

The Secretary
Senate Community Affairs References Committee
Parliament House
Canberra
ACT 2600

31/07/05

INQUIRY INTO WORKPLACE EXPOSURE TO TOXIC DUST

Having lost both my father, younger brother, and more recently a business associate on Monday 18th July 2005, to the industrial asbestos induced disease, Mesothelioma, I was compelled through a duty of care to pass on my knowledge and experiences in regard to the Sandblasting and Industrial Painting Industry.

Please find attached my submission to this inquiry which in summary details the following:

- Credential and industry experience – Nickolas Karakasch 1964-2005
- Comment related to silica toxic dust and hazardous carcinogenic materials used in sand blasting and industrial painting
- Work practices Dimet Corrosion Protection 1964-1980's
- Dimet raw material usage list, toxic and carcinogenic products
- Suppliers of silica, carcinogenic and toxic chemicals to Dimet
- Coating Sales Client List, Dimet – late 1960's-1980
- Coating Formulas and technical literature– Outlining the usage of silica, toxic and carcinogenic raw materials (relevant items highlighted).
- Published article – N. Karakasch 1999 titled: "The Facts about Inorganic Zinc Silicate Coatings", confirming the use of asbestos and diatomaceous earth.
- Dimet ownership, late 1930's – onwards together with legal liability comment.

ATTACHMENTS:

- Letters of Employment – N. Karakasch
- Banning of Sandblasting Victoria 1st January 2002
- 1987 World health Authority USA report, Exposure to Silica
- The facts about inorganic Zinc Silicate Coatings and stating asbestos and diatomaceous earth as ingredients
- Technical literature and coating formulas outlining the use of silica, toxic and carcinogenic raw materials

Nickolas Karakasch

CREDENTIALS AND INDUSTRY EXPERIENCE: 1964-2005

Nickolas Karakasch

Over the past 40 years I have been associated with the Abrasive Blasting and Industrial Painting and Fire Protection Industries in the areas of:-

- 9 years contracting (Abrasive Blast Cleaning and Industrial Coatings)
- 15 years Coatings Industry (Industrial and Architectural Coatings)
- 16 years Consultant to the Protective Coating and Structural Fire Protection Industries.

I was educated in Melbourne (Business Administration). My working career in the Corrosion Industry began in 1964 with Dimet Corrosion Prevention Pty Ltd, based at Cawley Road Brooklyn. (Letters of appointments attached)

During my 19 year stay with Dimet, I held numerous positions, starting as Works Clerk in their Sandblasting Division and ultimately, General Manager of Dimet Pty Ltd. I was involved in all areas of Corrosion Prevention, ranging from Abrasive Blast Cleaning and Application of Protective Coatings, purchasing of raw materials, to Specification writing and Technical service.

Since 1989 I have been an "Independent Consultant" providing a wide range of services associated with the Corrosion and Fire Protection Industries.

Industry Publications:

- Discussion Paper – LPG Fire Protection
- Structural Fire Protection in the Petrochemical & Chemical Process Industries – November 1998
- The Facts about Inorganic Zinc Silicate Coatings – March 1999
- Hot Dip Galvanizing Architectural Finishing – September 2000
- Zinc Coating Review – 2000 and Beyond – April 2001

Conference Presentations:

- Australian Institute Building Surveyors, W.A. 1999 Conference – Hot Dip galvanizing as related to the construction industry.
- Malaysia – Institute of Materials Corrosion Conference – November 2000 "Review of galvanizing & Zinc Coatings"
- Malaysian Government Conference – "Environmental Practises for Hot Dip Galvanizing"

TOXIC DUST AND HAZARDOUS MATERIALS COMMENT

The hazards associated with sandblasting and those involved with the manufacture of industrial paints in terms of toxic dust, exposure or through ingestion of chemicals, to name a few are:

- Silica dust
- Asbestos
- Lead
- Carcinogenic and Toxic Chemicals

Silica:

The dangers of silica dust have been well established since the turn of the century and in particular with regard to lung disease associated with the Sand Blasting Industry.

The United Kingdom was one of the first countries to recognise this new industrial disease and as a consequence prohibited sand blasting in 1949 in Australia. N.S.W. was to follow in 1959, with other states some time later. Victoria however was the outstanding exception which allowed the practice to continue until January 1st 2002, some 43 years later and 6 years after silica was classified as carcinogenic to humans.

