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TRU-Net Noise Survey for Workers (Apprenticeship & Journey-level Trainees) Survey Results

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TRU-Net Noise Survey for Workers (Apprenticeship & Journey-level Trainees) Survey Results – All Responses

Project Summary

According to NIOSH, hearing loss is one of the most common work-related illnesses in the U.S. construction industry.[1] Research has shown that almost all construction workers are frequently exposed to distracting or uncomfortable levels of noise on the job. Exposure to loud noise may cause a variety of health problems including noise-induced hearing loss and cardiovascular disease.[2]

Between 2015 and 2017, CPWR-The Center for Construction Research and Training conducted two surveys as part of its Trainers and Researchers United Network (TRU-Net) to learn about trainers' and trainees' awareness of noise hazards and hearing loss prevention practices, the types of related training provided, and barriers to use of controls and safer work practices. The trainer survey, conducted in 2015, identified a need for more noise-focused training materials for use in classroom and hands-on training and new strategies to improve retention of training materials.[3]

The worker survey, conducted between October 2016 and February 2017, was designed as a follow-up to the trainer survey. For this survey, CPWR asked unions with training classes scheduled during that time period if they would be willing to have their training staff administer the survey to trainees. Forty-nine trainers from seven unions agreed to participate in the worker survey. These trainers requested 5,674 surveys, and distributed 4,976 of the surveys to trainees. A total of 4,195 trainees completed and returned the survey, an 84% response rate. The trainers reported that the remaining, 698 surveys requested were not used due to reasons such as a class was cancelled or fewer trainees were in attendance than anticipated.

The following report is broken down into two sections:

- Section 1: Summary Key Findings – contains highlights from the survey results
- Section 2: All Survey Results – contains the results for each survey question and related charts. Selected charts are referenced in Section 1.

The results of the worker survey supported the findings from the trainer survey. Based on these findings, CPWR's research to practice (r2p) and training staff developed the Construction Noise and Hearing Loss Prevention Training Program. This comprehensive program includes modules and exercises that can be used on their own or as part of OSHA training programs.

If you have any questions, please contact MK Fletcher, r2p Research Analyst, at mfletcher@cpwr.com or 301-495-8533, or Eileen Betit, r2p Director, at ebetit@cpwr.com or 301-495-8506.

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[1] CPWR. (2018). The Construction Chart Book, 6th ed. p. 50. Retrieved from https://www.cpwr.com/chart-book-6th-edition-occupational-diseases-noise-induced-hearing-loss-construction-and-other

[2] CPWR. (2018). The Construction Chart Book, 6th ed. p. 32, chart 32e. Retrieved from https://www.cpwr.com/chart-book-6th-edition-hazards-and-exposures-onet-database-and-occupational-exposures-construction

[3] CPWR. (2015). Noise Survey Results of Construction Safety and Health Trainers. Retrieved from https://www.cpwr.com/sites/default/files/Noise_Trainer_Survey_Highlights%202015.pdf

Section 1: Summary of Key Findings

NOTE: As you review the results, please keep in mind that the survey was only administered to union members who participated in training classes held between October 2016 and February 2017. As such, the sample may not be representative of all union construction workers; however, the results still provide important insights into workers' awareness of noise hazards, related training needs, and barriers to use of hearing protection. Additionally, due to rounding, all numbers in the summary of key findings and charts may not equal 100%.

Demographics (Charts 1 – 3)

The majority of the workers who participated in the survey had worked in the construction industry for less than five years, and were in their apprenticeship. (Charts 1 & 2)

- Sixty-five (65%) of participants had less than five years in the industry and 35% had 5 or more years of experience in construction. (Chart 1)
- Eighty-five percent (85%) of those surveyed were apprentices: 29% 1st year, 23% 2nd year, 18% 3rd year, 10% 4th year, and 5% 5th year. Of the remaining participants, 14% were journey-level workers and 1% listed other (e.g., 6th year apprentice, foreman, instructor, journeyperson's assistant, owner/operator, business agent). (Chart 2)

Noise and Hearing Loss Prevention Related Training (Charts 4 – 8)

Roughly two-thirds (69%) of those surveyed had received training on how to prevent hearing loss, and the remaining 31% either were not sure or had not received training. (Chart 4)

- When those who said they had received training were asked who had provided it, 42% said that both their employer and union had provided the training, 36% said the union only, 16% said their employer only, 3% cited another source and 3% were not sure. (Chart 5)
- This training was provided most often in a classroom (46%), followed by both in-class and hands-on (40%), and as part of the hands-on portion of skills training (9%). Five percent (5%) were not sure. (Chart 6)
- When those who said they had received training were provided a list of common noise and hearing loss prevention training topics and asked to select those covered during the training they had received the top responses were OSHA standards and the permissible exposure limit (PEL) (90%) and how to wear hearing protection (76%). The topics selected least often were engineering controls (24%) and administrative controls (18%). (Chart 7)
- Thirty-eight percent (38%) of workers said that they need more information and training or a refresher to recognize if when a noise is hazardous. (Chart 8)

Noise Levels on the Jobsite (Charts 9 – 13)

A rule of thumb is that if you have to shout to be heard by someone who is an arms-length away you are being exposed to a hazardous noise level. One out of four of the workers surveyed (26%) said they have to shout to be heard at work often or all of the time and another 43% said they have to shout sometimes. (Chart 9)

- Constant noise from all of the activity on the worksite was cited as the main source of noise by 32% of workers, followed by noise from the equipment they use (31%), and noise from equipment nearby (26%). (Chart 10)
- The three noisiest tasks that workers said they routinely perform were cutting/sawing, grinding/polishing, and drilling (Chart 11), and the equipment used when performing these tasks included grinders, hammer drills, generators, chop saws, and compressors. (Chart 12)
- More than half (61%) of survey participants said they spend four hours or more a day using the "noisiest" equipment. (Chart 13)

Attitudes and Barriers

- Survey participants were given a list a statements about noise, hearing protection, and hearing loss and asked the degree to which they agree or disagree with each statement. (Chart 19) In response to statements related to noise levels at work, they agreed that their work would be less stressful and they would feel better if their workplaces were less noisy.
- They also agreed that they could not reduce noise at work. Given those responses, it is not surprising that more workers agree/strongly disagreed or they disagreed or strongly disagreed with the following related statements:

Statement	**Disagree/ Strongly Disagree**	**Agree/ Strongly Agree**
It is difficult to make equipment quieter.		**57%**
I ***cannot*** reduce noise at work.		**46%**
My work would be less stressful if it was quieter.		**42%**
Listening to loud noise at work does ***not*** affect hearing in old age.	**80%**	
I like it when it is noisy.	**72%**	
Noise only affects hearing in people who have sensitive ears.	**71%**	
My hearing will ***not*** be damaged by noise at work.	**65%**	
It would make no difference to my hearing if it was quieter at work.	**61%**	
I work better if it is noisy.	**60%**	
The noise at work does ***not*** bother me.	**47%**	

Use of a Phone Application to Measure Noise Levels – a sound level meter app (Charts 14 – 15)

Roughly 3 out of 4 (72%) of all survey participants said they were not aware of smart phone apps that can be used to measure noise levels. (Chart 14)

- When asked their attitude towards using such an app, roughly a fourth (26%) saying they have no interest in using a noise app, 25% said they would be willing to use one to gather noise-level information for a research study, and 24% said they would use one to make sure they're not exposed to dangerous noise levels at work. Twenty-one percent (21%) said they were not permitted to use smart phones on the job site, and the remaining 4% said they do not have a smart phone. (Chart 15)

Preventing Hearing Loss (Charts 16 – 19)

Less than half (44%) of survey participants said they wear hearing protection always, almost always, or most of the time when they work around noise. (Chart 16)

