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Date of latest update	
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2006-2007	2008-2009	2010-2011	2012-2013
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<b>General Country (National Association) Information</b>
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1	Association <small>Name of the Association</small>				
2	Country				
3	Sector				
4a	Number of Sites <small>Count of line 4a - Company Level</small>				
4b	Number of Reported Sites <small>Sum of line 4b - Company Level</small>				
4c	% of Reported Sites <small>Line 4b divided by line 4a; it gives the % of implementation of the Reporting in term of number of Sites</small>				
5a	Number of Employees <small>Sum of line 5a - Company Level</small>				
5b	Number of Reported Employees <small>Sum of line 5b - Company Level</small>				
5c	% of Reported Employees <small>Line 5b divided by line 5a; it gives the % of implementation of the Reporting in term of number of Employees</small>				

<b>Exposure Risk</b>
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7	Number of Employees potentially exposed to Respirable crystalline silica <small>Sum of line 7 - Company Level</small>				
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<b>Risk Assessment &amp; Dust Monitoring</b>
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8	Number of Employees covered by risk assessment (1) <small>Sum of line 8 - Company Level</small>				
9	Number of Employees covered by exposure monitoring (2) <small>Sum of line 9 - Company Level</small>				
10	Number of Employees with risk assessment requiring Health Surveillance Protocol for Silicosis (3) <small>Sum of line 10 - Company Level</small>				

<b>Health Surveillance</b>
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11	Number of Employees covered by generic health surveillance protocol <small>Sum of line 11 - Company Level</small>				
12	Number of Employees covered by Health Surveillance Protocol for Silicosis <small>Sum of line 12 - Company Level</small>				

<b>Training</b>
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13	Number of Employees covered by information, instruction and training on General Principles (4) <small>Sum of line 13 - Company Level</small>				
14	Number of Employees covered by information, instruction and training on Task Sheets (5) <small>Sum of line 14 - Company Level</small>				

<b>Good Practices</b>
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15	Technical measures to reduce generation/dispersion of Respirable crystalline silica <small>Sum of line 15 - Company Level</small>				
16	Organizational measures and Good Practices at work <small>Sum of line 16 - Company Level</small>				
17	Distribution and use of Personal Protective Equipment, where necessary (6) <small>Sum of line 17 - Company Level</small>				

<b>Key Performance Indicators</b>
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18	% of Employees potentially exposed to Respirable crystalline silica <small>Line 7 divided by line 5b; it gives the % of total Employees working in contact with materials potentially generating Respirable crystalline silica</small>				
19	% covered by risk assessment <small>Line 8 divided by line 7; it gives the % of implementation of the risk assessment procedure</small>				
20	% covered by exposure monitoring <small>Line 9 divided by line 7; it gives the % of implementation of the dust monitoring protocol</small>				
21	% with risk assessment requiring Health Surveillance Protocol for Silicosis <small>Line 10 divided by line 7; it gives the % of Employees with potentially high exposure</small>				
22	% covered by generic health surveillance <small>Line 11 divided by line 7; it gives in %, the commitment of the Company towards generic health monitoring or compliance with national laws</small>				
23	% covered by Health Surveillance Protocol for Silicosis <small>Line 12 divided by line 10; it gives the % of implementation of the specific Health Surveillance Protocol for Silicosis</small>				
24	% covered by information, instruction and training on General Principles <small>Line 13 divided by line 7; it gives the % of implementation of General Principles regarding</small>				
25	% covered by information, instruction and training on Task Sheets <small>Line 14 divided by line 7; it gives the % of implementation of required Task Sheets</small>				
26	% of Technical measures to reduce generation/dispersion of Respirable crystalline silica <small>Line 15 divided by line 4b; it gives the % of Sites where the specific measure is adopted</small>				
27	% of Organizational measures <small>Line 16 divided by line 4b; it gives the % of Sites where the specific measure is adopted</small>				
28	% of Distribution and use of Personal Protective Equipment, where necessary <small>Line 17 divided by line 4b; it gives the % of Sites where the specific measure is adopted</small>				

<b>Key Notes</b>
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Insert any relevant comment on the implementation of the Agreement at Country level ( e.g. highlight positive or non satisfactory achievements, announce future improvement programs, describe new good practices adopted .....)

