

# Asbestos Awareness

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Management Expert  
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**Global Shelter Cluster**  
ShelterCluster.org  
Coordinating Humanitarian Shelter

**miyamoto.**  
**ukraine**

ВІДНОВЛЕННЯ. ПЕРЕМОГА. ВІДБУДОВА.



# Session Outline

## Introductions

**Dave Hodgkin: The Global Picture**

**Denys Pavlovskyi: The Ukraine Context**

**Questions and Answers**





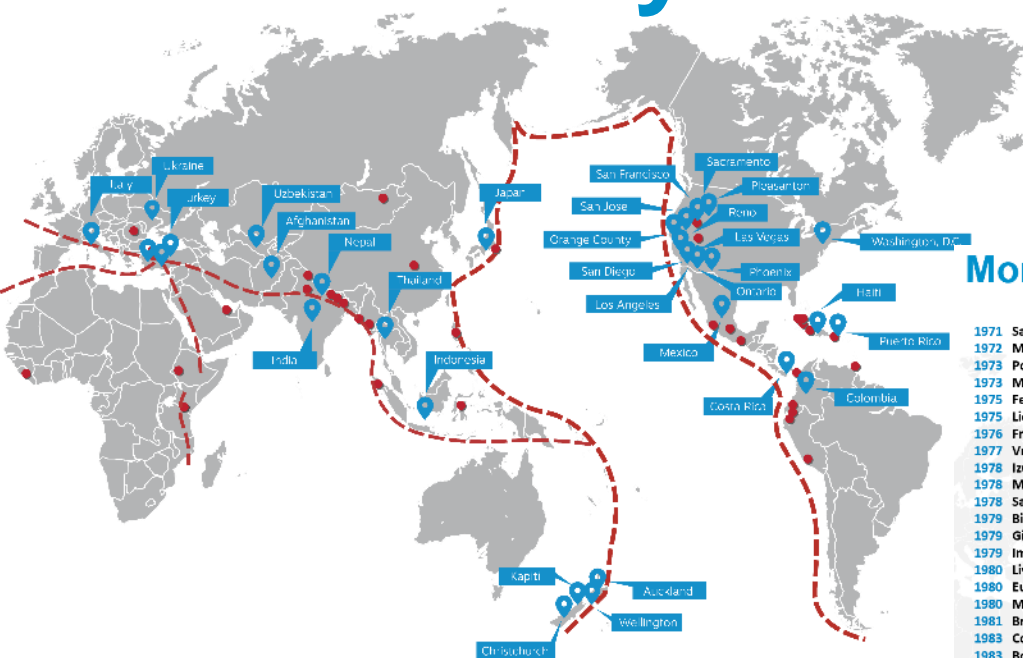
**Dave Hodgkin:**  
**Director of Shelter and Settlements**  
**Miyamoto International**

## **The Global Picture**

- What is Asbestos and why was it so popular
- Why is Asbestos dangerous and banned in 60+ countries
- Understanding the hazard;
  - The two basic forms of asbestos (Friable, non-friable)
  - The fundamentals of how to reduce risk



# Miyamoto International Miyamoto Relief & Miyamoto Ukraine



## More than 100 Disasters and Conflict, 1971 - 2023

- |   |  |  |
|---|--|--|
| 1971 San Fernando, CA (M6.5)            | 1988 Armenia, USSR (M6.9)                    | 1999 Athens, Greece (M5.9)               |
| 1972 Managua, Nicaragua (M6.3)          | 1989 Acapulco, Mexico (M6.8)                 | 1999 Algeria (M5.5)                      |
| 1973 Point Mugu, CA (M5.9)              | 1989 Loma Prieta, CA (M7.1)                  | 1999 Hector Mine, California (M7.1)      |
| 1973 Managua, Nicaragua (M5.8)          | 1989 Newcastle, Australia (M5.5)             | 2000 Napa, CA (M5.2)                     |
| 1975 Ferndale, CA (M5.5)                | 1990 Upland, California (M5.5)               | 2000 Tottori, Japan (M6.7)               |
| 1975 Lice, Turkey (M6.8)                | 1990 Bishop's Castle, Wales (M5.4)           | 2001 Gujarat, India (M7.6)               |
| 1976 Friuli, Italy (M6.5)               | 1990 Manjil, Iran (M7.7)                     | 2001 Seattle, WA (M6.8)                  |
| 1977 Vrancea, Romania (M7.4)            | 1990 Central Luzon, Philippines (M7.7)       | 2002 San Simeon (Paso Robles), CA (M6.5) |
| 1978 Izu Peninsula, Japan (M6.7)        | 1991 Valle de la Estrella, Costa Rica (M7.4) | 2002 West Sumatra, Indonesia (M6.3)      |
| 1978 Miyagi-Ken-oki, Japan (M7.4)       | 1991 Sierra Madre, CA (M5.8)                 | 2007 Niigata (Kashiwazaki), Japan (M6.8) |
| 1978 Santa Barbara, CA (M5.1)           | 1992 Erzincan, Turkey (M6.8)                 | 2008 Mexicali, Mexico (M5.1)             |
| 1979 Bishop, CA (M5.8)                  | 1992 Roermond, Netherlands (M5.8)            | 2008 Wells, Nevada (M6.3)                |
| 1979 Gilroy, CA (M5.5)                  | 1992 Desert Hot Springs, CA (M6.1)           | 2008 Sichuan, China (M8.0)               |
| 1979 Imperial Valley, CA (M6.6)         | 1992 Cape Mendocino, CA (M7.0, 6.0, & 6.5)   | 2008 Chino Hills, CA (M5.4)              |
| 1980 Livermore, CA (M5.5 and 5.8)       | 1992 Landers-Big Bear, CA (M7.6 and 6.7)     | 2009 L'Aquila, Italy (M6.3)              |
