



3M™ Hearing Protection Solutions

3M™ Earmuffs or 3M™ Earplugs can help to make your workers want to wear one and promote compliance as required at all times during exposure.

The Challenge of Hearing Protection

You can advance your hearing conservation programme with a customised and comprehensive approach to the hearing protection challenge. Implementing a solution that really makes a difference begins with understanding the hazards, the regulation and the factors that impact protection.

The Facts

The #1 Reported Occupational Health Issue:

data from the Malaysia SOCSO for that noise induced hearing loss is one of the highest reported occupational diseases in Malaysia.

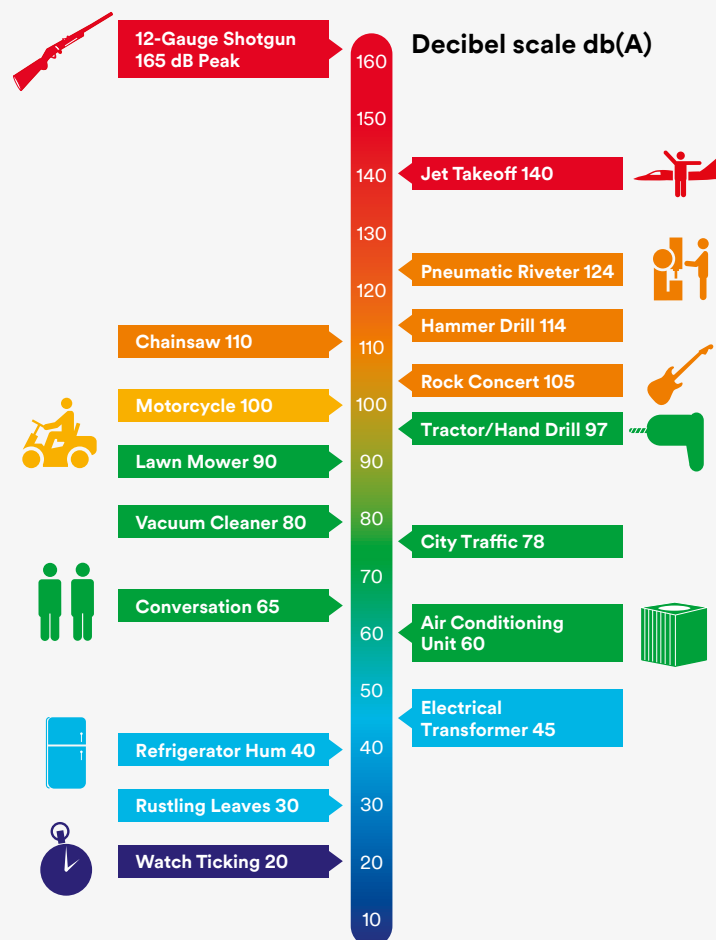
The Regulations

Malaysia OSHA Noise Exposure Limit (NEL)

- Employer shall ensure, nobody is allowed to be exposed exceeding:-
 - (A) Daily Noise Exposure Level - 85dB(A)
 - (B) Maximum SPL - 115dB(A) at any time
 - (C) Peak SPL - 140dB(C)

The Hazards

At home and work, it's important to understand which sounds may cause hearing loss and require hearing protection.



The Real World Hearing Concerns of Hearing Protection Variable Noise Levels: Every environment is different and workers can face a wide range of sound levels throughout the day and in different areas at the same facility.

The Human Factor: Each person has a different shape, size and anatomy of the ear canal, so there is no one-size fits all hearing protection solution. The key to achieving optimal protection is having the best fit possible.

Employee Communication: Where there is an essential need for workers to communicate or hear warning sounds it is vital that their hearing is protected from hazardous noise levels.

Note :

- **Daily Personal Noise Dose** means cumulative noise exposure of an employee corrected for a normal working day of 8 hours.
- If exposed to an excessive noise exceeding NEL, the employer shall take such measures to reduce the excessive noise.

3M™ Hearing Protection and Validation Solutions

As a global leader in sound and noise detection, hearing protection and fit test validation, 3M delivers easy and comprehensive solutions to complex hearing protection challenges.