Name:		
Position:		
Date: ___ / ___ / ____	Signature	

<p>(1) The Risk Assessment procedure can be found in the <i>Annex I - Good Practices</i> to the Agreement ( Good Practice Guide, Part I, Chapter 4)                  (2) Refer to the <i>Annex 2 - Dust Monitoring Protocol</i> to the Agreement                  (3) Refer to the <i>Annex 8 - Health Surveillance Protocol for Silicosis</i> to the Agreement                  (4) General prevention principles are illustrated in <i>Annex 1 - Good Practices</i> to the Agreement (Good Practice Guide, Part I, Respirable Crystalline silica essentials)                  (5) Good Practices are illustrated in <i>Annex 1 - Good Practices</i> to the Agreement (Good Practice Guide, Part II, General and Specific Task Sheets)                  (6) A task sheet on PPE can be found in <i>Annex 1 - Good Practices</i> to the Agreement (Good Practice Guide, Part II, Task sheet 2.1.15)</p>
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#### **Annex 4 - List of Research Projects**

##### **Past research projects:**

Scientific opinion on the health effects of airborne Crystalline Silica, IOM report, 1996.

The quartz hazard: a variable entity, K Donaldson & PJA Borm, Amer. J. Occup. Hyg. 42 (5), 287-294, 1998.

Evaluation & comparison of personal dust & quartz exposure, measurements from the UK & German silica producers industry, IOM report to client, 1998.

Epidemiological evidence on the carcinogenicity of silica: factors in scientific judgments, C. Soutar et al, Amer. J. Occup. Hyg. 44 (1) 3-14, 2000.

Inflammatory effects of respirable quartz collected in workplaces versus DQ12 quartz: Particle surface correlates, A. Clouter et al, Toxicol. Sc. 63, 90-98, 2001.

In vitro genotoxicity assessment of commercial quartz flours in comparison to standard DQ12 quartz, G. Cakmak et al, Int. J. Hyg. Environm. Health, 207 (2004); 105-113.

Different toxic, fibrogenic and mutagenic effects of four commercial quartz flours in the rat lung, F. Seiler et al, Int. J. Hyg. Environm. Health, 207 (2004); 115-124.

Determining significant variance of biological activity between different respirable quartz flours by a vector model, J. Bruch et al, Int. J. Environm. Health (accepted).

Relationships between the state of the surface of four commercial quartz flours and their biological activity in vitro and in vivo, B. Fubini et al, Int. J. Hyg. Environm. Health, 207 (2004); 89-104.

Mortality in the UK Industrial Sand Industry: 1. Exposure Assessment and 2. Mortality, T.P. Brown and L. Rushton, accepted for publication in Occupational and Environmental Medicine Journal (OEMJ) in 2005.

## **Annex 5 - Descriptions of Industries**

### **Aggregates**

Aggregates are a granular material used in construction. Nearly 3 billion tonnes of aggregates are produced and used in Europe annually. However, a majority of operators in the sector are small and medium sized enterprises. A typical small site provides direct employment for 7 to 10 persons. The aggregates industry consists of around 25,000 extraction sites across Europe, with 250,000 employees in the EU.

The most common natural aggregates are sand, gravel and crushed rock with a wide range of free silica content (from 0% to 100%). Subject to the individual risk assessments to be carried out under this Agreement, only the deposits with a high content of silica are relevant. But even in such cases, the risks of Respirable crystalline silica exposure for workers are normally low. Aggregates produced from rocks containing a small percentage of silica are, without prejudice to individual risk assessment, likely to be negligible in terms of their impact on worker's health.

### **Ceramics industry**

The ceramics industry uses silica principally as a structural ingredient of clay bodies and as a major constituent of ceramic glazes. The principal ceramic products containing silica include tableware and ornamental ware, sanitary ware, wall and floor tiles, bricks and roof tiles, refractories etc.

Around 2,000 companies produce ceramics in the EU. The number of employees in the EU ceramics industry is estimated at around 234,000. The ceramic industry is present in virtually all EU Member States.

