cold therapy
    - Use of non-rigid means of support
    - Temporary immobilization devices used to transport victims
    - Drilling of fingernails, toenails or draining fluid from a blister
    - Eye patches
    - Removal of foreign bodies from eye using irrigation or

cotton swab
- Removal of splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means
- Finger guards
- Massage therapy
- Drinking fluids for relief of heat stress

**OSHA Form 300A**

The employer is responsible for preparing an annual summary of injuries and illnesses that occurred during the calendar year. The annual summary, OSHA Form 300A, displays the totals from columns G through M of the OSHA Form 300 log. The summary also displays the calendar year covered, company name and address, annual average number of employees and total hours worked by all employees covered by the OSHA Form 300 log. OSHA Form 300A is a separate form and does not display any of the personal information, shown on the OSHA Form 300 log. OSHA Form 300A also makes it easier to calculate incident rates. The annual summary must be:

- Posted by February 1 and remain posted until April 30th
- Posted in areas where other notices are normally placed
- Certified (signed) by a company executive, stating that the information is correct and complete to the best of the employers ability
- Retained for five years following the calendar year to which they relate

If no cases are recorded during a reporting period, a summary must still be posted. Zeros are entered into all spaces provided on form 300A.

**Sources for More Information**

OSHA FactSheet: Updates to Recordkeeping Rule: An Overview
OSHA FactSheet: Final Rule to Improve Tracking of Workplace Injuries and Illness, May 2016
U.S. Department of Labor
OSHA – Injury Tracking Application (ITA) Landing Page
OSHA – Report a Fatality or Severe Injury

OSHA Injury and Illness Recordkeeping and Reporting Requirements

**Frequently Asked Questions**

**Q: Where can I get a copy of OSHA Form 300, 301 and 300A?**

**A:** Contact the area OSHA office nearest you, or download the information off of the OSHA website.

**Q: What is restricted work activity?**

**A:** When the employee is kept from performing one or more routine (regularly performed at least once per week) functions of his or her job, or when the employee is kept from working a full workday. Production of fewer goods or services is not considered restricted work activity.

**Q: Our company is closed on Saturday and Sunday. Do these still need to be counted as days away?**

**A:** Yes, all calendar days the employee was unable to work including weekend days, holidays, vacation days, etc., must be counted. Cap day count at 180 days. The day the illness or injury occurred is not counted as a day away.

**Q: If an employee is injured and misses the remainder of the work shift, is this a day away?**

**A:** No, injuries and illnesses are not considered lost-time cases until they affect the employee beyond the day of injury or onset of illness.

**Q: How are days away calculated if an employee works a normal shift that is longer than 8 hours?**

**A:** A single workday for record keeping purposes is 12 hours.

**Q: Does the tracking of workplace injuries and illnesses rule require employers to start keeping new records or change how they keep the records?**

**A:** No. The new requirement does not add to or change an employer's obligation to complete, retain, and certify injury and illness

records. It only requires certain employers to electronically submit some of the information from these records to OSHA.

**Q: Are the electronic reporting requirements based on the size of the establishment or the firm?**

**A:** The electronic reporting requirements are based on the size of the establishment. The OSHA injury and illness records are maintained at the establishment level. An establishment is defined as a single physical location where business is conducted or where services or industrial operations are performed. A firm may be comprised of one or more establishments. To determine if you need to provide OSHA with the required data for an establishment, you need to determine the establishment's peak employment during the last calendar year. Each individual employed in the establishment at any time during the calendar year counts as one employee, including full-time, part-time, seasonal, and temporary workers.

*The information contained in this article is intended for general information purposes only and is based on information available as of the initial date of publication. No representation is made that the information or references are complete or remain current. This article is not a substitute for review of current applicable government regulations, industry standards, or other standards specific to your business and/or activities and should not be construed as legal advice or opinion. Readers with specific questions should refer to the applicable standards or consult with an attorney.*

Source: Grainger Know How – https://www.grainger.com/know-how

# High Wind Dangers (Construction) Meeting Kit – Spanish

## QUÉ ESTÁ EN RIESGO

**PELIGROS DEL VIENTO FUERTE**

Cuando se trabaja en el exterior, a veces se está a merced del clima. La lluvia, la nieve, el hielo y el calor pueden desempeñar un papel importante en la capacidad de trabajar al aire libre, pero un peligro del que se habla menos es el de los vientos fuertes. Es importante saber también que los vientos fuertes pueden suponer una amenaza y son un peligro para la seguridad.