- Twenty-five percent (25%) reported never or almost never wearing hearing protection around noise and 31% only wore hearing protection some of the time. (Chart 16)
- The primary reasons given by those who do not wear hearing protection always or almost always were they: 1) cannot hear things they need to hear (49%); 2) cannot always find hearing protection (30%); and 3) hearing protection is not provided (29%). (Chart 17) However, the most common action that survey participants said that they have seen employers do on jobsites to protect workers from hearing loss was providing ear plugs (84%). (Chart 18).
- In response to statements related to ways to prevent hearing loss, survey participants strongly agreed that they know how to use ear muffs or ear plugs, and also were in strong agreement with the statement that "it is difficult to make equipment quieter." (Chart 19)

Hearing Testing and Hearing Loss (Charts 20 – 23)

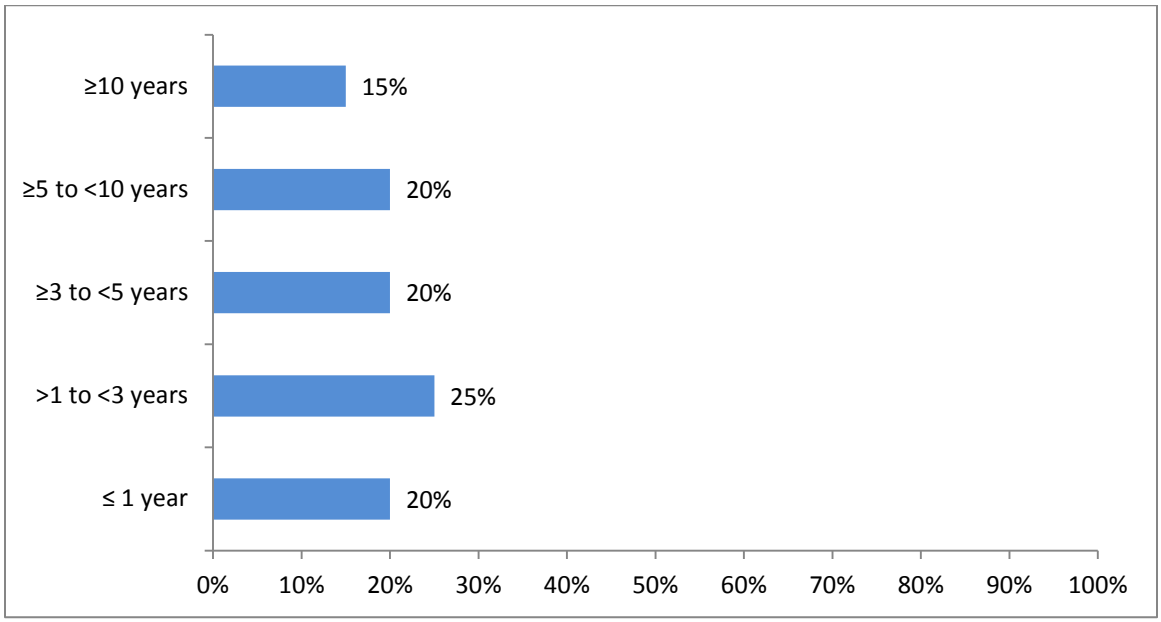
Roughly 1 out of 4 (28%) of the survey participants reported having had their hearing tested since they began work in the construction industry. (Chart 20) Almost the same percentage (29%) said they suffer from some level of hearing loss. (Chart 22)

- Of those whose hearing had been tested, just under half (46%) had the test because it was required by an employer, 20% because a doctor recommended the test, and 6% because they were having problems hearing. The remaining 28% gave other reasons including military checkups, routine/annual screenings, DMV/driver's license, DOT physical, school requirement, union screening, and personal choice. (Chart 21)
- In addition to asking survey participants to self-assess their hearing level, they were asked if they had been bothered by ringing, roaring, or buzzing in their ears or head that lasted for 5 minutes or more during the past twelve months. These symptoms of tinnitus, an early sign of hearing damage, were reported by 22% of the survey participants. (Chart 23)

Section 2: All Survey Results

Demographics (Charts 1 – 3)

Chart 1: How long have you worked in the construction industry?



Note: The ranges chosen for chart 1 highlights the number of participants that had either one year or less of experience in the construction industry or more than one year, but less than three years of experience.

Chart 2: Are you currently an apprentice or a journeyperson?

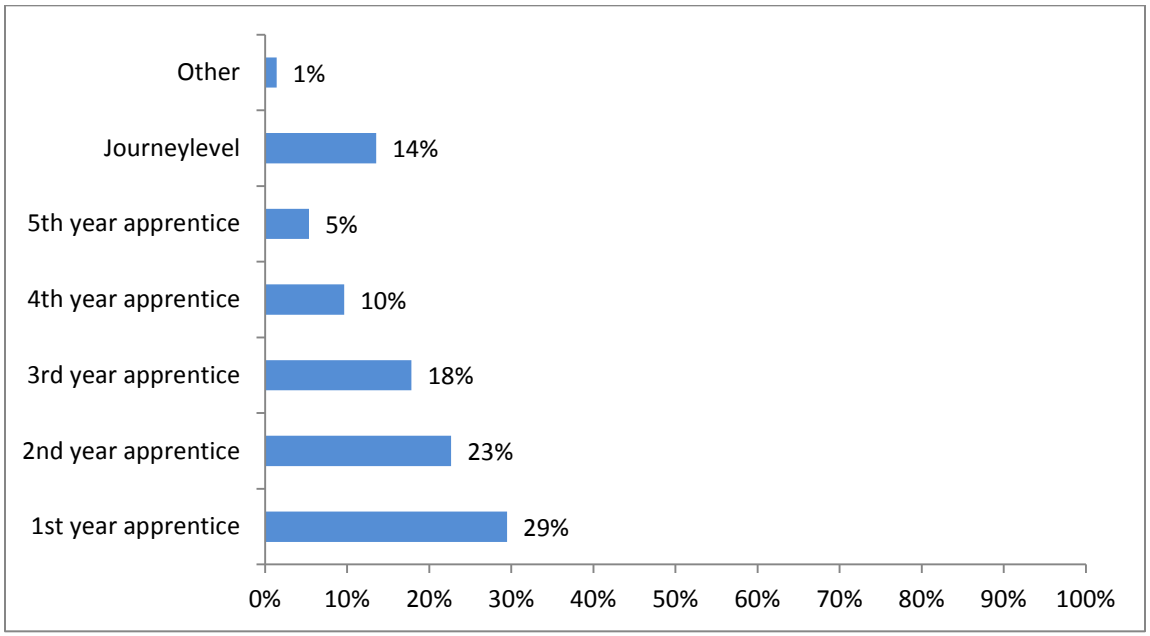
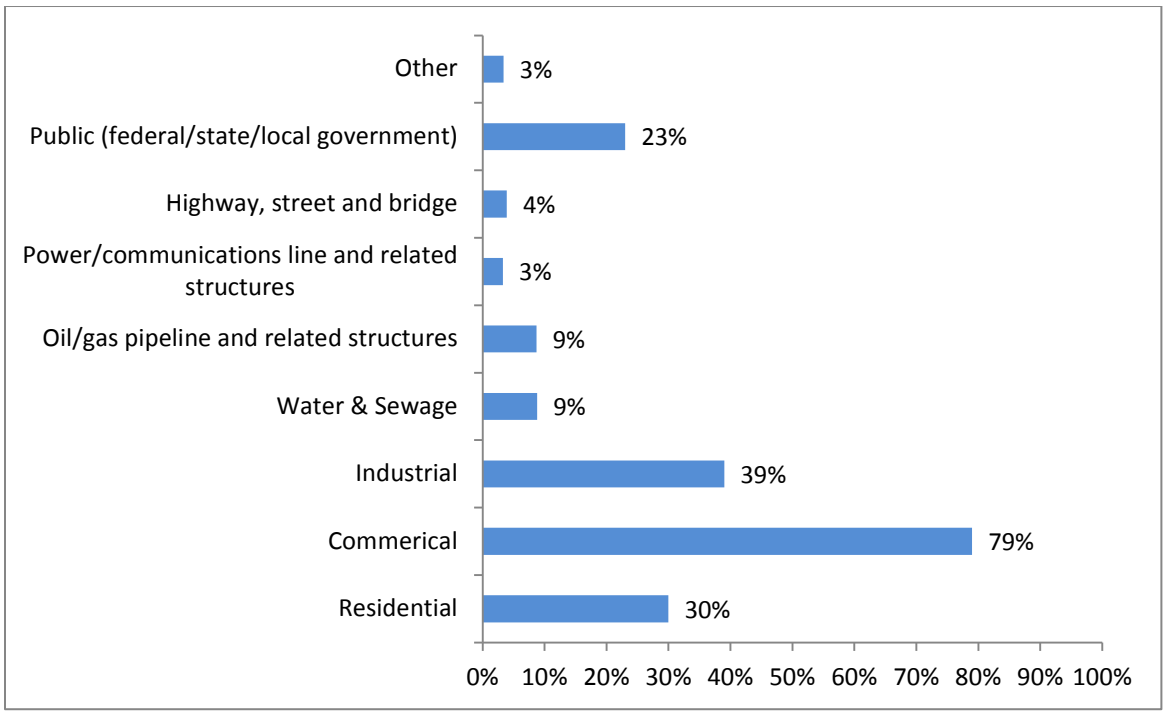