Fit Test Validation

Integrating hearing protector fit testing into your hearing conservation program benefits everyone from new hires to high-risk workers. The 3M™ E-A-Rfit™ Validation System makes it easier to fit, train and motivate workers and to assess and manage the long-term performance of your hearing conservation program. 3M's broad range of hearing protection devices in a variety of types and styles helps you solve many of the challenges facing workers in various environments.

Adaptable Hearing Protection

3M delivers a wide range of innovative hearing protectors, making it easy to select the right solution for the job. A variety of types and sizes of earplugs and earmuffs are available, helping your team determine the right fit for each person and the right protection for the application. Our innovative products are designed for comfortable, extended wear, and they can help your team comply with your safety program.

3M's broad range of hearing protection devices in a variety of styles and materials helps you solve many of the challenges facing workers in various environments.



The importance of wearing hearing protection 100% of time exposed.



100 % Usage

Gives the expected protection.



99 % Usage

Just five minutes of carelessness per day significantly reduces the effect of the hearing protector.



90% Usage

Virtually no protection.



All 3M™ Personal Hearing Protection Products* are tested in accordance with
 EN 352-1 - Hearing protectors - Ear muffs
 EN 352-2 - Hearing protectors - Ear plugs
 EN 352-3 - Hearing protectors - Ear muffs attached to a safety helmet

Scan the QR Code to find out more (to be updated).

* Except for 3M™ E-A-R™ Flexible Fit HA Earplugs that are tested in accordance with ANSI S3.19.

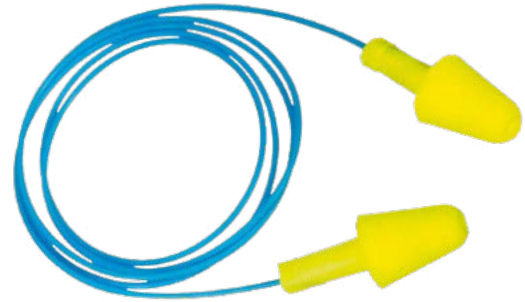
3M™ E-A-R™ Flexible Fit HA Earplug

Hearing protection simplified.

DOSH SIRIM Approved

Introducing the 3M™ E-A-R™ Flexible Fit HA Earplug. The first washable foam earplug and the first earplug with one-hand NRR claim.

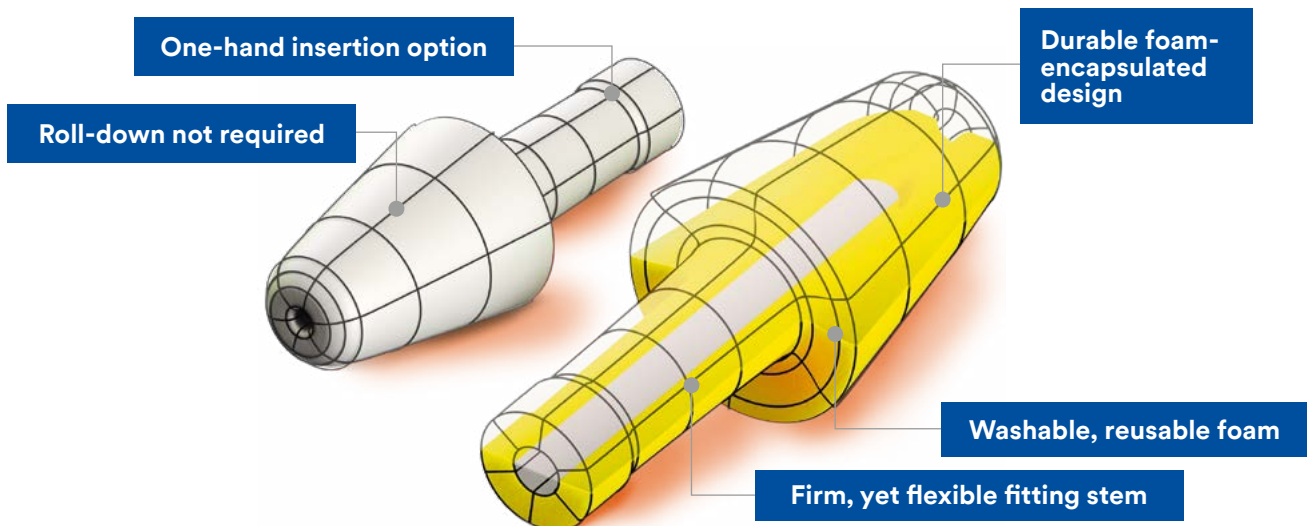
Breakthrough innovations in hearing protection don't happen every day. That's why we're excited to introduce the 3M™ E-A-R™ Flexible Fit Earplug. It's the first washable foam earplug and the first earplug that offers NRR 25 dB using a one-hand insertion, or NRR 30 dB with two-hand insertion.*