| 1980 Eureka, CA (M7.0)                  | 1992 Cairo, Egypt (M5.9)                     | 2010 Eureka, CA (M6.5)                   |
| 1980 Mammoth Mt., CA (M6.5, 6.5, 6.7)   | 1993 Scotts Mill, OR (M5.3)                  | 2010 Haiti (M6.9)                        |
| 1981 Brawley, CA (M5.6)                 | 1993 Nansei-oki Hokkaido, Japan (M7.8)       | 2010 Chile (M8.8)                        |
| 1983 Coalinga, CA (M6.7)                | 1993 Agaña, Guam (M8.2)                      | 2010 Baja California, Mexico & CA (M7.2) |
| 1983 Borah Mt., Idaho (M6.9)            | 1993 Klamath Falls, OR (M5.7)                | 2010 Christchurch, New Zealand (M7.2)    |
| 1984 Morgan Hill, CA (M6.2)             | 1994 Northridge, CA (M6.6)                   | 2011 Christchurch, New Zealand (M6.3)    |
| 1985 Santiago, Chile (M7.8 and 7.2)     | 1994 Tohoku-oki, Hokkaido, Japan (M8.1)      | 2011 Honshu, Japan (M9.0)                |
| 1985 Mexico City, Mexico (M8.1 and 7.5) | 1995 Great Hanshin (Kobe), Japan (M7.2)      | 2011 Van, Turkey (M7.2)                  |
| 1986 Painesville, Ohio (M5.0)           | 1995 Pereira, Colombia (M6.5)                | 2012 Finale Emilia, Italy (M6.0)         |
| 1986 Adak Island, Alaska (M7.7 and 6.5) | 1995 Sakhalin Islands, Russia (M7.2)         | 2013 Philippines (M7.1)                  |
| 1986 North Palm Springs, CA (M6.0)      | 1995 Antofagasta, Chile (M7.4)               | 2014 Napa, CA (M6.0)                     |
| 1986 Chalfant Valley, CA (M6.0 and 5.5) | 1995 Manzanillo, Mexico (M7.6)               | 2015 Nepal (M7.8)                        |
| 1986 San Salvador, El Salvador (M5.4)   | 1996 Duvall (Seattle), WA (M5.3)             | 2016 Ecuador (M7.8)                      |
| 1986 Northern Taiwan (M6.8)             | 1997 Calico, CA (M5.0)                       | 2016 Norcia, Italy (M7.0)                |
| 1987 Cerro Prieto, Mexico (M5.4)        | 1997 Umbria, Italy (M5.5)                    | 2017 Central Mexico (M7.1)               |
| 1987 Bay of Plenty, New Zealand (M6.2)  | 1998 Adana-Ceyhan, Turkey (M6.2)             | 2018 Indonesia (M6.9 and M7.5)           |
| 1987 Whittier, CA (M5.9)                | 1999 Armenia, Colombia (M5.0)                | 2019 Ridgecrest, CA (M7.1)               |
| 1987 Superstition Hills, CA (M6.3)      | 1999 Puerto Escondido, Mexico (M7.5)         | 2020 Puerto Rico (M6.4 and M5.8)         |
| 1988 Gorman, CA (M5.2)                  | 1999 Western Washington (M5.8)               | 2022 Humboldt, CA (M5.4)                 |
| 1988 Alum Rock, CA (M5.1)               | 1999 Izmit, Turkey (M7.4)                    | 2023 Paktika, Afghanistan (M6.5)         |
| 1988 Saguenay, Quebec (M6.0)            | 1999 Duzce, Turkey (M7.2)                    | 2023 Ukraine Reconstruction              |
|   | 1999 Central Taiwan (M7.6)                   | 2023 Gaziantep, Türkiye (M7.8 and 7.5)   |