Chart 3: What type of construction projects have you worked on in the last twelve months? (Note: Participants were asked to select all that applied; therefore, the total percentage does not equal 100.)



Noise and Hearing Loss Prevention Related Training (Charts 4 – 8)

Chart 4: Have you received training on how to prevent noise-induced hearing loss?

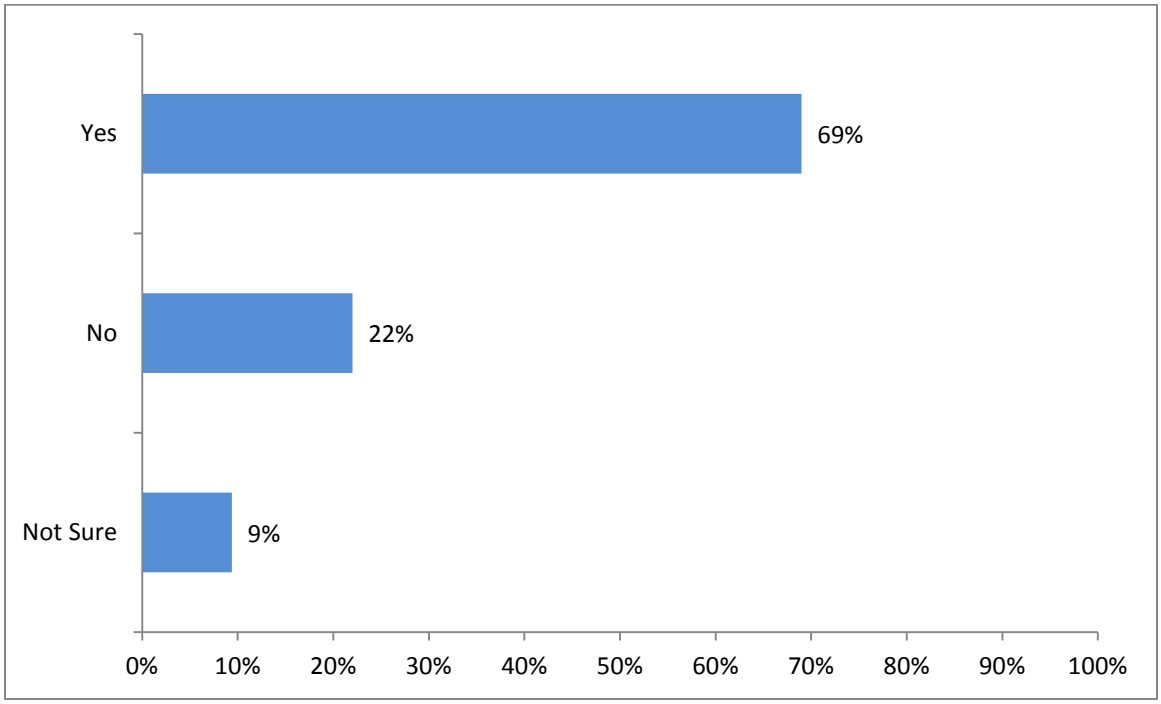


Chart 5: If you answered yes, you have received training - Who provided the training on how to prevent noise-induced hearing loss?

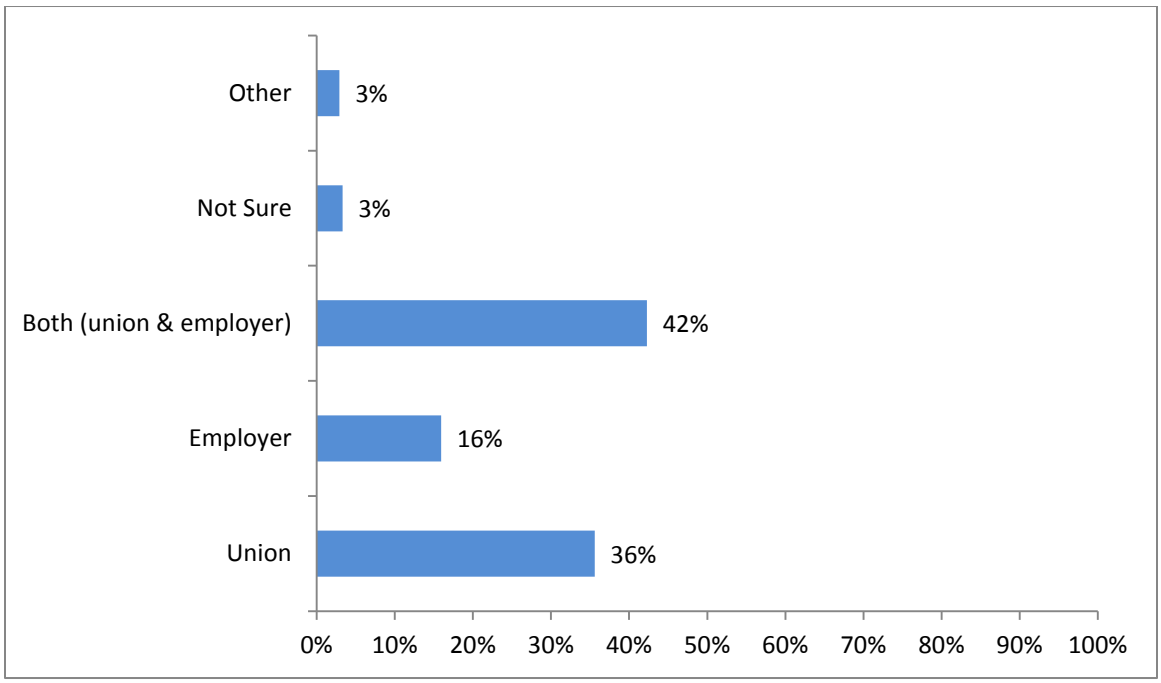


Chart 6: If you answered yes, you have received training - Where was the training you received on how to prevent noise-induced hearing loss conducted?