### **Foundries**

The foundry industry's products are ferrous, steel or non-ferrous metal castings produced by pouring molten metal into moulds which are typically, in total or in parts, made of bonded silica sand. The foundry industry is an important supplier to the automotive industry, mechanical engineering and other industries. It is a branch of mostly small and medium sized companies: roughly 4,000 foundries with 300,000 employees are situated in the EU Member States.

### **Glass Industry**

Silicon dioxide is the principal glass forming oxide and thus silica sand is the major ingredient in all types of glass. The main glass products include packaging glass (bottles, jars etc.), flat glass (for buildings, mirrors, cars, etc.), domestic glass (tableware: drinking glasses, bowls; decoration, etc.), glass fibre (for reinforcement, insulation) and special glass (for tv, laboratory, optics etc.).

More than 1,000 companies produce glass in the EU. The glass industry is present in all European countries and employs more than 230,000 people in the EU.

After melting the raw material, there is no crystalline silica any more. Glass is an amorphous material.

### **Industrial Minerals and Metalliferous Minerals industries**

Industrial Minerals:

A number of industrial minerals products are composed of silica. Silica is found commonly in the crystalline state but occurs also in an amorphous (non-crystalline) state. Crystalline silica is hard, chemically inert and has a high melting point. These are prized qualities in various industrial uses, mainly in the glass, foundry, construction, ceramic and chemicals industries. 145 million tons of

industrial minerals (e.g. bentonite, borate, calcium carbonate, diatomite, feldspar, gypsum, kaolin & plastic clay, talc, etc) are extracted every year in Europe. Although not all do, industrial minerals may contain variable amounts of crystalline silica.

Those industrial minerals are produced by 300 companies or groups operating about 810 mines and quarries and 830 plants in 18 EU Member States, and in Switzerland, Norway, Turkey, Bulgaria, Romania and Croatia. The industrial minerals industry employs about 100,000 persons in the EU.

Metal ores:

A wide range of metal ores are extracted within the EU and for some, such as mercury, silver, lead, tungsten, zinc, chromium, copper, iron, gold, cobalt, bauxite, antimony, manganese, nickel, titanium, the EU is a relatively significant producer. In some cases, the European producers rank amongst the first ten producers in the world.

Metal ores are produced in 12 EU Member States as well as in Norway, Turkey, Bulgaria, Romania, Kosovo and Serbia. In the EU, this section of the mining and minerals industry employs directly about 23,000 people.

Although not all do, metal ores may contain variable amounts of crystalline silica.

### **Cement Industry**

Cement is a powdered substance mainly used as the binding agent in the making of concrete. It is produced through several stages, basically made up of the two following essential phases:

- manufacture of a semi-finished product, so-called "clinker", obtained from the calcination in a high-temperature kiln (1 450°C) of a "raw mix" made up of a mixture of clay, limestone, and several other additives.

- manufacture of cement as a finished product, obtained by the homogeneous mixture of the ground clinker and calcium sulphate (gypsum) with or without - depending on the type of cement - one or more additional components: slag, fly ash, pozzolana, limestone, etc.

In 2004, the cement production of the current 25 Member States of the EU has reached 233 million tons, about 11% of the total world production (2,1 billion tons).

There are nearly 340 plants in the EU. Four of the five largest cement companies in the world are European. The cement industry employs about 55,000 persons in the EU.

### **Mineral Wool**

Mineral wool has a unique range of properties, combining high thermal resistance with long-term stability. It is made from molten glass, stone or slag that is spun into a fibre-like structure which creates a combination of thermal, fire and acoustic properties, essential to the thermal and acoustic insulation as well as to the fire protection of domestic and commercial buildings or industrial facilities.

These properties derive from its structure, a mat of fibres which prevent the movement of air, and from its chemical composition.

Insulation manufacturers are developing to meet the growing environmental concerns of society, improving standards and regulations for the use of insulation materials.

Among mineral wools, only glass wool is of concern with regard to crystalline silica as glass wool is manufactured using sand, whilst stone wool is not. After melting the raw material for glass wool, there is no crystalline silica any more, as it becomes an amorphous material.

The mineral wool industry is present in all European countries and employs over 20,000 people across the EU.

## **Natural Stone Industry**

Dimension stone exists in nature as an almost ready-made building material. Few realize, however, that it takes millions of years for this material to get to the point at which it can be easily produced and processed.