First washable foam

The 3M™ E-A-R™ Flexible Fit Earplug has a patented foam formulation which makes the earplug fully washable and reusable for up to two weeks. The soft foam tip and flexible foam-covered fitting stem allows easy insertion into the ear canal using one or two hands.

The shape of the earplug tip along with the soft conforming foam helps to provide a snug yet comfortable fit that helps reduce exposure to hazardous noise levels. The no roll-down design of the foam tip helps keep earplug tips clean when hands are dirty. 3M™ E-A-R™ Flexible Fit Earplugs are fit-testable with the 3M™ E-A-Rfit™ Dual-Ear Validation System.*



Ordering Information		
Product No.	Description	Noise Reduction Rating (NRR)
328-1000	3M™ E-A-R™ Flexible Fit Uncorded Earplugs, in Polybag	25 dB (one hand) 30 dB (two hands)
328-1001	3M™ E-A-R™ Flexible Fit Corded Earplugs, in Polybag	

* 3M strongly recommends fit testing of hearing protectors. Research suggests that many users will receive less noise reduction than indicated by the NRR due to variation in hearing protector fit, fitting skill and motivation of the user. If the NRR is used, 3M recommends that it be reduced by 50% or in accordance with applicable regulations. Noise Reduction Rating (NRR) 25 dB for one-hand insertion and 30 dB for two-hand insertion.

Earplugs

Roll Down Earplugs



3M™ E-A-Rsoft™ Yellow Neons™ Earplugs

- Proven size, shape, and foam.
- Moisture-resistant, dermatologically-safe foam is not irritating.
- Slow recovery foam provides comfort with low pressure.
- SNR 34 dB.

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Product	Description	Packaging
311-4266 / ES-01-005	3M™ E-A-Rsoft™ Yellow Neons™ Corded Earplugs, in Poly Bag	200 pairs/box, 10 boxes/case



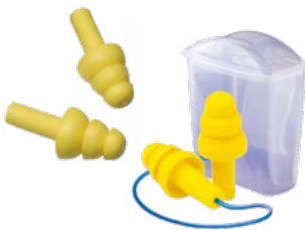
3M™ 1000 Foam Earplugs

- Tapered design to fit the ear canal comfortably.
- Smooth, dirt resistant surface for hygiene.
- Can be combined with ear muffs for additional protection.
- Soft cloth cord for additional convenience and to help prevent loss of earplugs (1110 only).
- SNR 35 dB.

DOSH SIRIM Approved

Product	Description	Packaging
1100	3M™ Uncorded Earplugs, in Poly Bag	200 pairs/box, 5 boxes/case
1110	3M™ Corded Earplugs, in Poly Bag	100 pairs/box, 5 boxes/case

Reusable Earplugs



3M™ E-A-R™ UltraFit™ Earplugs

- Reusable earplugs.
- Proprietary flange design gives the most comfortable fit of any reusable plug.
- Conforms to oval shape of ear.
- Washable, promotes worker hygiene.
- No rolling or touching plug portion during insertion.
- SNR 29 dB.