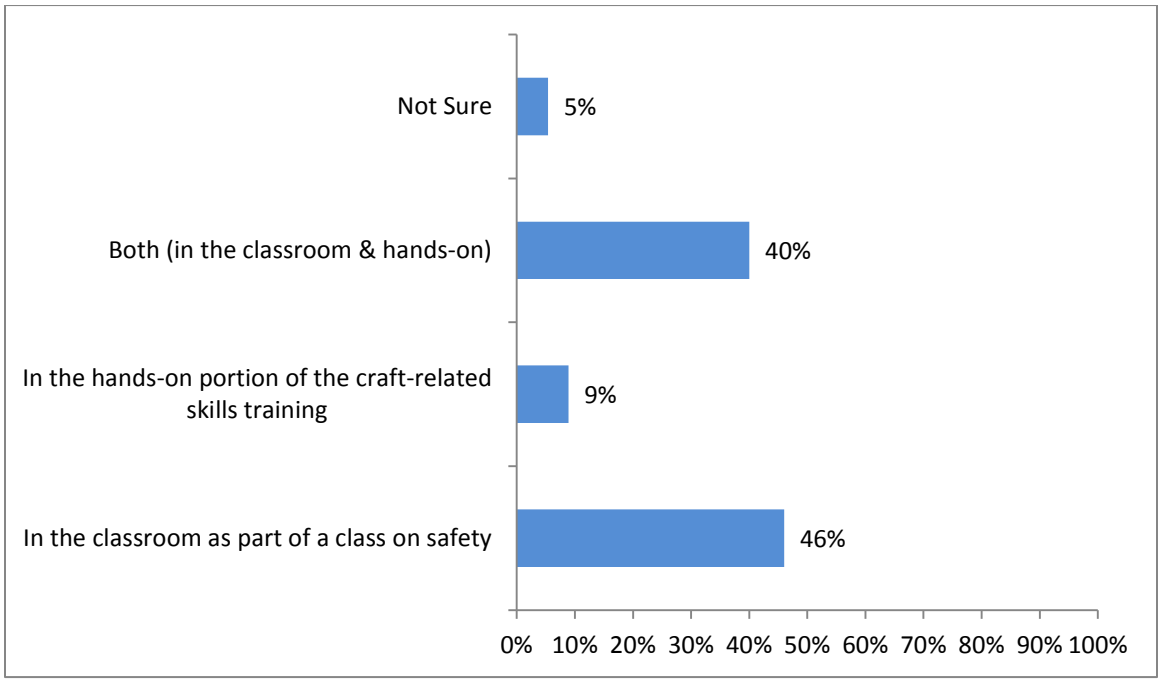


Chart 7: If you answered yes, you have received training - Please check all topics covered during your training on how to prevent noise-induced hearing loss: (Note: Participants were asked to select all that applied; therefore, the total percentage does not equal 100.)

Noise-Related Topics Covered	% of Workers who received training	% of Trainers who provided training[‡]
OSHA standards & PEL	90.0	86.2
How to wear hearing protection	75.7	86.2
How to determine when hearing protection is needed	69.7	77.1
How to select hearing protection	66.6	77.1
The limitations of hearing protection	43.1	53.2
How to know when to replace hearing protection	45.0	42.6
Sources of noise	65.5	82.4
Risks for & signs of hearing loss	65.0	68.6
Basics of sound	57.3	46.2
Engineering Controls*	23.9	36.7
Benefits of low noise equipment	32.2	31.9
How to identify low noise equipment	27.8	22.3
Administrative controls*	18.3	26.1
Other	2.2	1.6

* Survey participants were asked to provide examples of engineering and administrative controls. Very few of those that responded provided accurate control examples. Only 39% of those that responded to this question provided an accurate example of an engineering control and only 26% provided an accurate example of an administrative control. Around half (52%) listed earplugs or earmuffs as an engineering or administrative control.

[‡] These results are from the trainer survey. See the full report, Noise Survey Results of Construction Safety and Health Trainers, at https://www.cpwr.com/sites/default/files/Noise_Trainer_Survey_Highlights%202015.pdf

Chart 8: If you answered yes, you have received training - For the following questions, please indicate which response best represents your answer:

	Yes, the training provided me with all information needed.	Yes, but I could use a refresher.	No, I need more information and training.
Do you feel that you have all the information you need to recognize when a noise is hazardous?	62.5%	29.5%	8.0%
Do you feel that you have all of the information you need on how to ask for the noise to be reduced?	56.5%	29.7%	13.9%
Do you feel that you have all the information you need on how to obtain PPE?	77.7%	17.7%	4.6%

Noise Levels on the Jobsite (Charts 9 – 13)

Chart 9: At work, how often do you have to shout to be heard by someone who is working beside you (an arm's length away)?

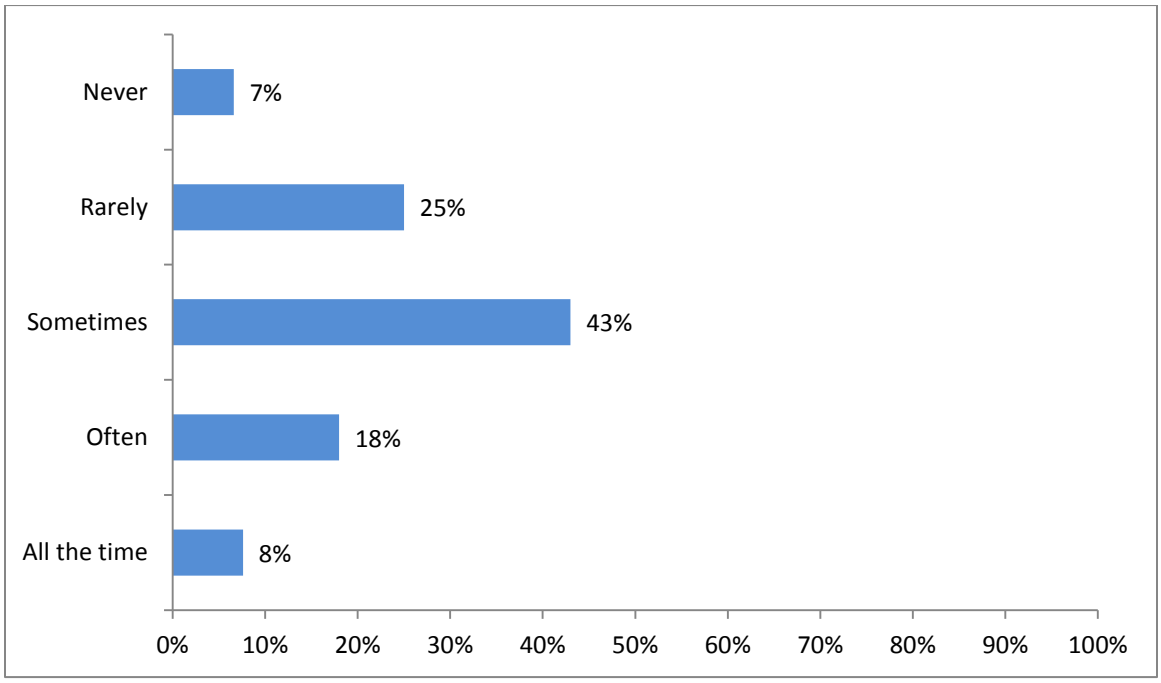


Chart 10: Which of the following is the main source of the hazardous noise that you are exposed to **most** often: (Please note: "a hazardous noise" was defined as a noise so loud that a person would have to raise their voice to be heard when speaking to someone standing an arm's length away from them.)