# What is asbestos

Asbestos is a ‘trade name’ for a group of 6 naturally-occurring silica-based crystalline minerals

Serpentine	Amphibole
<b>Chrysotile</b> (White Asbestos)	<b>Crocidolite</b> (Blue Asbestos) <b>Amosite</b> (Brown Asbestos) <b>Tremolite</b> (green) <b>Anthophyllite</b> <b>Actinolite</b>

***“All forms of asbestos are carcinogenic to humans”***

World Health Organization, 15<sup>th</sup> Feb 2018

# Serpentine Asbestos

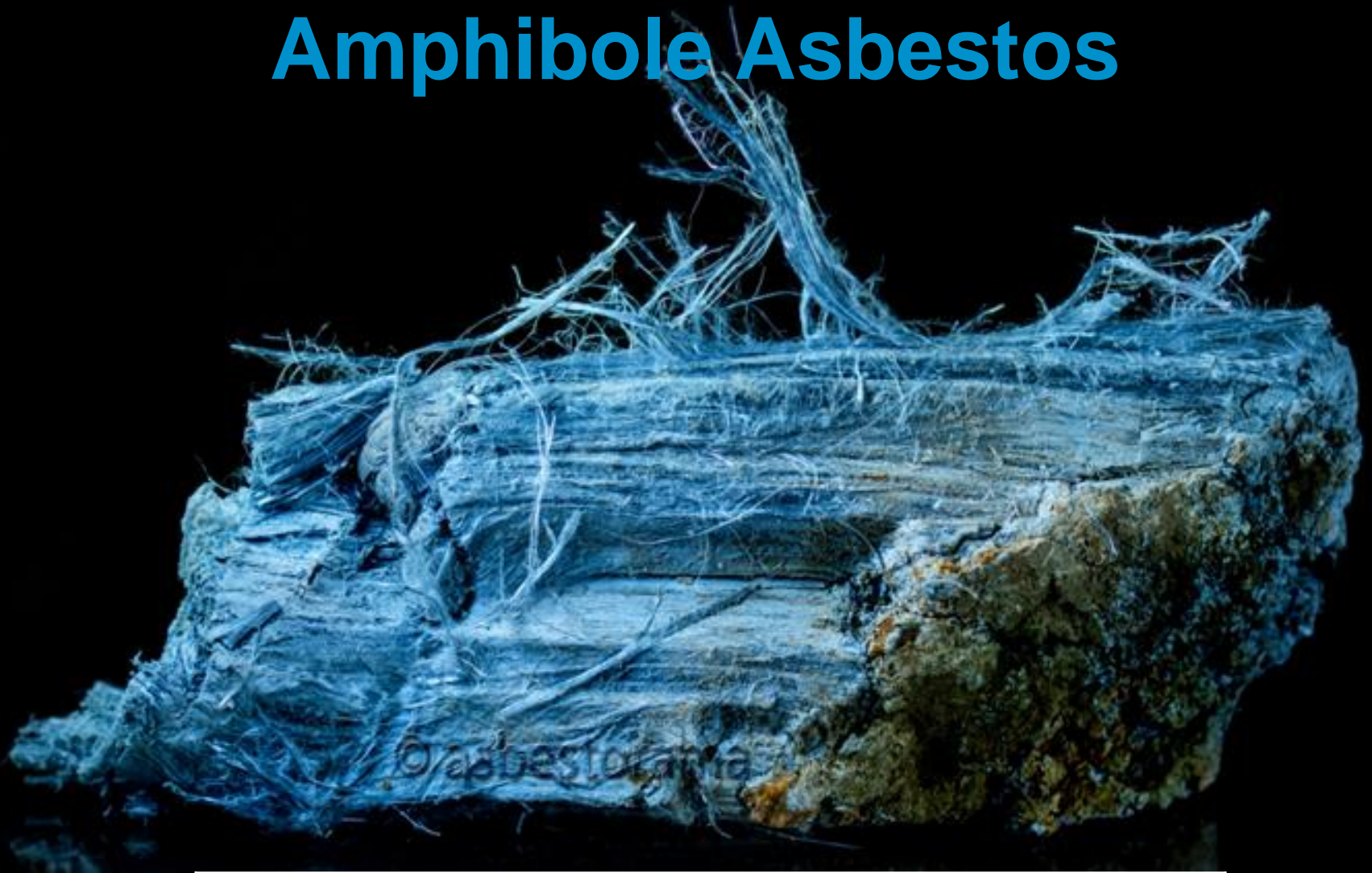


## Chrysotile -White Asbestos

Asbestos Cement Products; Roofing, Fencing, Sidings, etc



# Amphibole Asbestos



**Crocidolite (Blue Asbestos)**

No longer used commercially, was used as per white asbestos

# Amphibole Asbestos



## Amosite (Brown Asbestos)

No longer used commercially, was used as per white asbestos



# Amphibole Asbestos



**Tremolite**

Not used commercially but appears as contaminant