## CUÁL ES EL PELIGRO

**PELIGROS DE LOS VIENTOS FUERTES PARA LOS TRABAJADORES**

El viento fuerte es un viento de tal velocidad que uno o más de los siguientes peligros estarían presentes:

- El viento podría arrastrar a un empleado desde un lugar elevado.
- El viento podría hacer que un empleado o el equipo que manipula el material perdiera el control del mismo.
- El viento podría exponer a un empleado a otros peligros no controlados por la norma en cuestión.

Los vientos que superan las 40 millas por hora se consideran vientos fuertes. Si el trabajo implica la manipulación de materiales, los vientos fuertes pueden considerarse a 30 millas por hora, a menos que el empleador tome precauciones para proteger a los empleados de los peligros del viento.

**PELIGROS CUANDO SE TRABAJA CON VIENTOS FUERTES**

- Posibilidad de lesiones cuando el viento mueve objetos.
- Lesiones en los ojos por el polvo o los escombros en el aire.
- Esguinces o torceduras cuando el viento obliga a los trabajadores a caer, cuando los trabajadores intentan alcanzar un objeto.
- Posibilidad de sufrir lesiones por la rotura de cristales como consecuencia de objetos que golpean una ventana o una puerta que se balancea con fuerza.
- Exposición de la piel, especialmente en el frío.
- Cargas, equipos o vehículos que se caen, se precipitan o vuelcan.
- Rotura de ramas o desarraigo de árboles.
- Derrumbe de edificios, tejados, andamios, vallas, torres, etc.
- Rotura de líneas eléctricas, con riesgo de electrocución y pérdida de electricidad.
- Reducción de la visibilidad (debido al polvo, la nieve, etc.)
- Propagación del fuego por chispas o equipos.
- Golpes por objetos que se desplazan por el aire.
- Resbalones, tropiezos y caídas debidos a que los trabajadores reaccionan ante la caída de un casco u objeto debido a que el viento les arrebata estos elementos.
- Caída de cargas al completar los ascensores con presencia de viento.
- Caída de objetos desde superficies elevadas.
- Vuelco de un camión volquete.

# COMO PROTEGERSE

**MEJORES PRÁCTICAS PARA ELIMINAR LOS PELIGROS Y LAS LESIONES RELACIONADAS CON LOS VIENTOS FUERTES**

**LO QUE DEBE HACER**

- Elimine las tareas o detenga el trabajo cuando éste se vuelva demasiado peligroso debido a los vientos fuertes.
- Asegure todos los elementos, por ejemplo, introduciéndolos

en el interior o utilizando pesos, cuerdas, cadenas o estacas.
- Asegure los pestillos, puertas, ventanas, andamios, escaleras, etc.
- Tenga en cuenta que al transportar o levantar objetos grandes, como madera contrachapada, estos objetos pueden actuar como una vela.
- Tenga en cuenta que las estructuras u objetos pueden moverse repentinamente.
- Resguárdese. Permanezca en el interior. Cuando esté en el interior, aléjese de las paredes y ventanas exteriores siempre que sea posible.
- Lleve a las mascotas o al ganado para que se refugien.
- Si está conduciendo y no puede refugiarse en un edificio, permanezca en su vehículo. Si es posible, diríjase a una zona en la que sea menos probable que le alcancen los árboles o las líneas eléctricas que caen.
- Manténgase alejado de los vehículos altos, como los camiones de transporte, los autobuses y los vehículos que arrastran remolques. Las fuertes ráfagas de viento pueden volcar estos vehículos.
- Utilice edificios o vehículos para ayudar a bloquear el viento.
- Lleve protección contra caídas y asegúrese correctamente cuando trabaje en altura.
- Utilice gafas de seguridad, según corresponda.