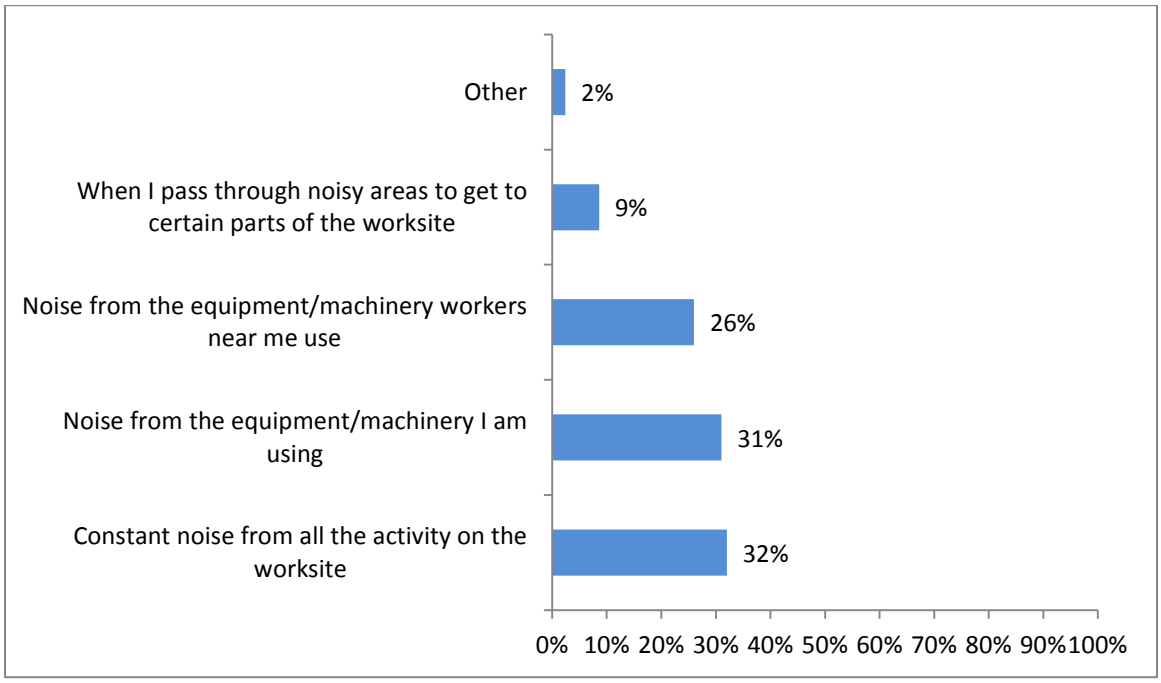


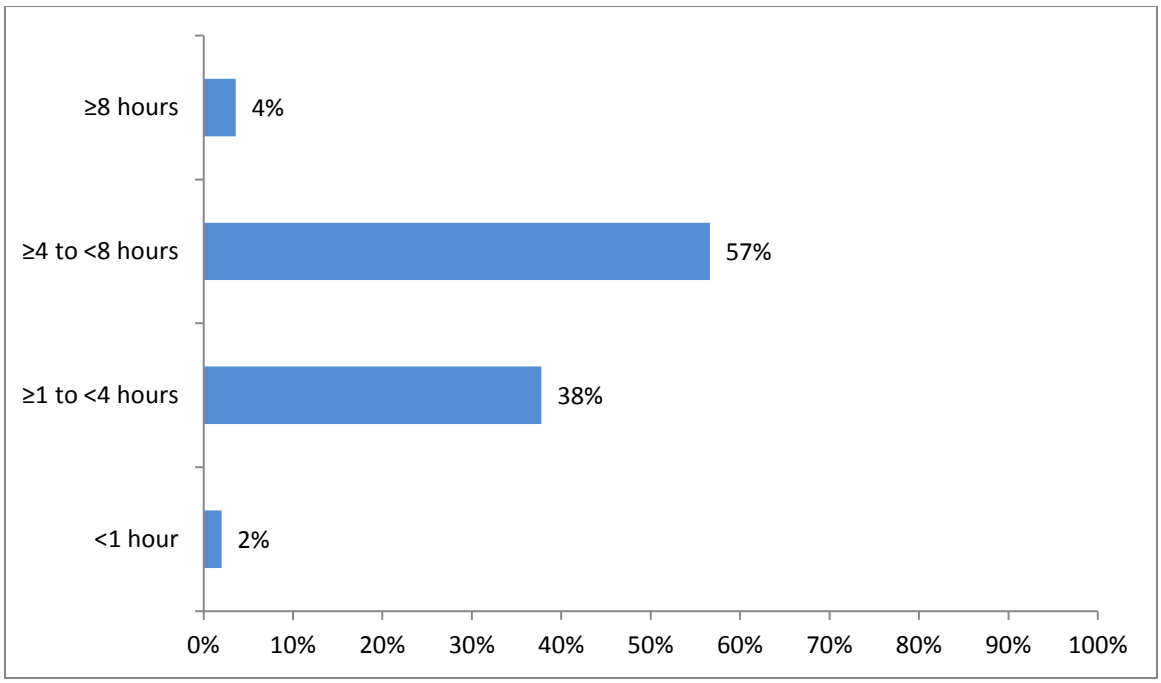
Chart 11: Please select the **three** noisiest tasks that you routinely perform on the jobsite:

Top 3 noisiest tasks for workers
Cutting/sawing
Grinding/polishing
Drilling

Chart 12: Please select the equipment you use to do the noisiest tasks: (the noisiest tasks were based on their response to the previous question)

Top 5 noisiest equipment for workers
Grinders
Hammer drills
Generators
Chop saws
Compressors

Chart 13: Approximately how much time per day do you spend using the equipment you selected in the previous question?



Use of a Phone Application to Measure Noise Levels – a sound level meter app (Charts 14 – 15)

Chart 14: Are you aware that there are smart phone noise apps (a noise meter that can be accessed through a smart phone) to measure noise levels?

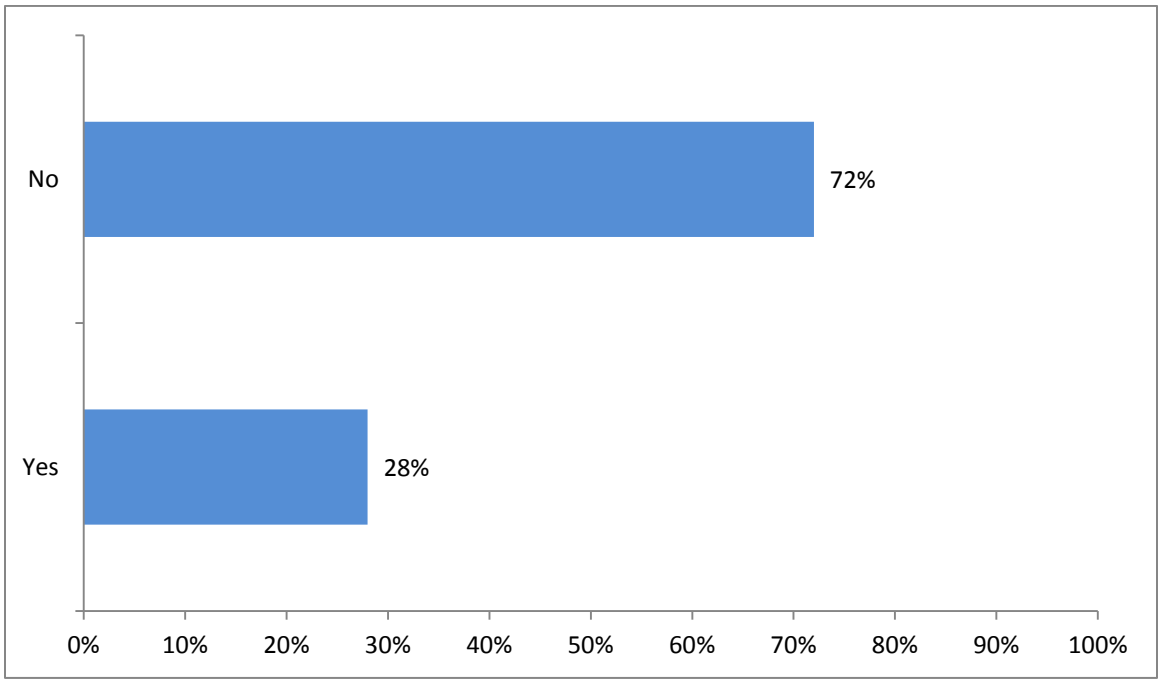
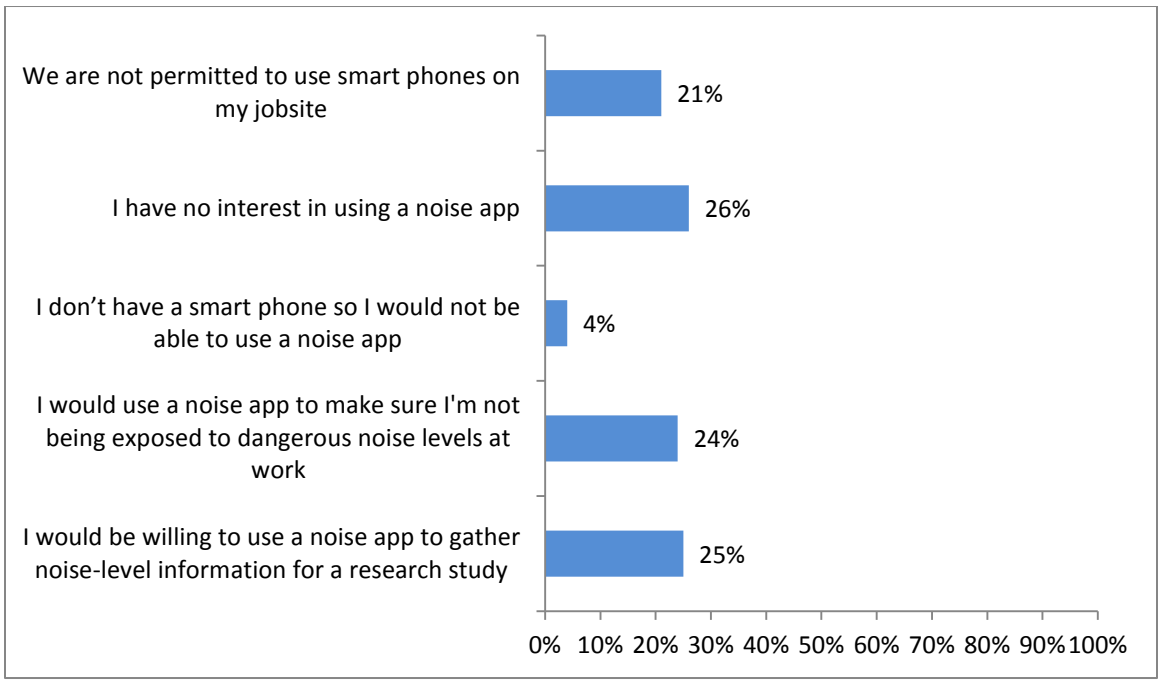