# Amphibole Asbestos



**Anthophyllite**

Not commercially used



# Amphibole Asbestos



Actonite

Not commercially used



# Other asbestiform minerals

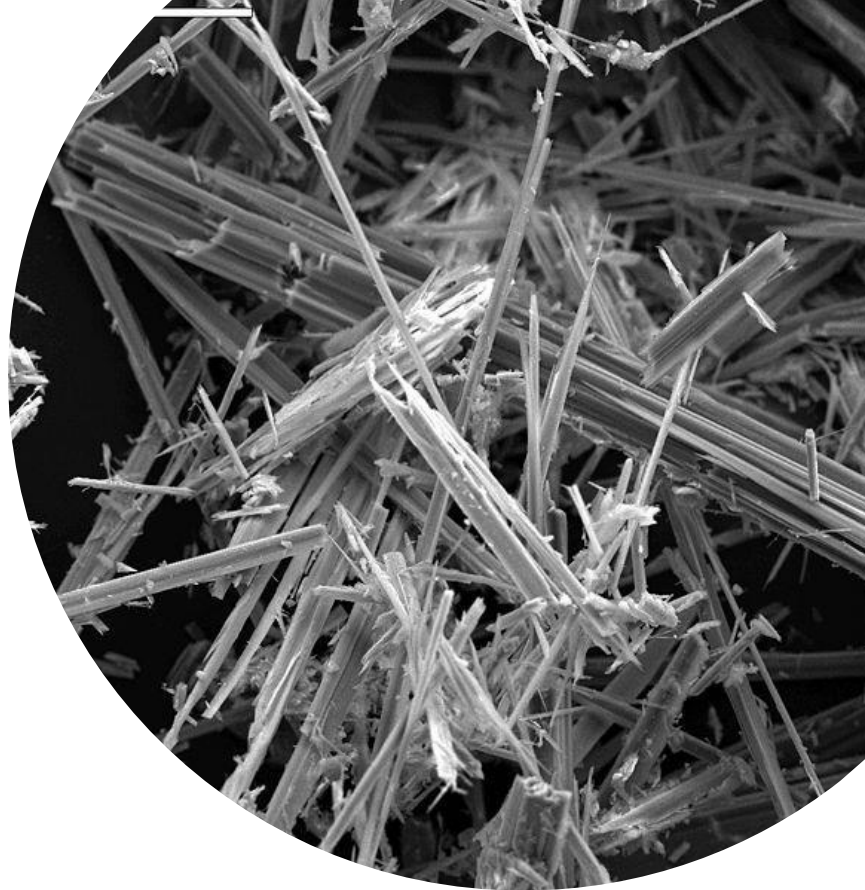


Asbestos like minerals such as Erionite in Turkey



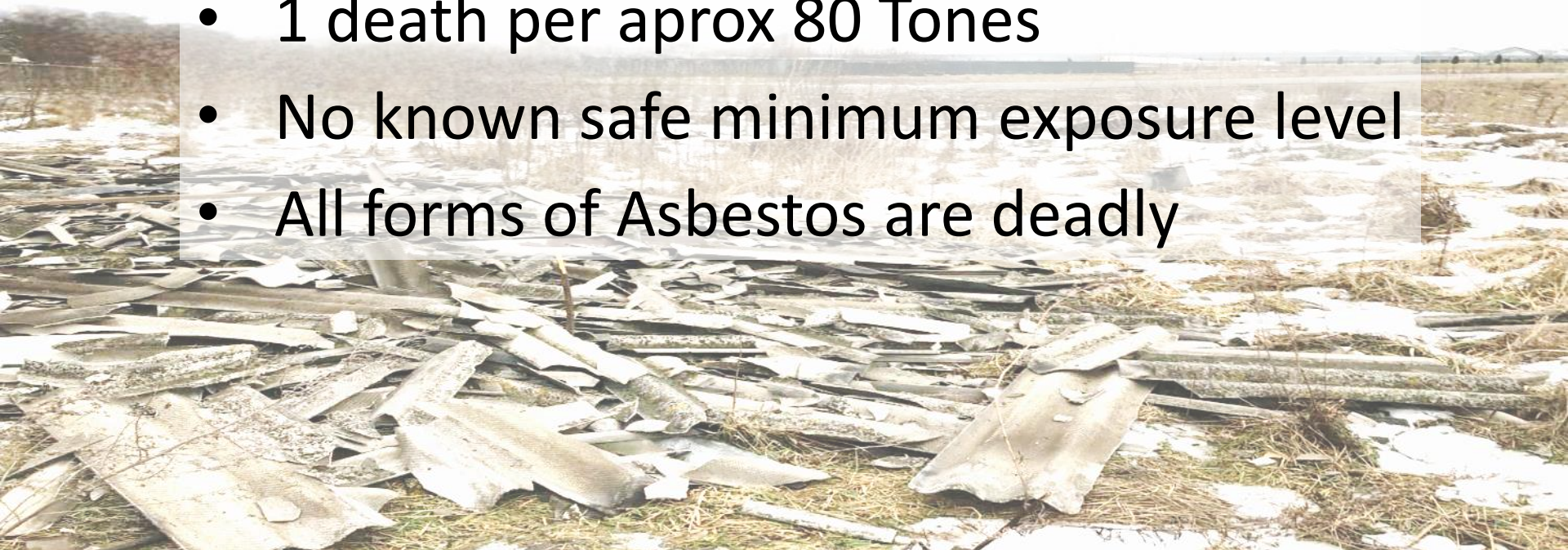
# Why was Asbestos so popular

- High tensile strength
- Fire Resistance
- Excellent durability
- Good insulation
- Resistance to chemical
- Flexibility
- Stable
- Sound dampening
- Abundant so cheap



# What is the risk

- World's number one industrial disease
- 230,000+ die every year globally
- 1 death per aprox 80 Tones
- No known safe minimum exposure level
- All forms of Asbestos are deadly





# What is the risk

Causes a range of incurable fatal diseases:

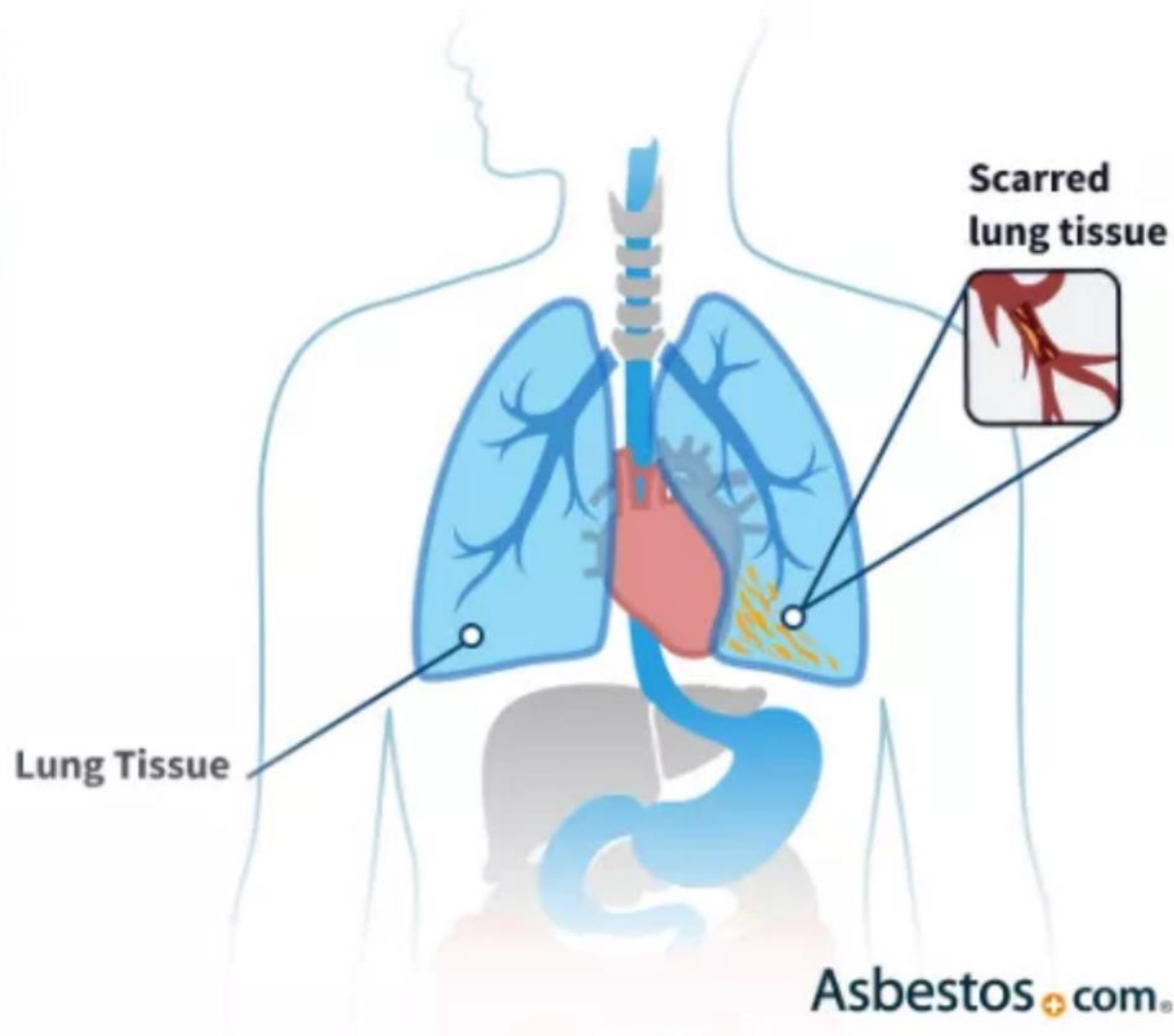
- Asbestosis
- Mesothelioma
- Cancer of the;
  - Lungs, Ovaries, Testicles, Colon, Larynx, Pharynx, Stomach
- Pleural Thickening, Hardening and Effusions,