The industry consists only of small and medium sized companies of between 5 to 100 employees and is an essential supplier of the building industry. More than 40,000 companies exist in the EU, employing around 420,000 persons in the EU. Work with natural stones not only covers the production of stone in quarries, much more important is the processing of stones and the implementation of stones. Restoration and high-tech applications need qualified education and training which starts with stone workers up to high-tech stone engineers.

## **Mortar Industry**

Mortar is defined as a mixture of aggregates, generally with a grain size of less than 4 mm (sometimes less than 8 mm, e.g. mortar for special decorative renders or floor screed mortar) and one or more binders and possibly additives and/or added mixtures.

Mortar with inorganic binders contains in addition water. The application and use of mortar is not limited to masonry constructions. The field of floor screed mortar is growing. There are many special kinds of mortar which are used for concrete repair, for tile fixing, for roofs, for the anchoring of bolts and for many other applications.

In addition the external thermal insulating composite systems (ETICS) are also a product of the mortar industry playing an important role in energy saving measures. More than 1,300 companies produce mortar in the EU. The EU mortar industry has more than 34,400 employees.

## **Precast Concrete Industry**

Precast concrete is a factory-made building material widely used worldwide and available in all sizes and forms, from very small paving units to more than 50 meters long bridge elements.

Its production process consists in mixing cement, aggregates, water, additives and admixtures in different proportions, pouring them in moulds and let them harden. The products are supplied to the market in a dust-free hardened state. Dust generation can mainly occur in raw material handling and post-manufacturing mechanical treatments.

The industry is composed of small to medium-size enterprises, spread all over Europe. Estimated figures for the EU are: 10,000 production units, 250,000 workers and 300 to 400 million tons of products.

## **Annex 6 – The Council – The Secretariat**

### **Article 1 - Scope**

The Council is in charge of the tasks assigned to it under Article 8 of the Agreement. However, the tasks listed in Article 8 (2) (b) and (d) of the Agreement shall be in the exclusive and joint competence of the four Chairpersons designated in accordance with Article 3 hereunder.

### **Article 2 – Meetings / Decisions**

- (1) The Council shall meet at least once every second year for two days, during the second half of June of the respective year in Brussels. The Secretariat will provide logistical and secretarial support for this meeting and will organize and call for the meeting.
- (2) Members will receive the Employer Parties' consolidated reports 20 business days before the first day of the respective meeting for preparation of the meeting. During the two day meeting, Members shall prepare and draft the Summary Report as required by Article 8 (2) of the Agreement. Minority statements and opinions shall be recorded in an Appendix but shall be kept to a minimum.
- (3) The two Co-Chairpersons designated under Article 3 below may jointly decide to hold more frequent meetings if they consider this necessary.
- (4) Members can issue proxies to other Members or Alternate Members.

### **Article 3 - Chairpersons**

The Council will be chaired by two Co-Chairpersons, and two Co-Vice-chairpersons, each appointed by the Parties representing Employees and Employers for terms of four years, for the first time at the date of the signature of this Agreement.

### **Article 4 - Minutes, Records**

- (1) The Council meetings shall be minuted. Minutes will be provided to the Parties within two weeks after the respective meeting. Unless Members object to the minutes within one further week, minutes shall be considered as final.
- (2) The Secretariat or a third party appointed by it shall maintain all records in relation to the Council.

### **Article 5 – Costs of the Council / Secretariat**

All common reasonable and justified expenses / costs emanating from the operation of the Council (meeting room, simultaneous interpretation in FR / EN / DE excluding individual travel and accommodation) and from the Secretariat shall be equally split among the Parties representing Employers.

### **Article 6 - Liability, Indemnification**

- (1) Membership in the Council is on behalf of the Parties represented and Members and Alternate Members can therefore not be held individually and directly liable for their membership duties.
- (2) Parties shall jointly and severally indemnify and hold harmless Members, Alternate Members, their heirs and successors from and against any and all claims, fees, costs, expenses, liabilities

and damages (including reasonable attorneys' fees) reasonably incurred or imposed upon them in connection with or resulting from any action, suit, proceeding or claim to which they may be made party or may become involved in relation to or as a result of their membership in the Council, unless the action, suit, proceeding or claim has been caused by willful misfeasance or malfeasance in their duties.