DOSH SIRIM Approved

Product	Description	Packaging
UF-01-000	3M™ E-A-R™ UltraFit™ Corded Earplugs, in Pillow Pack	50 pairs/box, 10 boxes/case
UF-01-100	3M™ E-A-R™ UltraFit™ Corded Earplugs, in Carry Case	50 pairs/box, 4 boxes/case



3M™ Corded Reusable Earplugs 1271

- Washable, reusable. Ideal for dusty, dirty situations.
- Soft elastic triple flanged design to securely fit ear canal.
- Includes storage case which keeps the plugs clean and protected.
- SNR 26 dB.

DOSH SIRIM Approved

Product	Description	Packaging
1271	3M™ Corded Reusable Earplugs, in Carry Case	50 pairs/box, 5 boxes/case

3M™ Peltor™ Earmuffs

OPTIME™ Series

- Optime™ Classification System for easy product selection.
- Proprietary liquid & foam-filled cushions for better seal and lower pressure.
- Simple height adjustment.
- Wide ear cushions for comfort.
- Padded, wide headband for extended wear.
- Stainless steel headband wires.
- Four-point suspension to help distribute cushion pressure evenly.

3M™ Peltor™ Optime™ I Series Earmuffs DOSH SIRIM Approved



Optime I Earmuffs offer versatile protection and are very lightweight providing high wearer comfort. They combine a low profile with generous inner depth which makes them easy to combine with other equipment, allowing the ear to rest comfortably. Optime I Earmuffs are your choice for both short and long duration tasks.

The wide, comfortable sealing rings are filled with a unique combination of fluid and foam, which gives optimum sealing and low contact pressure at the same time. It is ideal for use in environments with moderate industrial noise, such as workshops, sheet-metal shops and printing works, but also suitable outdoors, such as lawn mowing or in connection with hobby and leisure activities.

Product	Description
H510A	3M™ Peltor™ Optime™ I Series Earmuff, over-the-head, Yellow, SNR 27 dB
H510P3E	3M™ Peltor™ Optime™ I Series Earmuff, helmet attached, Yellow, SNR 26 dB
HY51	Replacement Hygiene Kit

3M™ Peltor™ Optime™ II Series Earmuffs DOSH SIRIM Approved



The PELTOR Optime II Earmuff has been developed for demanding noisy environments and muffles even extremely low frequencies to a maximum degree. The sealing rings are filled with a unique combination of liquid and foam. The result is an optimum seal with low contact pressure, which provides agreeable comfort even during long-term use. The sealing rings have ventilation channels and are covered with soft, patterned, hygienic foam.

PELTOR Optime II Earmuff is a suitable choice for environments with substantial industrial noise or construction machinery, airports and agricultural work.

Product	Description
H520A	3M™ Peltor™ Optime™ II Series Earmuff, over-the-head, Green, SNR 31 dB
H520P3E	3M™ Peltor™ Optime™ II Series Earmuff, helmet attached, Green, SNR 31 dB
HY52	Replacement Hygiene Kit

3M™ Peltor™ Optime™ III Series Earmuffs DOSH SIRIM Approved



Optime III Earmuff is a high performance hearing protector and has been developed for use in extremely noisy environments. The protection is based on a technology with a double casing minimising resonance in the holder casing resulting in maximum high-frequency attenuation.

The sealing rings are broad and filled with soft plastic foam for the best fit and low contact pressure. The PELTOR Optime III Earmuff stands for effective protection and highest comfort for the wearer.

Product	Description
H540A	3M™ Peltor™ Optime™ III Series Earmuff, over-the-head, Black/Red, SNR 34 dB
H540B	3M™ Peltor™ Optime™ III Series Earmuff, neckband, Black/Red, SNR 34 dB
H540P3E	3M™ Peltor™ Optime™ III Series Earmuff, helmet attached, Black/Red, SNR 33 dB
HY54	Replacement Hygiene Kit

Note: Accessories & spare parts do not require DOSH SIRIM approval.

3M™ Peltor™ X Series Earmuffs

A new standard

Design, Comfort and Attenuation Techniques. 3M developed the new 3M™ Peltor™ X Series Earmuffs based on these three pillars. In addition to simplicity of use and ease of identification, the new range earmuffs are now the new reference point in terms of over-the-ear protection.