# Asbestosis

## Symptoms:

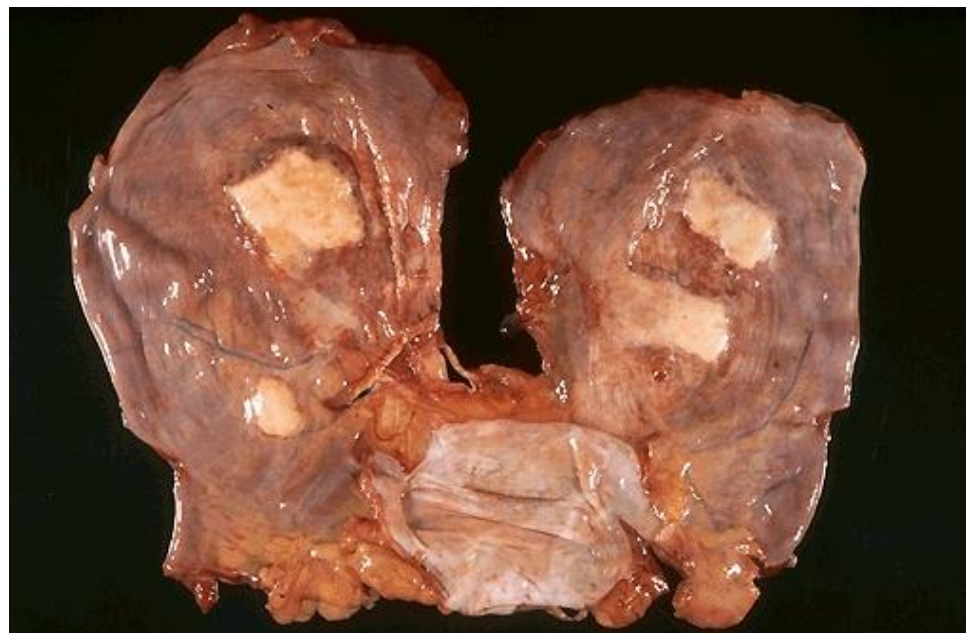
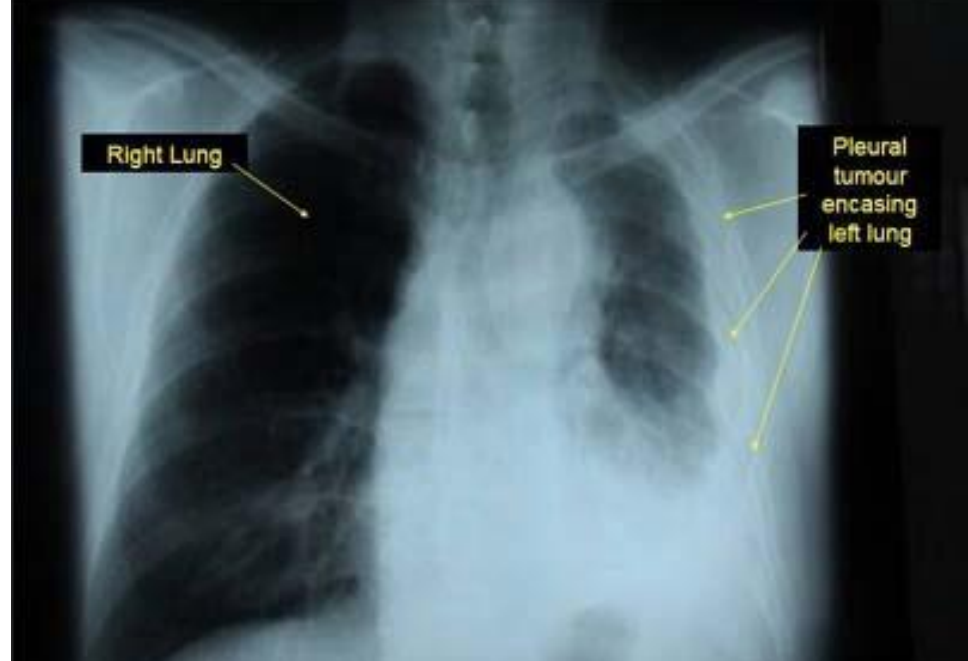
- Shortness of breath
- Coughing
- Tightness in chest
- Chest Pain
- Clubbed fingers





# Lung Cancer

- Increased rates amongst people exposed to asbestos
- Generally slow onset
- Symptoms include:
  - Difficulty breathing
  - Weakness
- No known cure other than lung transplant



# Mesothelioma

- A form of cancer
- Most commonly starts in lungs
- Slow onset, then rapid decline
- Increasing difficulty breathing
- No known cure



Healthy Lung



Lung affected by mesothelioma



# Banned in 60+ Countries



A world map with a light gray background, showing the outlines of continents. Overlaid on the map are the names of 60+ countries where a ban is in effect. The names are arranged in five columns, roughly corresponding to the geographical location of the countries. Some names have small blue numbers (2, 3, 4, 5) next to them, and some have an asterisk (\*).

Algeria	Czech Republic*	Iceland	Malta*	Saudi Arabia
Argentina	Denmark	Ireland	Mongolia <sup>5</sup>	Seychelles
Australia	Egypt	Israel <sup>3</sup>	Mozambique	Slovakia*
Austria	Estonia*	Italy	Netherlands	Slovenia
Bahrain	Finland	Japan	New Caledonia	South Africa
Belgium	France	Jordan <sup>4</sup>	Norway	Spain
Brunei	Gabon	Korea (South)	Oman	Sweden
Bulgaria	Germany	Kuwait	Poland	Switzerland
Chile	Greece*	Latvia	Portugal*	Turkey
Croatia <sup>2</sup>	Honduras	Lithuania*	Qatar	United Kingdom
Cyprus*	Hungary*	Luxembourg	Romania	Uruguay

# Understanding the risk

Asbestos comes in two forms

Friable (loose) & Non-Friable (bonded)





# Non-friable Asbestos



**ACM's such as Roofing and Fencing**





# Friable Asbestos



**Loose or unbound Asbestos such as Lagging and Insulation**



# Friable Asbestos



# The basics of reducing risk

1. When possible don't disturb it
  - Don't drill it, cut it, grind it or break
  - Wet it, paint it, leave it
2. If you must disturb it
  - Cordon off the area
  - Dampen it (mist) to **Reduce Dust**
  - Where PPE (Backup Parachute)
  - Don't drill it, cut it, grind it or break it
  - Wrap it, seal it
  - Bury it where it wont be disturbed





