



Asbestos & Environmental Services

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SURVEY, SAMPLING AND ASSESSMENT FOR ASBESTOS CONTAINING MATERIALS

At

**Renmore Barracks
Galway**

On behalf of

Defence Forces

Report Date: January 2022



Client:	Defence Forces	Date Surveyed: January 2022
Site:	Renmore Barracks, Galway	Report Date: January 2022 Revision: 0

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1.0 Introduction

MDK Analytical Ltd were instructed by Defence Forces to undertake a Refurbishment/Demolition survey of locker rooms 1 and 2.

1.1 Scope of Survey

- To undertake a Refurbishment/Demolition survey (as defined in HSG 264)
- To sample any materials suspected of containing asbestos and to analyse these for Asbestos type.
- To provide a written report detailing the locations of any asbestos found during the survey, its condition and any recommendations for further action.
- To include within the report representative photographs of asbestos containing materials.

1.2 Survey Aim

The purpose of the survey is to identify asbestos containing materials in the buildings where works are planned. The identification of the asbestos materials is to assist the designers and project supervisor design process to take account of the materials. The design team must eliminate the risk or prevent exposure during the construction phase. Asbestos is a “particular risk” as defined in the Safety, Health and welfare at Work (Construction) Regulations and must be accounted for in the design risk assessments accompanying the Preliminary Safety and Health Plan.

1.3 Glossary of Terms

Glossary of Terms and/or abbreviations that may appear in this report	
MDK	MDK Analytical Ltd
HSG264	Asbestos: The Survey Guide
HSG248	Asbestos: The analysts guide for sampling, analysis and clearance procedures.
ACM's/presumed ACM's	Asbestos containing materials/presumed asbestos containing materials. Materials are allowed to be presumed to contain asbestos under the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations.
Manage	Where asbestos materials are in good condition and pose minimal risk to building occupants (or those who may carry out maintenance work) and are to be left in-situ, should be monitored on a regular basis to determine their condition for actioning.

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Encapsulation	Asbestos containing materials that are damaged but are to remain in-situ should be repaired by a competent trained asbestos contractor with a suitable protective coating and labelled as to the presence of asbestos.
Labelling	Fixing of 'a' labels to identified asbestos.
Register	A register of details including nature/ location/ extent/ condition of material which should be brought to the attention of all persons who might plan or undertake works in the building/site.

1.4 1.5 The following lists the 6 commercial asbestos types

Serpentines	
Chrysotile	White Asbestos
Amphiboles	
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Tremolite	
Fibrous Anthophyllite	
Fibrous Actinolite	



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2.0 Executive Summary of Findings

Within the scope of this survey, asbestos containing materials have been identified as follows:

2.1 Asbestos Containing Materials

Locker rooms 1 and 2

- Ground Floor Boiler room - Pump flange gaskets - Gaskets (compressed)
- Ground Floor Ladies locker room - Liberty unit heaters - Woven Product
- External Roof - Slates - Cement Product

3.0 Description of site

Site Address:	Renmore Barracks, Galway
Client:	Defence Forces
Lead Surveyor:	Niall Keating
Type of Survey:	Refurbishment/Demolition survey to HSG264

3.1 General Building Description

Single storey masonry structure with a timber pitched slated roof and a double height flat roof to the rear.

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4.0 Extent of Survey and Survey Limitations

4.1 Extent of Survey

- Locker rooms 1 and 2.

4.2 Physical Scope and Limitation of the Survey

All accessible areas within the scope of works areas were visually examined for asbestos in accordance with the brief for this investigation. There was no invasive opening up carried out as the building is still functional. Whilst great care has been taken to ensure that all asbestos materials have been identified and located, no survey can guarantee that all asbestos materials within the scope of works areas have been discovered. If any suspect materials are discovered during works, the work should cease until the material has been assessed for asbestos fibres. Electrical/mechanical equipment were not accessed as part of the survey. No subfloor covering investigation took place. There was no access to the flat roof of the double height section of the building.

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5.0 Sampling & Analytical Methodology

5.1 Sampling

Sampling was carried out in accordance with UK Guidance documents HSG 264 & 248 procedures.

The areas within the scope of the survey were visually assessed for the presence of suspect materials that could potentially contain asbestos fibres.