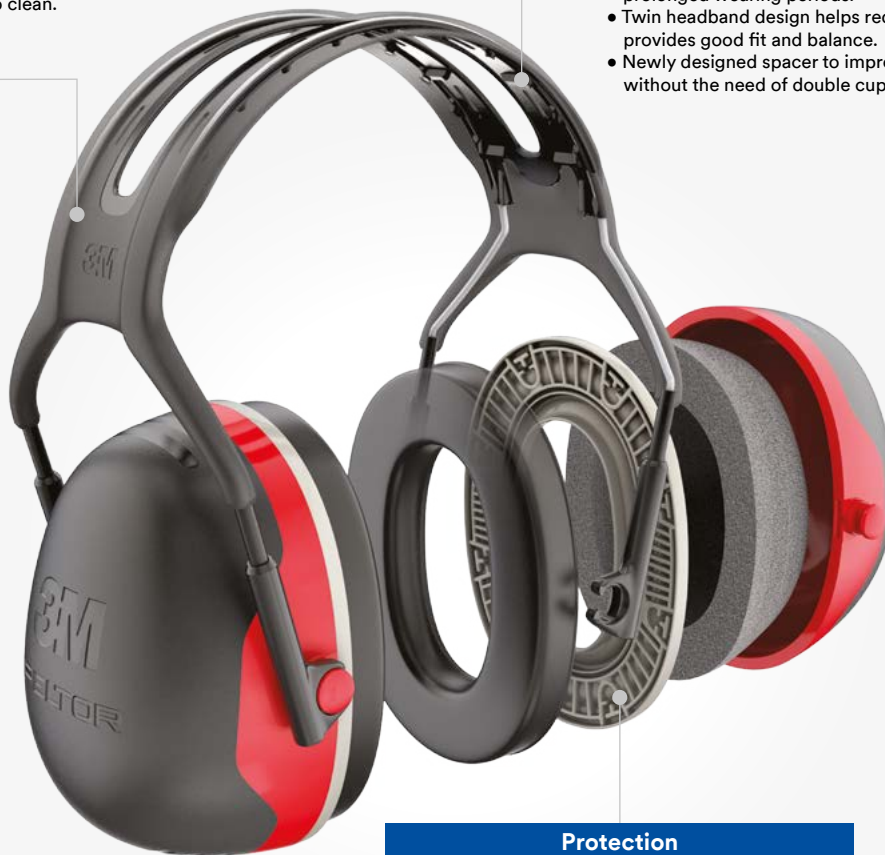


Design

- Protected wire headband - building on the success design of the current 3M™ Peltor™ Optime™ range of earmuff.
- Light-weight dual mould cups with maximum space inside to help minimize heat and moisture build-up.
- Integrated design for more robustness.
- Color coded for ease of selection.
- Electrical insulated headband.
- Easy to clean.

Comfort

- Easy to adjust headband.
- Wire headband with constant pressure over prolonged wearing periods.
- Twin headband design helps reduce heat build-up, provides good fit and balance.
- Newly designed spacer to improve attenuation without the need of double cup design.



Protection

- Streamlined cups without compromising attenuation.
- Compatible with a range of 3M™ Eyewear and 3M™ Respirators (validated by internal testing).
- New smart sealing ring.



3M™ Peltor™ X4A Earmuffs

- Extremely slim and lightweight earcups provide excellent compatibility when used with other 3M personal protection products.
- New specially-formulated foam earcup inserts and cushions help boost the noise-blocking capability of these comfortable, lightweight earmuffs.
- Features an electrically insulated (dielectric) wire headband**
- Colour coded fluorescent yellow-green for excellent visibility.