Chart 15: Please select the response that closely matches your attitude toward using a noise app to measure noise levels on your jobsite:



Preventing Hearing Loss (Charts 16 – 19)

Chart 16: How often do you wear hearing protection when you work around noise?

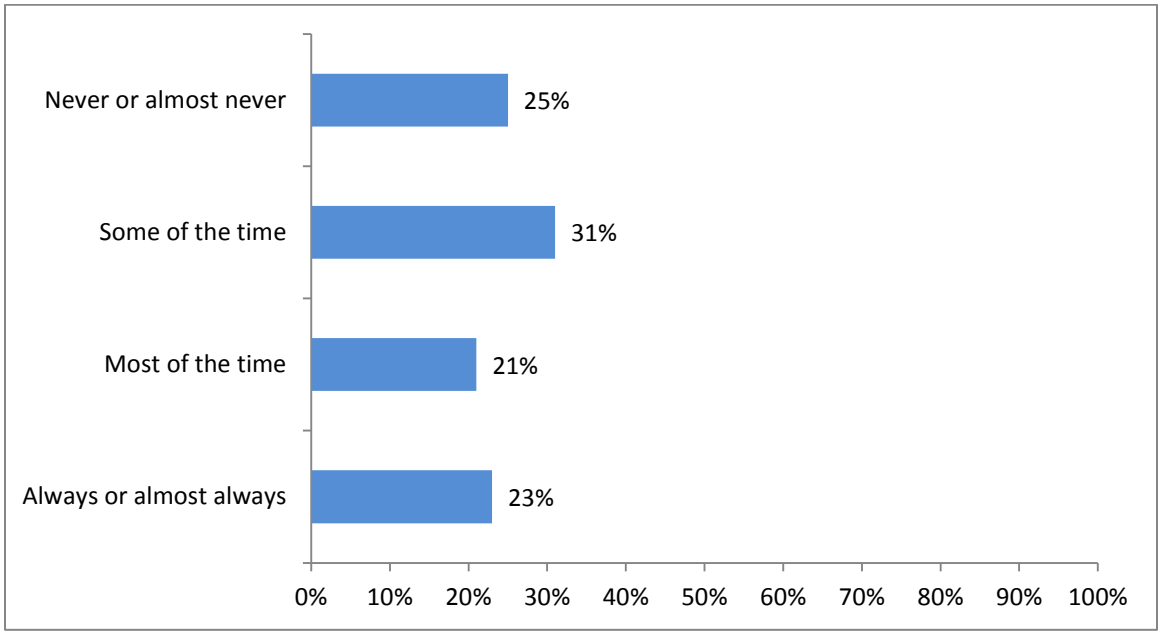


Chart 17: If you do not **always or almost always** wear hearing protection when working in noise, what are the **top three** reasons? (Note: Participants were asked to select their three top answer choices; therefore, the total percentage does not equal 100.)

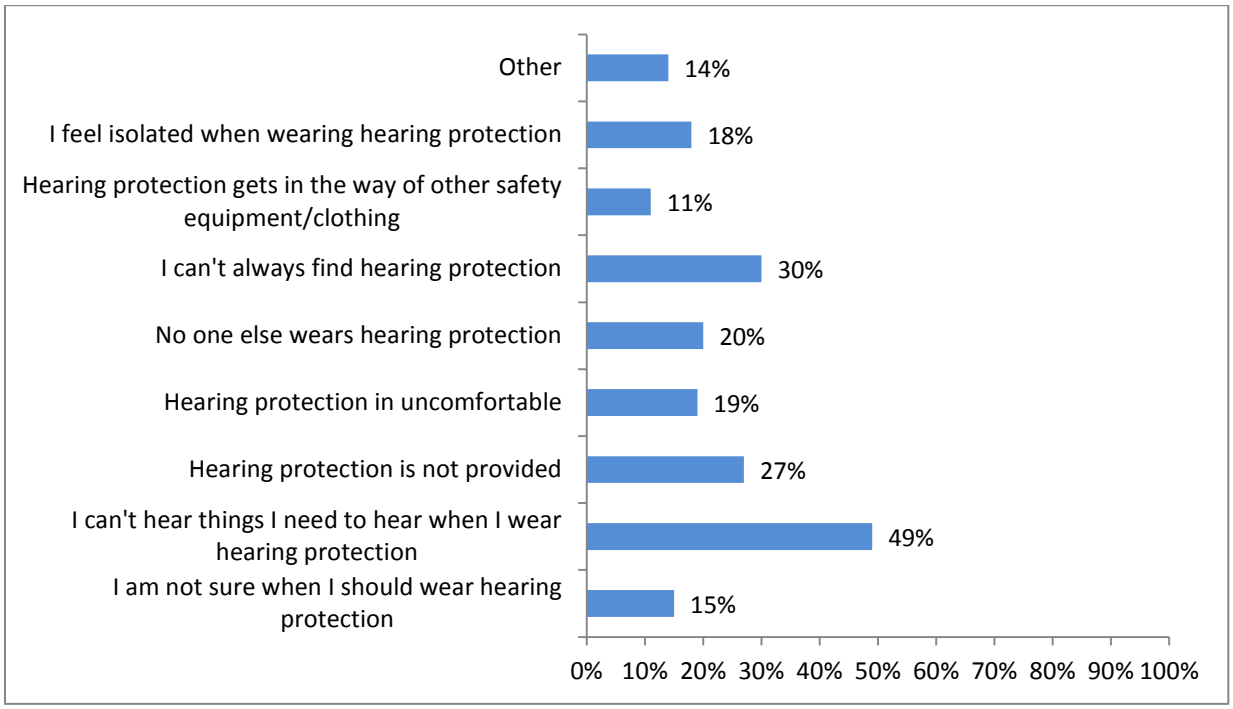


Chart 18: Please select all of the actions you have seen employers do on jobsites during the last twelve months to protect you and other workers from hearing loss: (Note: Participants were asked to select all that applied; therefore, the total percentage does not equal 100.)