Representative samples of suspect materials identified were taken and returned to our laboratory for analysis by the Polarised Light and Dispersion Staining Technique method as detailed in Appendix 2 of the Health & Safety Executive's guidance document HSG 248.

5.2 Surveyor(s) equipment

Surveyors were equipped with standard domestic tools, e.g., torches, screwdrivers, chisels, etc.

No provision was made for the supply of specialist access or lifting equipment etc.

5.3 Health and Safety

Surveys were carried out in a safe and unobtrusive manner.

All necessary personal protective equipment (PPE) and respiratory protective equipment (RPE) was supplied and used appropriately by the surveyor(s) in execution of the survey.

5.4 Laboratory analysis

Samples of suspect materials were analysed using laboratory analysis techniques, based on stereo microscopy, polarised light, dispersion staining techniques and Appendix 2 of HSG 248: 'Asbestos: The Analysts' guide for sampling and clearance procedures.

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6.0 Conclusions and Recommendations

Recommendations: The asbestos containing materials will be interfered with as part of the proposed works and should be removed under controlled conditions by a specialist contractor. A management system/plan including routine re-inspections of control measures should be adopted to monitor the materials. Site and task specific risk assessments should be carried out ahead of any work in proximity to the materials.

Following the removal or encapsulation of asbestos containing materials a certificate of re-occupation must be obtained from an independent analytical consultancy company prior to re-occupancy of the area in accordance with section 15 of the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations. Following the removal or encapsulation of asbestos containing materials a certificate of re-occupation must be obtained from an independent analytical consultancy company prior to re-occupancy of the area in accordance with section 15 of the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations. If asbestos containing materials are to remain in-situ, then by reference to the HSA "Asbestos-containing Materials in Workplaces" it is essential that an asbestos management plan be prepared to facilitate this.

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7.0 Asbestos Removal Works

All work involving materials containing asbestos requires a written risk assessment and a plan of work to be prepared by a competent person as per the Safety, Health and Welfare at Work (exposure to asbestos) Regulations 2006/2010. Under these Regulations a preliminary health and safety plan must be drawn up by the project supervisor for the design stage (PSDP) on all asbestos removal projects. This plan must specify, among other items, any particular risk which exists at the premises, including the presence of asbestos-containing materials. The Project Supervisor Design should make provision for the following as a minimum:

- Preparation of asbestos removal/encapsulation specification/Preliminary S&H Plan
- Liaison with contractors
- Liaison with the Health and Safety Authority
- Ensuring correct notification etc.
- Air monitoring during asbestos works
- Supervision of working, including smoke testing of work enclosures
- Asbestos site clearance certification
- Advise on disposal/storage arrangements

Asbestos removal should only be undertaken by competent persons, following notification of the works to the Health and Safety Authority. A detailed site-specific method statement should be developed by the competent person, and forwarded as part of the notification process to the Health and Safety Authority

Some Key Requirements

These Regulations apply to all types of asbestos (including asbestos cement) and to all work activities that could expose persons to risks arising from the inhalation of asbestos dust or fibres. The regulations impose a duty on employers to ensure that 'no employee' is exposed to an airborne concentration of asbestos in excess of 0.1 fibres per cm³ as an eight-hour time weighted average. Employers must assess whether asbestos is present prior to any work activity if asbestos containing materials are suspected. This risk assessment should identify the type and condition of asbestos, the associated risk from the materials and steps required to minimize exposure. All such findings must be recorded in a permanent form. If exposure is unavoidable, it must be reduced to a minimum and in any event below the exposure limit. They require that adequate information, instruction and training be provided to workers with respect to the potential risk to their health should they be exposed to asbestos fibres and outline the precautions and procedures to be taken to provide adequate protection. Information regarding the planned removal of materials containing asbestos must be set out in a written document ('Plan of Work') and must include the site-specific measures required to ensure the activity is performed in a safe manner and that adequate control measures are used to protect those performing the activity as well as others who may be affected by the work activity. An employer must submit a notification, in writing, to the Health and Safety Authority where the planned asbestos-related work activity will expose, or could possibly expose, his or her workers to a concentration of asbestos fibres in air in excess of defined fibre concentration limits. This notification applies to all types of asbestos (including asbestos cement) once there is the possibility that the limit could be exceeded.