**Article 7 – Notifications / Language**

All notifications, collection and dissemination of documents under Annex 6 shall be done by electronic mail. Communications from and to the Council shall be routed through the electronic mail addresses of the Secretariat. All notifications, communications and meetings shall be conducted in the English language.

## **Annex 7- Procedure for the Adaptation of the Good Practices**

Pursuant to Article 1 Third Indent of the Agreement, the Agreement aims, among other, at increasing the knowledge about Good Practices. In accordance with this 'dynamic' nature of the Good Practices and pursuant to Article 5 (3) of the Agreement, this Annex provides the procedure to be followed for adaptation of the Good Practices.

### **Article 1 – Submission of New or Revised Task Sheets to the Parties**

Employers and Employees are encouraged, at any time during the duration of the Agreement, to submit to the Party by which they are represented (the Introducing Party), draft new or revised existing Task Sheets (both hereafter 'New Task Sheets'), accompanied, in the case of draft revised existing Task Sheets, by a written explanation and justification why and how these draft revised existing Task Sheets constitute an improvement of workers protection or achieve the same protection by alternative practices and techniques compared to the existing Task Sheets. The Introducing Party shall assess and may support such New Task Sheets.

### **Article 2 – Agreement of New Task Sheets by the Industry Counterpart ('Mirroring' Party)**

Pursuant to having expressed its support under Article 1 above, the Introducing Party shall submit the supported New Task Sheets to their industry counterpart for discussion and approval. It is for the respective Mirroring Parties to organize their exchange of views on and approval of the New Task Sheets. Once approved by both parts of the industry, the New Task Sheets will be submitted to the Council (Article 8 (2) of the Agreement).

### **Article 3 – Adoption by the Council**

The Council is responsible for the final review and adoption of New Task Sheets in order to ensure that the New Task Sheets do not conflict with the Agreement (including other Task Sheets, other parts of the Good Practices etc.). This includes the withdrawal of outdated Task Sheets.

### **Article 4 – Validity of Adaptations**

Following Article 3 adoption, all adaptations of the Good Practices shall be communicated via electronic mail or Extranet to the other Parties. They shall be valid three months after their communication, unless another validity date is stipulated by the Council.

### **Article 5 – Frequency of the Adaptation Procedure**

It is recalled that the Council will meet at least every second year. Parties are therefore encouraged to bundle their adaptation requests if at all feasible in line with the Council's meeting schedule.

## **Annex 8 – Health Surveillance Protocol for Silicosis**

### **GENERAL GUIDELINES**

Employers shall in the first instance carry out a workplace risk assessment as it is described in the Good Practice Guide, to identify where Employees may be at specific risk from health hazards related to Respirable crystalline silica. The implementation of the Health Surveillance Protocol will depend on the results of the risk assessment.

All health surveillance shall be conducted professionally by competent medical personnel and in accordance with current national legislative requirements.

The employee(s) or external medical adviser who has a responsibility for the safety and health program should have a working knowledge of the elements of the respiratory medical surveillance program.

The objectives of the specific Respirable crystalline silica related health surveillance are to:

- Detect adverse health effects early;
- Establish a baseline from which to assess changes that may develop;
- Prevent further harm being caused.

The potential benefits are:

- Identifying individuals affected;
- Identifying potentially hazardous working conditions and check the effectiveness of the control measures in the workplace;
- Providing feedback on the accuracy of risk assessments;
- Developing data on which epidemiological studies can be based.

### **RESPIRATORY HEALTH RISKS**

The primary health risk of exposure to dust containing Respirable crystalline silica is a respiratory disease called **silicosis**. It's why it is essential to focus the medical surveillance on the lungs. Further, there is some evidence that people suffering from silicosis are at a higher risk of developing lung cancer. Also people exposed to dust in general and those suffering from dust related respiratory diseases (pneumoconiosis, silicosis, etc.) have a higher risk of developing tuberculosis. This should be taken into consideration when performing the medical surveillance.