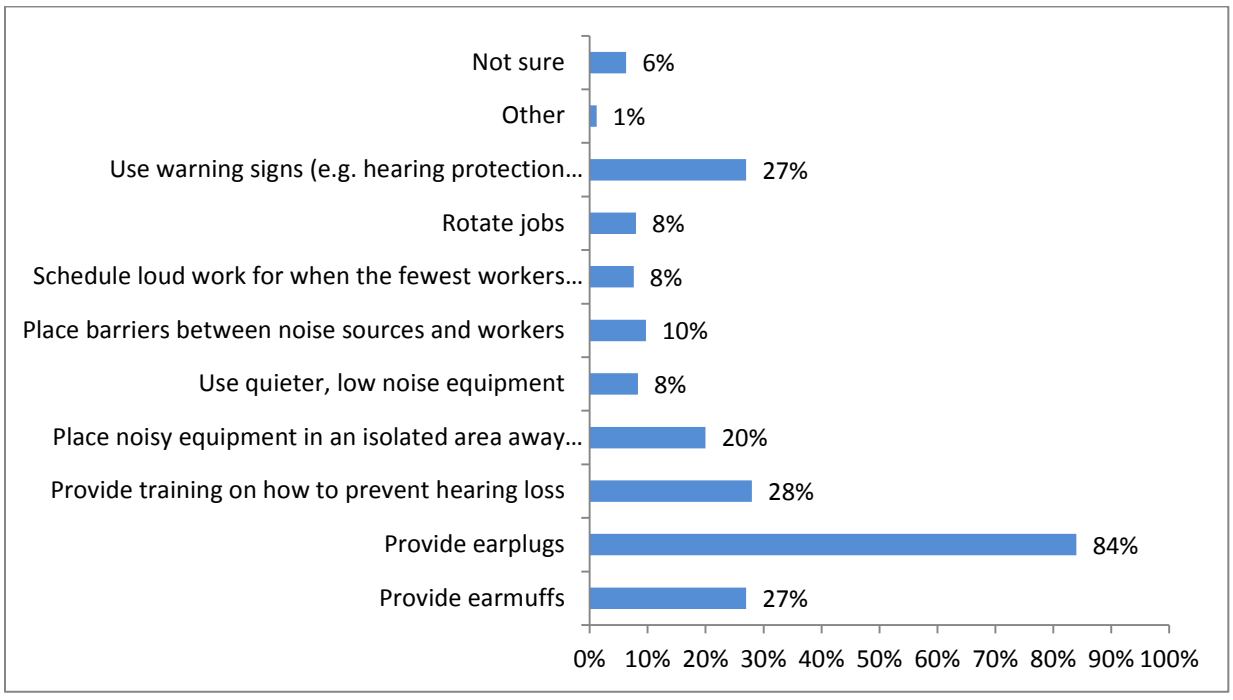


Chart 19: For the following, please indicate how strongly you agree or disagree with each statement.

Statements	**Primary response**
My hearing will ***not*** be damaged by noise at work.	Strongly disagree
The noise at work does ***not*** bother me.	Disagree
My work would be less stressful if it was quieter.	Agree
I do ***not*** have time to do anything about the noise at work.	Disagree
Earmuffs or earplugs would stop me from hearing what I want to hear.	Neither agree or disagree
I would feel better if my workplace was less noisy.	Agree
I ***cannot*** reduce noise at work.	Agree
Earmuffs and earplugs are uncomfortable.	Neither agree or disagree
I like it when it is noisy.	Strongly disagree
I am ***not*** sure that I can use earmuffs or earplugs correctly.	Strongly disagree
It would make no difference to my hearing if it was quieter at work.	Strongly disagree
Listening to loud noise at work does ***not*** affect hearing in old age.	Strongly disagree
I know how to use my ear muffs or ear plugs.	Strongly agree
It is difficult to make equipment quieter.	Strongly agree
My co-workers don't worry about noise.	Neither agree or disagree
I work better if it is noisy.	Strongly disagree
Noise stops me from being able to think.	Neither agree or disagree
Noise has bad effects on my health (besides loss of hearing.)	Neither agree or disagree
Noise only affects hearing in people who have sensitive ears.	Strongly disagree

Hearing Testing & Hearing Loss (Charts 20 – 23)

Chart 20: Have you had your hearing tested since you began working in the construction industry?

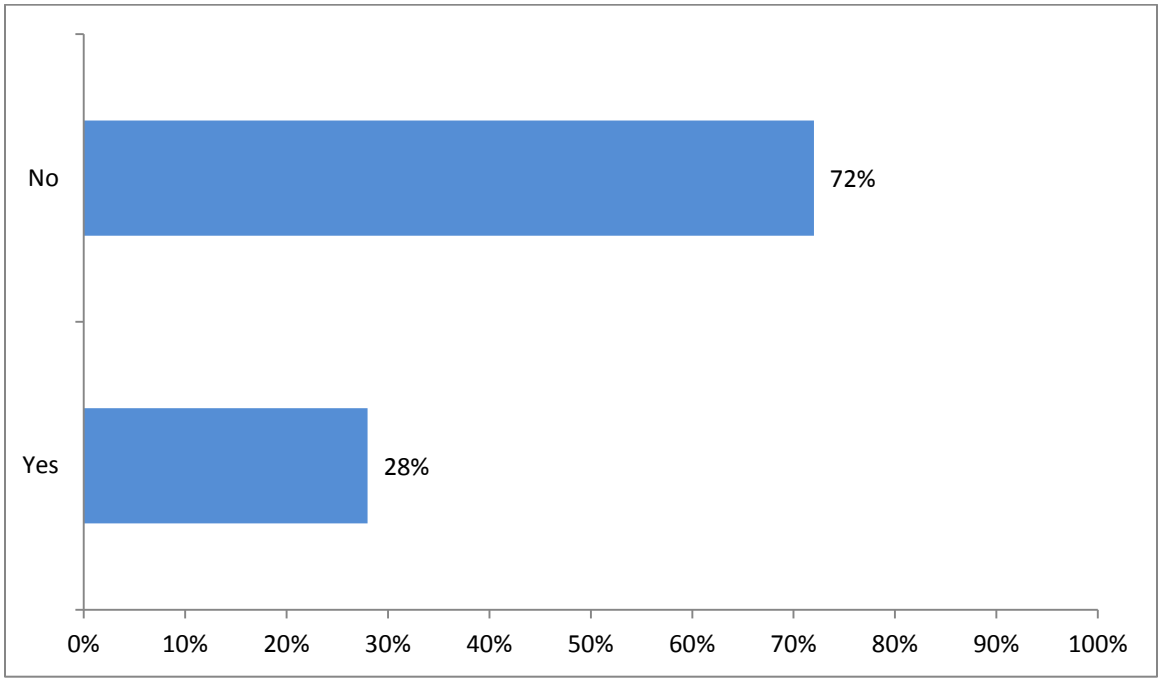


Chart 21: If you answered yes, you have had a hearing test - Why was your hearing tested?