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Appendix 1 - Asbestos Register

Locker rooms 1 and 2							
Location and Use of Material	Quantity (Approx.)	Asbestos Type	Condition	Material Assessment	Recommended Action	Priority Assessment	Next Assessment
Ground Floor Boiler room 003 - Pump flange gaskets: Gaskets (compressed) - S004	5no	Chrysotile	Low Damage	4	Remove under controlled conditions	1	January 2023
Ground Floor Ladies locker room 004 - Liberty unit heaters: Woven Product - Presumed	2no	Chrysotile	Good Condition	4	Remove under controlled conditions	1	January 2023
External Roof 001 - Slates: Cement Product - S001	770m ²	Chrysotile	Good Condition	3	Remove under controlled conditions	1	January 2023

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Locker rooms 1 and 2

Reference Samples	Analysis	Sample Reference
Pump flange gaskets: Gaskets (compressed)	Chrysotile	S004
Liberty unit heaters: Woven Product	Chrysotile	Presumed
Slates: Cement Product	Chrysotile	S001

Glossary	
NAD	No asbestos detected
MMMF	Manmade mineral fibre

*Asbestos fibre type	Commonly known as
Chrysotile	White asbestos
Amosite	Brown asbestos
Crocidolite	Blue asbestos

We wish to state that the analysis of the material(s) is limited to the sample(s) tested or examined. This does not guarantee that the balance of the material(s) from which the sample was taken is of equal proportion or contains the same constituents as those in the sample(s) tested. Analytical technique: Stereo and polarised light microscopy together with dispersion staining techniques based on The Analyst Guide HSG 248

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Appendix 2 - Asbestos Data Sheets

Type	Chrysotile	
Material	Pump flange gaskets Gaskets (compressed)	
Location	Locker rooms 1 and 2 Ground Floor Boiler room 003	
Quantity	5 no	
Sample No.	S004	
Date	27/01/2022	
Condition	Low Damage	
Recommendation	Remove under controlled conditions	
Risk	Very Low	
Lead Surveyor	Niall Keating	

Type	Chrysotile	
Material	Liberty unit heaters Woven Product	
Location	Locker rooms 1 and 2 Ground Floor Ladies locker room 004	
Quantity	2 no.	
Sample No.	Presumed	
Date	27/01/2022	
Condition	Good Condition	
Recommendation	Remove under controlled conditions	
Risk	Very Low	
Lead Surveyor	Niall Keating	

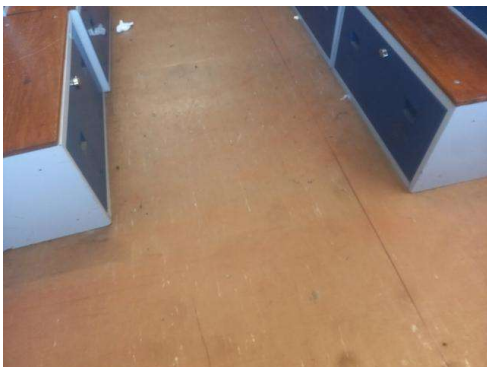
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Type	Chrysotile	
Material	Slates Cement Product	
Location	Locker rooms 1 and 2 External Roof 001	
Quantity	770 m ²	
Sample No.	S001	
Date	27/01/2022	
Condition	Good Condition	
Recommendation	Remove under controlled conditions	
Risk	Very Low	
Lead Surveyor	Niall Keating	

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Appendix 3 - Non-Asbestos Containing Materials Data Sheets

Type	NAD	
Material	Plasterboard	
Location	Locker rooms 1 and 2 Ground Floor Locker room ceiling 002	
Quantity		
Sample No.	S002	

Type	NAD	
Material	Lino	
Location	Locker rooms 1 and 2 Ground Floor Locker room floor 002	
Quantity		
Sample No.	S003	

Type	NAD	
Material	Insulation to pipework	
Location	Locker rooms 1 and 2 Ground Floor Boiler room 003	
Quantity		
Sample No.	No Asbestos Suspected	

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Type	NAD	
Material	Insulation	
Location	Locker rooms 1 and 2 Ground Floor Ceiling void above lady's shower block 004	
Quantity		
Sample No.	S005	