DOSH SIRIM Approved

Product	Description
X4A	3M™ Peltor™ X Series, Over-the-Head Earmuffs, SNR 33 dB
X4P5E	3M™ Peltor™ X Series, Hard Hat-Attached Earmuff, SNR 32 dB
HYX4	Replacement Hygiene Kit



3M™ Peltor™ X5A Earmuffs

- New groundbreaking technology allows 3M™ Peltor™ Earmuffs to provide very high noise reduction in both standard headband and hard hat-attached models.
- Unique attenuation as result of optimum combination of specially-formulated foam featured in the earcups, cushions and the innovative spacer and cup design.
- Despite the larger earcups, the X5 remains relatively lightweight with excellent balance and comfort.
- Features an electrically insulated (dielectric) wire headband**

DOSH SIRIM Approved

Product	Description
X5A	3M™ Peltor™ X Series, Over-the-Head Earmuffs, SNR 37 dB
X5P5E	3M™ Peltor™ X Series, Hard Hat-Attached Earmuff, SNR 36 dB
HYX5	Replacement Hygiene Kit






Note: Accessories & spare parts do not require DOSH SIRIM approval.

** Electrically insulated. The bracket arms of helmet attachment earmuffs are made of non-conductive (sometimes referred to as 'dielectric') material whilst the metal components of the attachment mechanisms are covered in non-conductive material. The metal wire of the headband earmuffs are covered in a non-conductive material. These products were found to be electrically insulated, withstanding a voltage up to 1,2 kV, at an external laboratory against a modified test method based on EN 397:2012 under dry conditions. The user must determine the overall suitability of this product for the intended application taking into account any hazards other than noise for which this product is tested and approved.

3M™ Hearing Protection Product Reference Guide

Category	Product	Neck Corded Option	Moisture Resistant	Slow Recovery Foam	Pillow Pack	Hi-Viz	Users wears glove or has dirty hands	Single Number Rating (SNR)
Roll Down Foam Disposable Earplugs	 <p>E-A-Rsoft™ Yellow Neons™ Earplugs</p>	•		•		•		34 dB
	 <p>1100 / 1110 Earplugs</p>	•		•				35 dB
Reusable Earplugs	 <p>UltraFit™ Earplugs</p>	•	•		•		•	29 dB
	 <p>1271 Earplugs</p>	•	•				•	26 dB
Washable Earplugs	 <p>E-A-R Flexible Fit Earplugs</p>	•	•		•	•	•	25 dB (one hand) 30 dB (two hands) Noise Reduction Rating (NRR)

3M™ Hearing Protection Product Reference Guide

Category	Product	Neckband	Headband	Helmet attached	Hi-Viz	Di-electric	Slim line cup	Twin headband design	Single Number Rating (SNR)
Earmuffs	 Peltor™ Optime™ III H540 Earmuffs	•	•	•					Neckband 34 dB Helmet attachment 33 dB Headband 34 dB
	 Peltor™ Optime™ II H520 Earmuffs		•	•					Helmet attachment 31 dB Headband 31 dB
	 Peltor™ Optime™ I H510 Earmuffs			•	•				Headband 27 dB Helmet attachment 26 dB
	 Peltor™ X4 Earmuffs			•	•	•	•	•	Headband 33 dB Helmet attachment 32 dB
	 Peltor™ X5 Earmuffs			•	•		•	•	Headband 37 dB Helmet attachment 36 dB

* Di-electric only available on headband

ANSI to CE Standard Product Change Recommendation

With the implementation of the Malaysia DOSH-SIRIM PPE Certification, all 3M™ Personal Hearing Protectors (PHP) that are ANSI S3.19 certified will be transitioned to European Standard (EN) – CE Certified.

Below are the EN standards related to PHP:

EN 352-1 Over the Head/Headband Earmuffs

EN352-2 Earplugs

EN352-3 Helmet Attached Earmuffs

Current ANSI S3.19 Certified		Recommended CE Certified Alternative	
Model	Noise Reduction Rating (NRR)	Model	Single Number Rating (SNR)*
1100 	29 dB	1100 	35 dB
1110 	29 dB	1110 	35 dB
1270 	24 dB	1271 	26 dB
1271 	24 dB		
Yellow Neons™ 311-1250 	33 dB	Yellow Neons™ ES-01-005 311-4266 	34 dB
Yellow Neons™ 312-1250 	33 dB		
TaperFit™ 312-1219 	32 dB		
TaperFit™ 312-1223 	32 dB		
1292 	25 dB	UltraFit™ UF-01-000 	29 dB
UltraFit™ 340-4004 	25 dB		
1293 	25 dB		
UltraFit™ 340-4002 	25 dB	UltraFit™ UF-01-100 	29 dB