### **CONTENT OF THE RESPIRATORY MEDICAL SURVEILLANCE PROGRAM**

#### **1) The respiratory medical surveillance program should include the following:**

- A **medical file** will be established for each Employee at the time of hiring. The actual format is unimportant, but the records need to be accessible for authorised medical professionals, updated, secure, linked (e.g. dust exposure data), confidential and kept for 40 years following the end of exposure.

This dossier comprises in particular, in accordance with national legislation, the following essential elements:

- Identification data;
- Other useful demographic data (personal and family history);
- Employee job profile;
- History of the occupational and extra-occupational activities which detail exposure to potentially harmful dust, chemicals and other physical agents (radiation);

- Medical history that focuses on the presence of respiratory symptoms (e.g. cough, sputum, shortness of breath, wheezing);
- Smoking habits (number of cigarettes per day, duration...).
- **Medical examination** of the thorax. The examination should note whether observations relating to the chest are normal or not (e.g. symmetry, expansion, percussions, breath sounds, palpitation, wheezes, rales and rubs).
- **Functional testing:**
  - Although abnormalities shown by spirometry or pulmonary function tests are non-specific (e.g. smoking is an important confounding factor), respiratory functional testing is regarded as a useful component of respiratory medical surveillance program for baseline evaluation and periodic monitoring. It allows detection of a pulmonary function loss in its earliest stages.
  - Standardized methods for spirometry testing and equipment specifications have been recommended by professional associations such as the European Respiratory Society (1993) and the American Thoracic Society (1995).
- **Radiological examination:** To follow the radiographic changes in workers exposed to crystalline silica is the most sensitive means of early detection of silicosis. Abnormalities are usually seen radiographically before pulmonary function loss can be detected by spirometry or before symptoms appear. Periodic chest x-rays are therefore a vital part of the respiratory medical surveillance.
  - A full size, postero anterior (PA) chest X-rays, preferable obtained using a high kilovoltage technique (smaller formats coming from computerized techniques are not suitable).
  - Films should be read by qualified and trained radiograph readers or pneumologists.
  - Guidelines on proper equipment and techniques have been extensively published. More information on current practice can be obtained from the International Labour Organization (ILO), 1211 Geneva 22, Switzerland.
  - Films should be classified in accordance with the 2000 Guidelines for the Use of ILO International Classification of Radiographs of Pneumoconiosis. The implementation and the follow-up of the guidelines on proper equipment and techniques could allow later, if necessary, to classify the chest X-ray accordingly.
  - The frequency of the chest X-ray examination will be determined by an occupational health practitioner, based on an assessment of the risk from exposure to Respirable crystalline silica. Be aware of existing regulatory restrictions in some countries about the frequency of the X-ray examination. For advice, consult a qualified occupational health practitioner.
  - The employees, having been in contact with / exposed to Respirable crystalline silica and who have stopped their activities with a particular Employer (retired / new professional orientation) must be able to benefit from a medical follow-up at their request. The Employers commit themselves within the framework of national and EU provisions to facilitate this medical follow-up.

## 2) Record keeping and confidentiality:

- **Medical records** must be kept securely, whether in-house or out-sourced. Access to these medical records will take place only in accordance with national legislation.
- Good **communication** is essential if the objectives of a health surveillance program are to be met.
  - The Employee must be informed of the results of his medical check-up;

- The results of the medical surveillance program, disclosed in such a manner that individuals cannot be identified, should be used to enhance existing health and safety control measures at the workplace.

#### REFERENCES:

- Occupational Health Program for exposure to Crystalline silica in the Industrial Sand Industry – National Industrial Sand Association (NISA) – March 1997
- Screening and surveillance of workers exposed to mineral dust – WHO – 1996
- The European Respiratory Journal – Volume 6, Supplement 16, March 1993
- Guidelines for the use of the ILO International Classification of radiographs of Pneumoconiosis – Revised edition 2000 – International Labour Organization
- ATS (1995) Standardization of spirometry - American Journal of respiratory and critical care medicine, 152:1107-1136
- Occupational Health Management in the Quarry industry – Quarries National Joint Advisory Committee – version 1 May 2004
- Health & Safety at work, Information notices on diagnosis of occupational diseases, European Commission, Employment & social affairs, Report EUR 14768.