# The basics of reducing risk

## Personal Protection Equipment

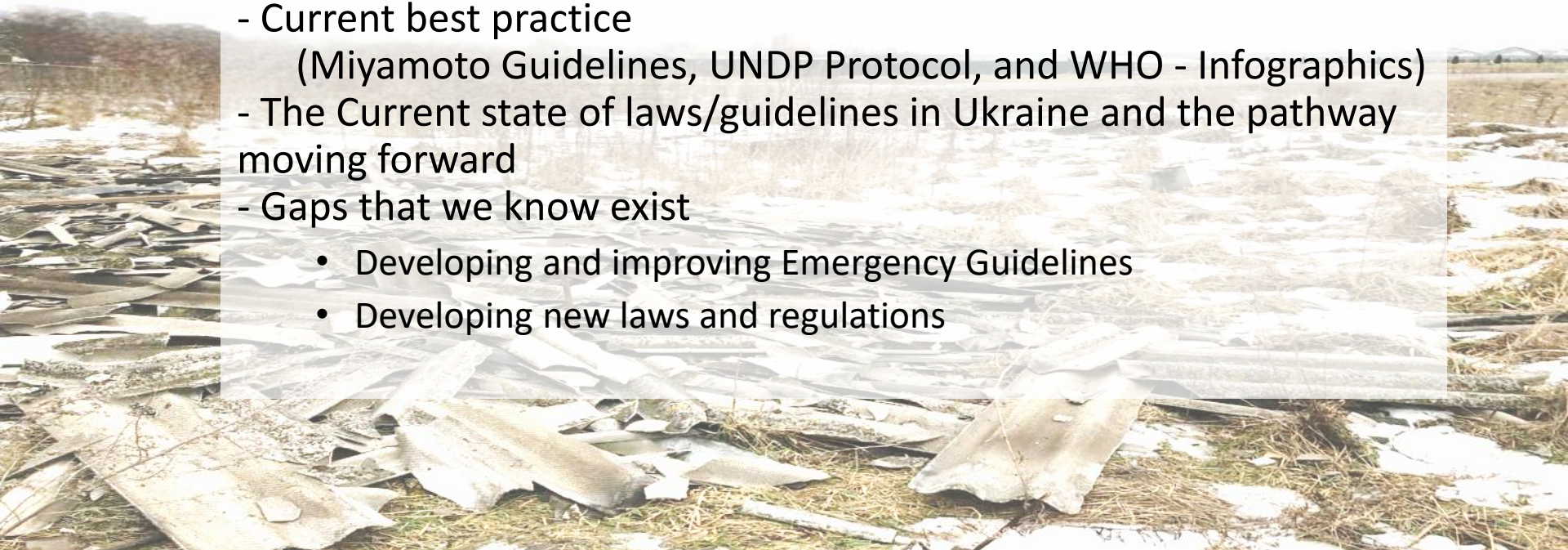


# Denys Pavlovskyi:

**Chemical Engineer, Senior Asbestos Management Expert**  
**UNDP Waste Management**

## The Ukraine Context

- What Asbestos is used for in Ukraine
- How Ukraine ended up with so much of it,  
and why we must now eradicate it
- Current best practice  
(Miyamoto Guidelines, UNDP Protocol, and WHO - Infographics)
- The Current state of laws/guidelines in Ukraine and the pathway  
moving forward
- Gaps that we know exist
  - Developing and improving Emergency Guidelines
  - Developing new laws and regulations





# Asbestos in Ukraine



## Chrysotile -White Asbestos

Asbestos Cement Products:  
Roofing, Fencing, Sidings, Insulation etc

# Friable Asbestos in Ukraine



Friable Asbestos content:

- Loose (bulk) insulation: usually 100%
- Thermal insulation: 6 – 85 %
- Insulation board: usually 15 – 25%, some up to 40%



# Non-friable Asbestos in Ukraine



Non-friable Asbestos content:

- Slates and tiles: 10 – 15 %
- Semi-compressed flat sheets: 10 – 25 %
- Asbestos-cement pipe: 15%
- Drainpipes: 15%

# Why so much in Ukraine

- Asbestos-cement production in Ukraine has been known for over 100 years.
- The largest consumer of chrysotile asbestos in Ukraine - asbestos-cement industry.
- More than 85% of imported chrysotile is used in the production of asbestos-cement products.
- During 2006 - 2016, 556 thousand tons of chrysotile asbestos were imported to Ukraine from Kazakhstan and Russia: *35.5% and 64.5%, respectively.*



Flagma.ua



# Total volume of roofing materials

- Residential buildings  
(587.7 million m<sup>2</sup>)
- Public sector of Ukraine  
(40.9 million m<sup>2</sup>)
- Agricultural production facilities  
(159.7 million m<sup>2</sup>)



# Current laws

Legal Text (date and number)	Description
Order of the Ministry of Health of Ukraine dated 01/10/2012 No. 762	State Sanitary Norms and Regulations on the safety and protection of workers from the harmful effects of asbestos and asbestos-containing materials
Law of Ukraine No. 2573-IX	On the Public Health System
Order of the State Committee of Ukraine for Industrial Safety, Labor Protection and Mining Supervision dated 04/16/2009 No. 62	Norms for the free issuance of certified special clothing, special footwear, and other personal protective equipment to employees of general professions in various industries
Order of the Ministry of Social Policy of Ukraine 29/11/2018 No. 1804	Minimum safety and health requirements for workers to use PPE at work
Order of the Ministry of Internal Affairs of Ukraine dated 04/08/2018 No. 656	Approval of Certain Regulations on the Road Transportation of Dangerous Goods



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# The Coming Ban of Asbestos

- September 6, 2022 - the **Law of Ukraine “On the Public Health System”** was adopted.
- October 1, 2023 – will come into force.
- Article 28 (part 3) –  
*“prohibits the use of asbestos, regardless of the type, the production of asbestos-containing products and their use in technological processes, and during construction and installation works at any objects.”*



# National Legislation Gaps

# July 09, 2023 – come into force the Law of Ukraine "On Waste Management System":

- Waste Classification laws
- Licensing for treatment of hazardous waste
- Rules for operation of Landfills
- Etc.