Current ANSI S3.19 Certified		Recommended CE Certified Alternative		
Model	Noise Reduction Rating (NRR)	Model	Single Number Rating (SNR)*	
Optime™ 98 H9A 	25 dB	Optime™ I H510A 	27 dB	
Optime™ 98 H9P3E 	23 dB	Optime™ I H510P3E 	26 dB	
Optime™ 101 H7A 	27 dB	Optime™ II H520A 	31 dB	
Optime™ 101 H7P3E 	24 dB	Optime™ 101 H520P3E 	31 dB	
Optime™ 105 H10A 	30 dB	Optime™ III H540A 	34 dB	
Optime™ 105 H10P3E 	27 dB	Optime™ III H540P3E 	33 dB	
Optime™ 105 H10B 	29 dB	Optime™ III H540B 	34 dB	
X4A 	27 dB	X4A 	33 dB	
X4P5E 	25 dB	X4P5E 	32 dB	
X5A 	31 dB	X5A 	37 dB	
X5P5E 	31 dB	X5P5E 	36 dB	

Frequently Asked Questions

- Flexible Fit Earplugs** (328-1000 & 328-1001) are already approved by DOSH SIRIM under ANSI standard. These models will continue to be marketed as ANSI S3.19 tested.
- Any existing ANSI tested PHP models not listed in tables above do not have a suitable alternative recommendation.** Please consult our 3M representatives or authorized distributors for further information.
- SNR - Single Number Rating** (the value that is subtracted from the measured C-weighted sound pressure level, LC in order to estimate the effective A-weighted sound pressure level inside the ear)
- DOSH clarified in its website here, that after enforcement, existing PPE without DOSH approval is allowed to use until its expiry. The **next purchase of PPE must have DOSH approval with DOSH-SIRIM certification marks.**

*3M strongly recommends fit testing of hearing protectors. Research suggests that many users will receive less noise reduction than indicated by the SNR due to variation in hearing protector fit, fitting skill and motivation of the user. Refer to your applicable regulations for guidance on how to adjust label values and estimate attenuation. In addition, 3M™ E-A-Rfit™ Dual-Ear Validation System can support your fit testing needs for improved wear; compliance and assess individual Personal Attenuation Rate (PAR).

- EN 458 Hearing protector recommendations for selection, use, care and maintenance guide recommend user review PHP rating not limit to SNR, but also Octave Band, High Medium Low (HML) method.
- EN 458 recommended use only tested and certified combinations of helmet and earmuff.

3M™ E-A-Rfit™ Dual-Ear Validation System

With the Malaysia New Noise Exposure Regulation 2019, stricter control on excessive noise level (action level) and noise exposure limit (permissible exposure limit) in the workplace has been implemented and enforced. Besides that, workers' who are exposed to noise hazards are also required to be trained annually and correct personal hearing protector (PHP) to be provided in accordance with the selection guide stated in the Industry Code of Practice for Management of Occupational Noise Exposure and Hearing Conservation 2019 (ICOP). 3M™ E-A-Rfit™ Dual-Ear Validation System act as a proactive tool to prepare you in complying with this regulation. Find out more about how this system can help you below or contact 3M at 3mmyps@mmm.com for more information and demonstration.



The right fit test. Right now.

- Tests both ears simultaneously in under 5 second.
- Earmuff and earplug testing capability.
- Tests at 7 frequencies from 125Hz to 8000Hz.
- Science-based objective, quantitative testing

The challenge of hearing protection.

How do you know if your workforce is protected?

Protecting workers from hazardous noise levels is an ongoing challenge for many organizations. In fact, according to the U.S. Bureau of Labor Statistics (2010)*, the most commonly recorded occupational health issue in the manufacturing sector is permanent hearing loss. The success of your safety program depends on many factors and requires more than just offering hearing protection.

