Spanish National Silicosis Institute - Recent Initiatives

EU- Israel Workshop on Issues Associated with Silica and Artificial Stone
Bilbao, January 28th, 2014

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I. PRESENTATION OF THE NSI – TD -

II. EXPERIENCE IN SILICA EXPOSURE CONTROL

II.1. SURVEILLANCE STUDIES

II.2. CONTROL OF DUST: TECHNICS

II.3. RECENT INITIATIVES

II.4. APPLICATION TO MARBLE WORKSHOPS
Other Risks in Mining

1974
COAL
2012
+ Other Mining Ind.

1990
Other Risks in Mining

New Industries
New Risks

HEALTH AND SAFETY

MINING
Mine Authority
(Mining Engineer Inspectors)

OTHER SECTORS
Labor Authority
H&S Institutes

Lung diseases reference
Hygiene scientific help
NOISE
VIBRATIONS
EMERGENCIES AND SURVIVAL WITHOUT O₂
+ ERGONOMICS STUDIES

First and Reference Studies

NEW LINES OF WORK
Improve dust control technics

Ultrafine and nanoparticles

Occupational Lung Cancer – DPM

Occupational lung diseases

PHYSICAL AND CHEMICAL LABORATORY

X-RAY DIFFRACTOMETER

IR SPECTROMETER

INDUCED COUPLED PLASMA-MASS SPECTROMETRY

THERMAL DESORPTION-GAS CHROMATOGRAPHY-MASS SPECTROMETRY

OCEC

HIGH LIQUID PERFORMANCE CHROMATOGRAPHY

GAS CHROMATOGRAPHY-MASS SPECTROMETRY
EQUIPMENT FOR STUDIES

• EQUIPMENT FOR “TRADITIONAL MEASUREMENTS”
  – 34 pumps + 100 cyclons
  – 8 High flow pumps + 4 PPI + 4 FSP10 + 2 GK2.69
  – 5 Flowmeters
  – 2 Anemometer

• Real Time Equipment (Particles, Ultrafine, Nano)
  – 1 Grimm Aerosol Spectrometer
  – 3 TSI SidePak Am 510
  – 1 SKC HazDust IV 4100
  – 1 Dust Mate pro

• Environmental collectors (PM10, PM2.5)

• Fit Test
  – 1 TSI Porta Count Pro

• Technical Laboratory
  – Calm Air Dust Chamber
  – Horizontal Wind Tunnel
  – Beckman Coulter LS 13 320

• CFD Software
INTERNATIONAL PRESENCE

ACSH SWP Mining, European Commission
EU – Latin America Dialogue on RM
HSA (Peru) Agreement
ISP (Chile) Agreement
HS Israel Collaboration

100,000 SURVEYED WORKERS
1000 VISITED COMPANIES
1000 PAPERS (Congress, Technical Meetings…)
1000000 DUST SAMPLES ANALYZED
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II.4. APPLICATION TO MARBLE WORKSHOPS
Real time measurers for total dust and granulometry

Concentration + Ventilation studies / Maps

CFD applied to ventilation

Approach to the exposure measurements incertitud

Imaginative approach to education: Fit Test and Video
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Plan for Control of Silicosis in Stone workshops: Buenas prácticas desarrolladas en la Asociación de Marmolistas de Asturias

**FDp Catalonia**

**AGREEMENT**

**Target:** SiO2 exposure controlled

**1st Step:** Technical improvements

**2nd Step:** Warrant of Control
EVOLUTION OF SILICA EXPOSURE (MEAN)

**Before**

**After**