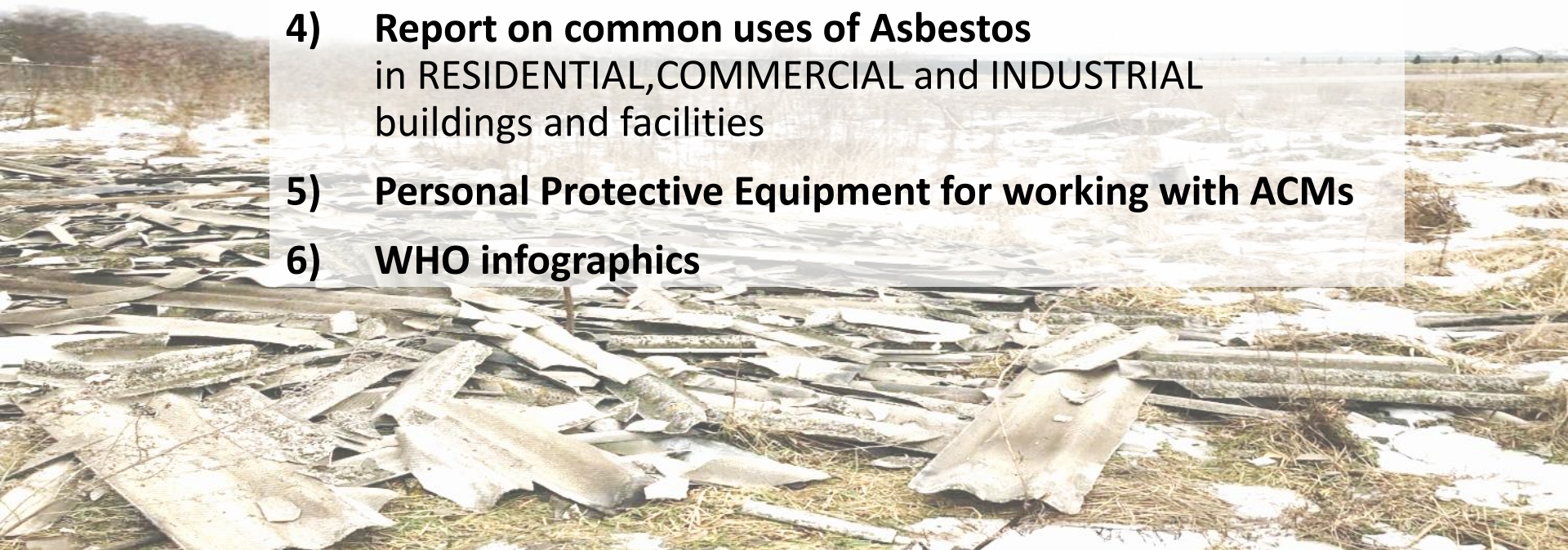
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# Ukraine Specific Resources

- 1) **UNDP Asbestos Waste Management Protocol**  
for UNDP Contractors and Partners
- 2) **Miyamoto Pragmatic Guidelines for Emergency Repairs**  
of Structures Containing Asbestos in Ukraine
- 3) **UNDP Contractor Training Materials**
- 4) **Report on common uses of Asbestos**  
in RESIDENTIAL, COMMERCIAL and INDUSTRIAL  
buildings and facilities
- 5) **Personal Protective Equipment for working with ACMs**
- 6) **WHO infographics**



# Protocol for UNDP Contractors

ASBESTOS WASTE MANAGEMENT PROTOCOL  
*for*  
UNDP CONTRACTORS AND PARTNERS

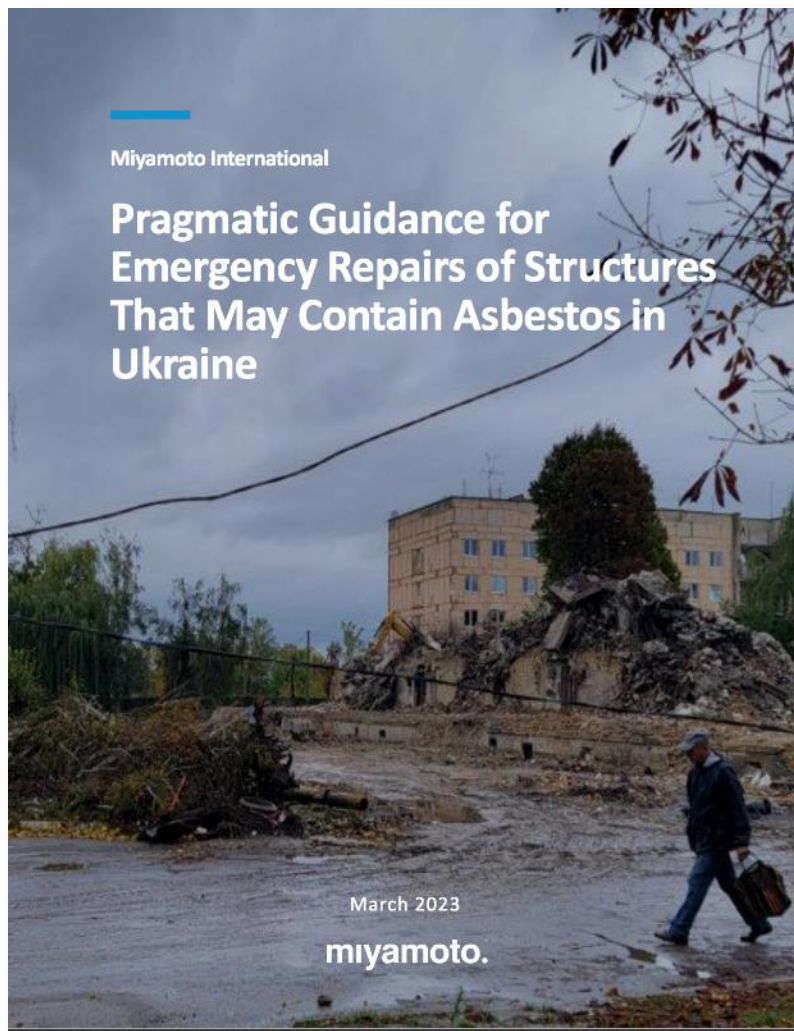
Version 4.0  
November 2022

ПРОТОКОЛ УПРАВЛІННЯ  
АЗБЕСТОВМІСНИМИ ВІДХОДАМИ ТА МАТЕРІАЛАМИ  
*ДЛЯ*  
ПІДРЯДНИКІВ ТА ПАРТНЕРІВ ПРООН

Версія 4.0  
Листопад 2022



# Miyamoto Pragmatic Guidelines





# UNDP Contractor Training Materials



  
From  
the People of Japan



**Training:** **Asbestos awareness  
workplace safety**

**TRAINER:** **Denys Pavlovskyi,  
Expert of asbestos use in Ukraine**

**Ukraine, Kyiv  
23-25 November 2022**



# Report on common uses of asbestos in Ukraine

## REPORT

*on all potential and common uses of*  
**ASBESTOS in RESIDENTIAL,  
COMMERCIAL and INDUSTRIAL**  
*buildings and facilities*

December 2022

## ЗВІТ

*про всі потенційні та поширені*  
*випадки застосування*  
**АЗБЕСТУ в ЖИТЛОВИХ,  
КОМЕРЦІЙНИХ та ПРОМИСЛОВИХ**  
*будівлях і спорудах*

December 2022

# Personal Protective Equipment

## PERSONAL PROTECTIVE EQUIPMENT FOR WORK WITH ACMs

Mandatory use of personal protective equipment (PPE) working with asbestos-containing materials and waste:

- respiratory protective equipment;
- protective clothing and footwear;
- eye protection (safety goggles);
- hand protection (gloves).