Individual Fit Testing Using F-MIRE

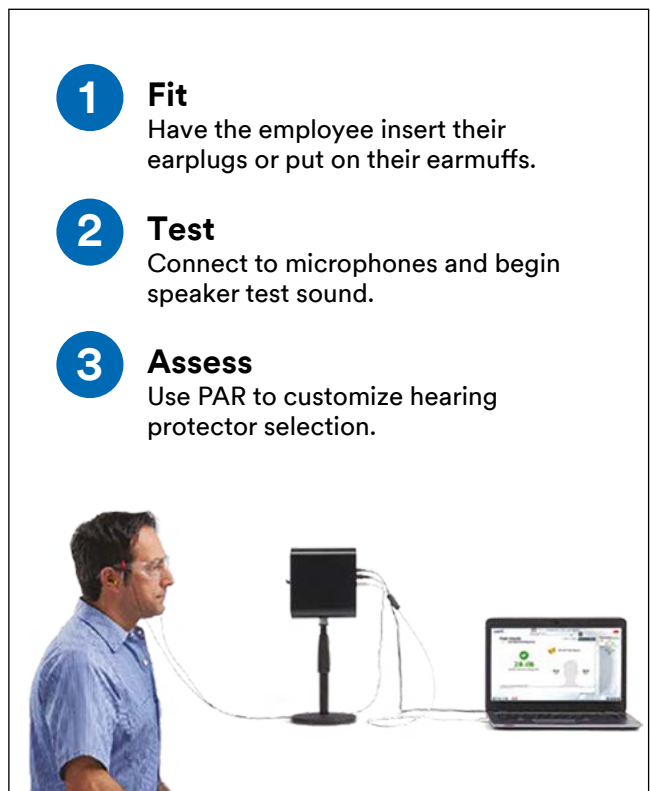
Using F-MIRE (Field Microphone-In-Real-Ear) technology, the 3M™ E-A-Rfit™ Dual-Ear Validation System generates a Personal Attenuation Rating (PAR) in under 5 seconds for both ears, taking into account the 7 standard measured testing frequencies.

- Measures how well 3M's most popular earplugs and earmuffs perform.
- Delivers a quantitative measurement of personal noise reduction for each employee.
- Can help identify whether or not the employee has adequate protection.

The Right Protection for Your Facility

Get results you can trust. The 3M™ E-A-Rfit™ Dual-Ear Validation System measures the effectiveness of the hearing protection from inside the employee's ear, providing accurate, quantitative results. And because you can simultaneously test both ears, you'll have more time to educate employees on the importance of fit and compliance.

- 1 Fit**
Have the employee insert their earplugs or put on their earmuffs.
- 2 Test**
Connect to microphones and begin speaker test sound.
- 3 Assess**
Use PAR to customize hearing protector selection.



* Source: <http://www.cdc.gov/niosh/docs/2010-136/pdfs/2010-136.pdf>

Employee-to-Employee Variability

To make sure they are getting the protection they need, you need to know the Personal Attenuation Rating (PAR) of every employee. The highest-NRR earplug or earmuff won't provide the expected protection if it doesn't fit right or isn't used right. Once you know each employee's number, you'll be on the way to yours: 100% confidence in your hearing conservation program.

Every employee is different. Every job is different. Every ear is different. Finding each employee's number will help you validate compliance and have assurance that their hearing protection is sufficient.

Program Documentation

3M™ E-A-Rfit™ Dual-Ear Validation System testing sessions produce a validation document that can be kept in each employee's file, providing documentation of your commitment to training and compliance with OSHA hearing conservation program guidelines.

- Features easy-to-read test results for both ears as well as testing history.
- Creates digital and printable reports for both employee and company records.
- Provides a direct measurement of noise reduction in decibels.
- Provides an estimate of test variability.



Fail - 10 dB	Pass - 29 dB
 <p>A "fail" result means the hearing protection is either not fitted properly or is the wrong type or size for the worker's ear canal.</p> <p><small>NOTE: Finding out each employee's PAR is the first step to a successful conservation program. Once a worker's PAR is measured, you can determine if they're using the right hearing protection and ensure they're trained on using it properly.</small></p>	 <p>A "pass" result means the hearing protection fits properly and provides sufficient protection for the worker's specific job.</p>