Type	NAD	
Material	Plasterboard	
Location	Locker rooms 1 and 2 Ground Floor Ceiling lady's locker room 004	
Quantity		
Sample No.	No Asbestos Suspected	

Type	NAD	
Material	Plasterboard to window reveals	
Location	Locker rooms 1 and 2 Ground Floor Male locker room 004	
Quantity		
Sample No.	No Asbestos Suspected	

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Appendix 4 - Material Assessment Algorithms

Sample Variable	Score	Examples of scores (see notes for more detail)
Product Type (or debris from product)	1	Asbestos reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, asbestos cement etc.)
	2	AIB, Millboards, other low-density insulation boards, asbestos textiles, gaskets, ropes and woven textiles, asbestos paper and felt.
	3	Thermal insulation (e.g., pipe and boiler lagging), sprayed asbestos, loose asbestos, asbestos mattresses and packing.
Extent of damage/ deterioration	0	Good condition, no visible damage.
	1	Low damage: a few scratches or surface marks, broken edges on boards, tiles etc.
	2	Medium damage: significant breakage of materials or several small areas where material has been damaged revealing loose asbestos fibres.
	3	High damage or delamination of materials, sprays and thermal insulation. Visible asbestos debris.
Surface treatment	0	Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles.
	1	Enclosed sprays and lagging, AIB (with exposed face painted or encapsulated) asbestos cement sheets etc.
	2	Unsealed AIB, or encapsulated lagging and sprays.
	3	Unsealed lagging and sprays.
Asbestos Type	1	Chrysotile
	2	Amphibole asbestos containing Crocidolite
	3	Crocidolite
Total		

Material Assessment Score Table

Score	Potential to release asbestos fibres
10 or more	High
7 – 9	Medium
5 – 6	Low
4 or less	Very Low

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Appendix 6 - Priority Assessment

It's worth noting that a high score in the material assessment may not always require a high priority action, for example, if the asbestos material is in an area never entered.

The priority assessment takes into account other issues, these primarily relate to human factors. The additional factors included in the priority assessment include the following:

- Occupant activity (Primary & Secondary activities/uses)
- Likelihood of disturbance (Location, Extent, Accessibility)
- Human exposure potential (frequency of maintenance on asbestos containing material, average time in area & number of occupants)
- Maintenance activities (Frequency and Type of maintenance)

Each sub-category on the priority assessment is then scored from 0 to 3. An average score is then calculated for each sub-category.

For the priority risk assessments, the calculation procedure is that an average score is taken for the sub-headings under the four main categories, which can give a total maximum score for the priority risk assessments of 12. This maximum score is the same as that achievable on the material risk assessment scores and the reason for this is that there is a balance between the priority score and the material assessment score.

Finally, to obtain the actual priority assessment score, the material assessment score must be added to the score from the priority table. In contrast with the material assessment there is no pre-determined score table to compare the results of the priority assessment to.

Careful consideration of the scores for a number of typical asbestos containing products highlights the difficulty in drawing conclusions from their resultant scores, for example, floor tiles containing Chrysotile asbestos located within an occupied area would score higher than Amosite containing insulating board within a boiler room door. This is primarily a function of location and occupation parameters, but conclusions drawn from each score may result in unsuitable or incorrect decisions.

It is the policy of MDK Analytical Ltd not to try and determine the priority of the management action purely on the basis of a score table. Instead, each category on the priority assessment is carefully studied as part of the overall score and the recommended control action is based on this information coupled to experience gained with a wide selection of asbestos containing materials.

Although the priority score does not refer to an exact management action, it is still important to calculate the value and make reference within the discussion text of the report. This demonstrates that full consideration has been given to every aspect of an asbestos containing material and subsequently the correct management actions can be formulated.

Prioritisation of Removal Works.

Prioritisation of removal works are based on the following priority ratings.

Priority 1: Asbestos removal works requiring immediate attention if the works will interfere with the asbestos containing material.

Priority 2: Asbestos removal works requiring attention within a medium time frame.

Priority 3: No immediate attention required due to its present condition. Remove prior to any works - likely to cause disturbance and monitor for signs of deterioration.

Priority 4: No significant risk of fibre release- Remove prior to disturbance works.