**LO QUE NO DEBE HACER**

- No realice operaciones de elevación, ni utilice grúas, ni realice actividades similares cuando no sea seguro hacerlo.
- No trabaje en altura cuando se prevean vientos fuertes.
- No alcance o trate de agarrar un objeto, como el casco, si éste se desprende.
- No se refugie en grandes áreas abiertas dentro de edificios, como gimnasios o centros comerciales.

**RESULTADOS FINALES**

En las obras de construcción, es fundamental que planifique

previamente su jornada y sus tareas para garantizar la seguridad. Descubrirá que el tiempo puede desempeñar un papel importante en las tareas que podrá realizar ese día y en las que tendrá que esperar. Cuando vaya a haber vientos fuertes, planifique el trabajo en consecuencia. Evite ciertas tareas durante los vientos fuertes y utilice las medidas de seguridad que le han enseñado para garantizar su seguridad y la de sus compañeros de trabajo.

## CONCLUSIÓN

La planificación previa de las tareas es fundamental para garantizar un comienzo sólido del trabajo seguro en una obra. Cuando vaya a haber vientos fuertes, planifique el trabajo en consecuencia. Evite ciertas tareas durante los eventos de vientos fuertes, así como implementar protecciones adicionales para garantizar la seguridad durante las tareas normales del trabajo.

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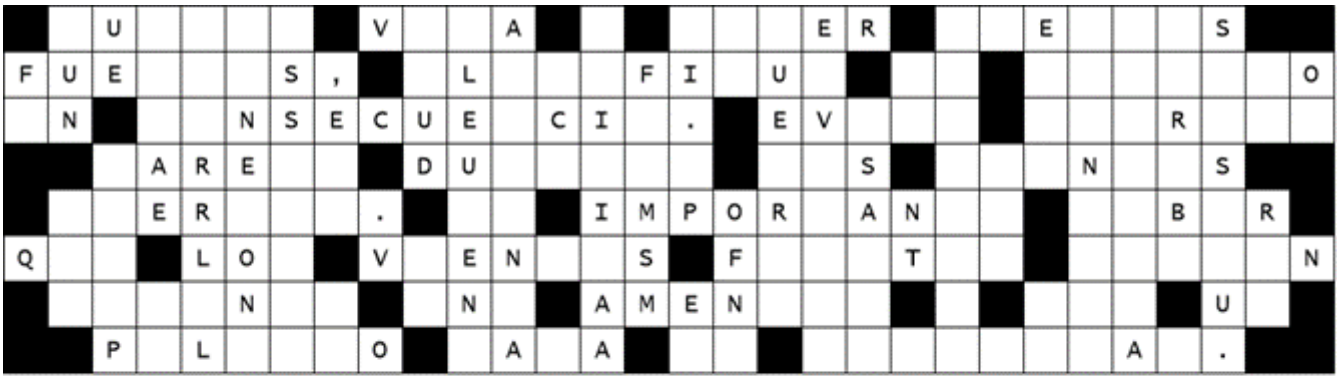
# High Wind Dangers (Construction) Fallen Phrases – Spanish





**Respuesta:** Cuando vaya a haber vientos fuertes, planifique el trabajo en consecuencia. Evite ciertas tareas durante los vientos fuertes. Es importante saber que los vientos fuertes pueden suponer una amenaza y son un peligro para la seguridad.

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# High Wind Dangers (Construction) Word Search – Spanish

# PELIGROS DEL VIENTO FUERTE (CONSTRUCCIÓN)

## SOPA DE LETRAS

V F U E R T E V W J B F F L
A F U T N G Y X V S L M E L
I P R E C A U C I O N E S U
R Y K C Z E U L E N T O J V
E L E W Z T E C H O Z E W I
G C A L O R B B T F H F U A
N X V L T S A F E T Y N O W
I L F S D P E L I G R O S B
E W C M U L Q R D M S A P A
V K V I E N T O U N Y L Y B
E S H A S C C O L A P S O H
O Y W N D C A H I E L O S P
J I X I O T I E M P O N L U
S C F Q S A A N D A M I O C

Safety Now
Viento
Peligros
Fuerte
Colapso
Precauciones
Lento
Tiempo
Lluvia
Nieve
Hielo
Calor
Aire
Andamio
Techo