Training in the proper use and testing of personal protective equipment must be completed before starting work.



### *RULES FOR THE CHOOSING AND USING OF PERSONAL RESPIRATORY PROTECTIVE EQUIPMENT (RPE)*

**“Medical masks are not respirators!”**

#### How to choose a high-quality and effective respirator:

- included soft metal nose clip (nasal plate);
- tight fixation on the face during physical activity and active movements;
- the presence of a valve that provides normal breathing;
- ease of maintenance and operation.
- FFP3 respirators are highly efficient, clean up to 99% of impurities, allow working at concentrations that exceed the MAC by 50 times and protect the respiratory system from the harmful aerosols.
- FFP3 respirators are used when working with toxic dust, asbestos, radioactive dust and for protection against bacteria and viruses.
- also recommended half facepiece respirator (in accordance with the EN 140 standard) with a P3 filter; and
- a semi-disposable respirator (according to EN 405) with a P3 filter.



## ЗАСОБИ ІНДИВІДУАЛЬНОГО ЗАХИСТУ ДЛЯ РОБОИ ІЗ АЗБЕСТОВІСНИМИ МАТЕРІАЛАМИ

При роботі із азбестовісними матеріалами та відходами (АВМ) – обов'язкове використання засобів індивідуального захисту (ЗІЗ):

- респіратори спеціального типу;
- захисний одяг та взуття;
- захисні окуляри;
- захисні рукавиці.

Перед початком робіт, необхідно пройти навчання щодо належного використання та перевірки на придатність засобів індивідуального захисту.



### *ПРАВИЛА ВИБОРУ ТА КОРИСТУВАННЯ ЗАСОБАМИ ІНДИВІДУАЛЬНОГО ЗАХИСТУ ОРГАНІВ ДИХАННЯ (ЗІЗОД)*

**«Медичні маски — це не респіратори!»**

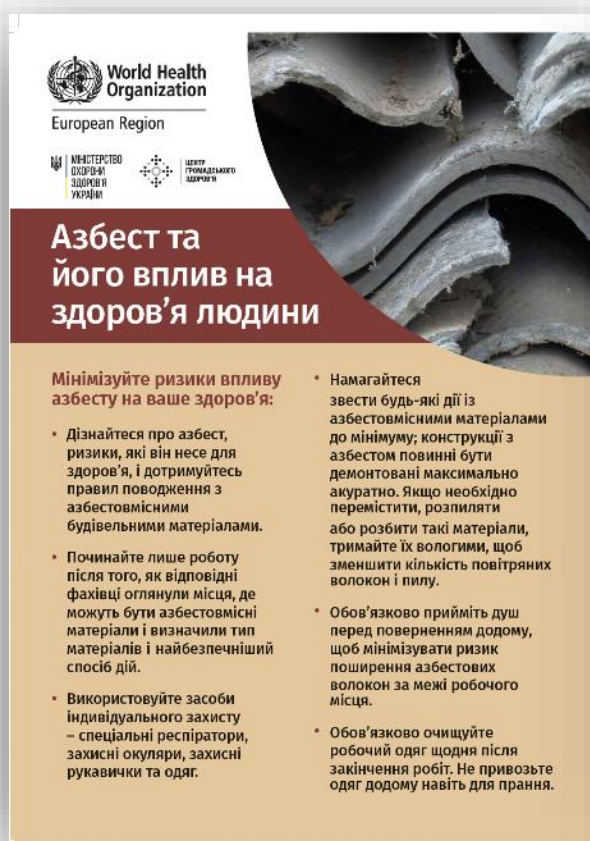
#### Як правильно обрати якісний та ефективний респіратор:

- наявний носовий затискач з м'якого металу;
- щільна фіксація на обличчі при фізичних навантаженнях та активних рухах;
- наявність клапану, що забезпечує нормальне дихання;
- простота в догляді та експлуатації;
- FFP3 респіратори мають високу ефективність, очищають до 99% домішок, дозволяють працювати при забрудненості до 50 ГДК і захищають органи дихання від дрібнодисперсних твердих і рідких аерозолів;
- FFP3 респіратори — використовують при роботі з токсичним пилом, азбестом, радіоактивним пилом та для захисту від бактерій і вірусів;
- також рекомендуються респіратор-напівмаска відповідно до стандарту EN 140 з P3 фільтром та;
- напівразовий респіратор відповідно до стандарту EN 405 з P3 фільтром.





# WHO Infographics



# WHO Infographics



European Region



МІНІСТЕРСТВО  
ОХОРОНИ  
ЗДОРОВ'Я  
УКРАЇНИ



ЦЕНТР  
ГРОМАДСЬКОГО  
ЗДОРОВ'Я



**Усі види азбесту є канцерогенними для людини.**

Вплив азбесту, зокрема, хризотилу, викликає рак легень, гортані та яєчників, а також мезотеліому (тип раку, який виникає в тонкому шарі тканини, що покриває більшість внутрішніх органів). Вплив азбесту також може викликати інші захворювання, зокрема фіброз легень.



European Region



МІНІСТЕРСТВО  
ОХОРОНИ  
ЗДОРОВ'Я  
УКРАЇНИ



ЦЕНТР  
ГРОМАДСЬКОГО  
ЗДОРОВ'Я



**Мінімізуйте ризики впливу азбесту на ваше здоров'я:**

- Використовуйте засоби індивідуального захисту.
- Намагайтеся звести будь-які дії із азбестовмісними матеріалами до мінімуму.
- Якщо необхідно перемістити, розпиляти або розбити азбестовмісні матеріали, тримайте їх вологими, щоб зменшити кількість повітряних волокон і пилу.
- Мийте руки перед їжею чи питтям.
- Прийміть душ перед поверненням додому.
- Очищуйте робочий одяг щодня після закінчення робіт. Не привозьте одяг додому навіть для прання.



# Miyamoto now developing Guidelines for Demolition

- **Demolition**
- **Transportation**
- **Disposal**

Advised by Dr. Ken Takahashi, former Director of  
The Asbestos Disease Research Institute (ADRI)











# Questions and Answers

## Further Resources

<https://bit.ly/MiyamotoUkraineAsbestosResources>