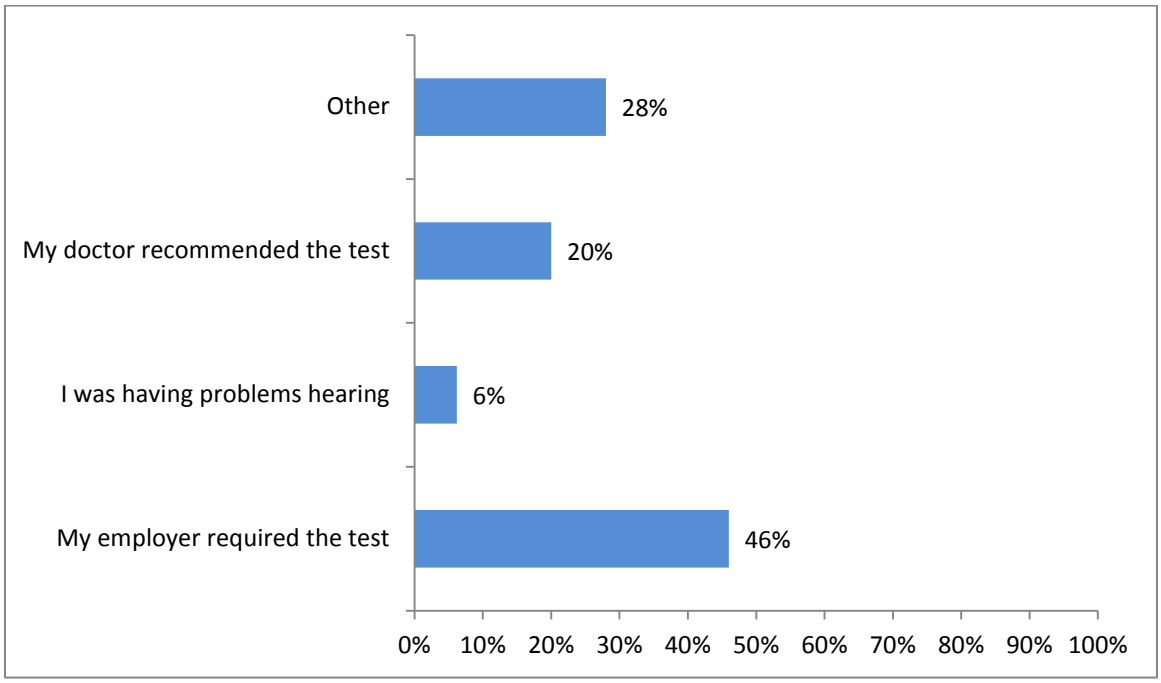


Chart 22: Please choose the best description of your hearing:

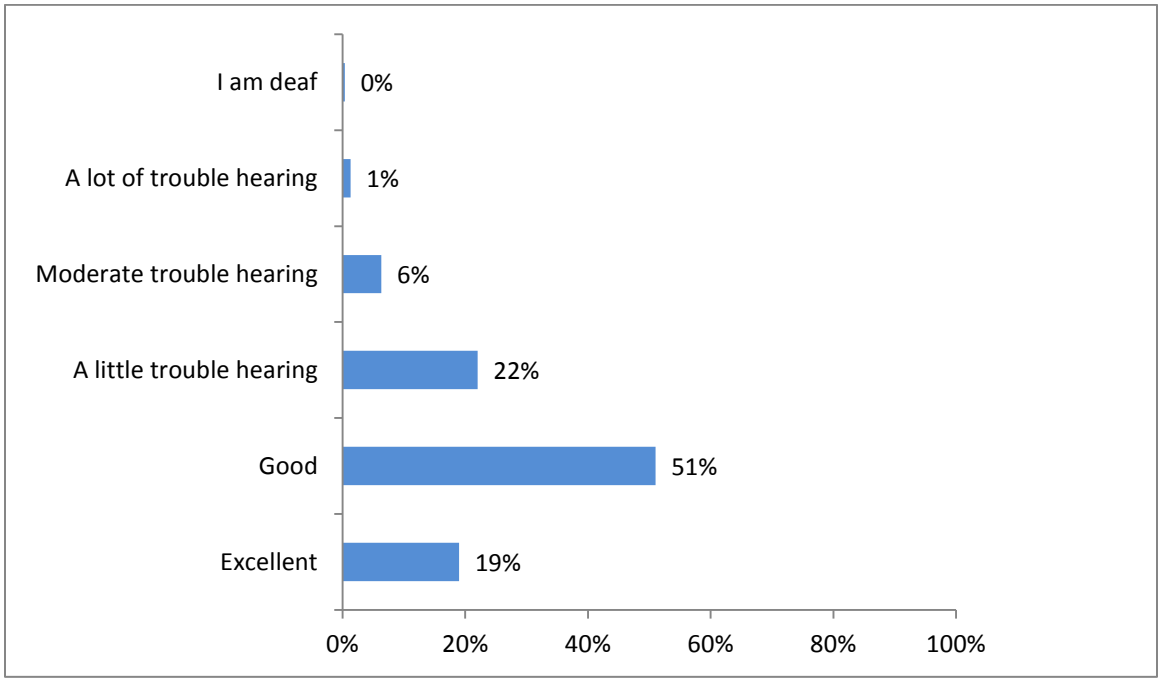
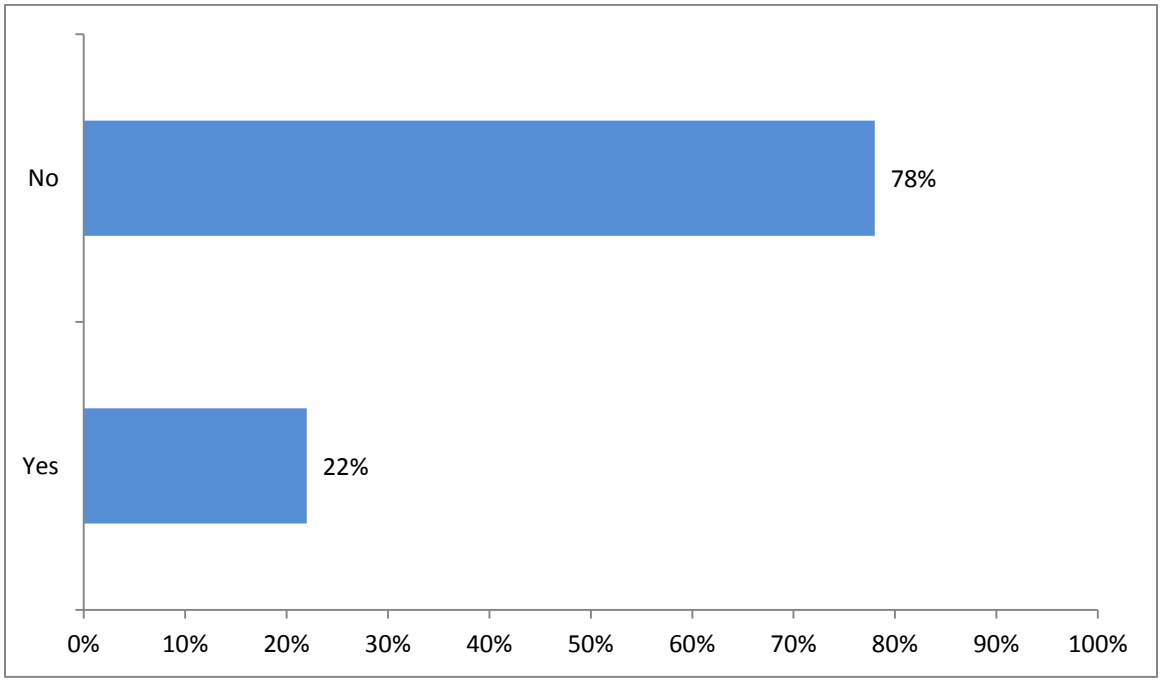


Chart 23: During the past 12 months, have you been bothered by ringing, roaring, or buzzing in your ears or head that lasts for 5 minutes or more? **Please note – these are early signs of hearing damage.**



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