The Federal Government Department of Employment Vocational Education Training and Industrial Relations workplace Health and Safety Act, together with Regulations 1989 which provides relevant codes of practice and responsibilities. The primary focus of the act is the "Duty of care" provisions.

Australia, as a member of the World health Organization, would have been notified that silica was classified as a carcinogen back in 1996, yet for reasons unclear, the Victorian Governments did not acknowledge and officially ban Sand Blasting until January 2002, thereby unduly exposing workers for a further 6 years, (copy of notification attached). I find this course of inaction peculiar, there are, and have been many economic alternatives to sand since the time of banning in N.S.W. Eg. Metal shot, Illmenite, Grit, Copper slag, Garnet, Aluminium oxide etc.

As to monitoring for silica dust, the first Australian Standard was only issued in 1987: AS 2985 – (Workplace atmospheres method of sampling and gravimetric determination of respirable dust). From my own experience, monitoring for silica or any dust was never performed at the Dimet Brooklyn plant or at any other Sand Blasting organisation throughout Australia I have visited during my career in this industry, even after the introduction of the 1987 standard.

To my knowledge there has never been any specific government regulation in Victoria to monitor workplace dust. It is largely covered in the overall context of the Health and Safety Act in that an employer has to provide a safe work environment.

Sandblasting is known to produce high levels of respirable dust. These particles are extremely small and light weight; and are known to penetrate the lung and its surrounding region. In some scientific circles they are classed as micro or nano particles, so small they cannot be seen with the naked eye, it is caused when sand shatters on impact together with the constant use of recycled sand. The scientific community, particularly in the USA are now taking a keen interest in micro and nano particles and their effects on human health. Nano particles are one thousand (1000) times smaller than a micron which is 1000th of a millimetre.

A 1987 report by the International Agency for Research into Cancer (IARC), World Health Authority states that sand blasters in the USA had the highest potential exposure to silica content of respirable dust. This ranged from 4.8 – 12.2% (article attached)

To put this into perspective, the current Victorian Work Cover Authority only allows 1% in any abrasive blast media, thereby excluding materials such as Beach & River Sand, Silica and other white sands.

Considering the sand blasting methods in Australia and throughout the world were basically the same, it would not be unreasonable to assume that sand blasters throughout Australia were exposed to similar levels as reported in the 1987 USA report. In comparison to the Victorian figure it is between 5 to 12 times the allowable limit.

Sand Blasters were not the only ones at risk. Those engaged in the manufacture of Industrial coatings were also exposed, as refined silica was a major ingredient in paint.

Asbestos:

This insidious material was also used in paints. Its function was as a bulking or reinforcing agent. Sand Blasting of paints containing asbestos was also common practice producing respirable dust, small enough to be inhaled.

To support this claim, that asbestos was used in paints, a published article (attached). "The Facts about Inorganic Zinc Coatings", author Nickolas Karakasch, 1999, confirms the use of asbestos and is reaffirmed in a critique of the article together with old Dimet formulations (attached). The article was reviewed prior to publication for authenticity on 19th January 1999 by the then Dimet Chief Chemist/Technical Manager with no amendments to the asbestos comment.

Lead:

The major risk of lead if ingested leads to poisoning. It generally enters the body via inhalation of dust, fumes or ingestion of particles. Lead was an active and major ingredient in many old industrial and commercial paints, used mainly as an anti corrosive pigment and for colour stability. It was common practice for lead based paints to be sand blasted, the result being respirable toxic dust small enough to inhale or ingest.

PAINTS CONTAINING CARCINOGENIC / TOXIC COMPONENTS

Many questionable chemicals were used within the paint manufacturing industry with possibly silica being the most common. It was primarily a bulking agent in a flour type consistency used in a wide variety of paints. Other harmful and toxic materials commonly used in the 1960-80's, are listed below. Copies of old paint formulas showing their use are attached. For marketing reasons, manufacturers keep their respective formulation extremely confidential. There was however one organisation that had intimate knowledge of paint formulations from all manufacturers. This was the Australian Government Paint Committee (GPC), originally based in Port Melbourne which is now part of the CSIRO organization. Its function was to field test paints used for Government Projects. Manufacturers had to supply samples and formulation details in confidence for trialling purposes so as to ensure that no formulation was adversely altered for economic gain once GPC approval was granted. This Senate Enquiry is in a unique position of being able to verify and scrutinize these old and existing formulations for any carcinogenic and toxic substances used.

Dimet Coatings were not the only manufacturer using these types of raw materials. It was commonly accepted that all industrial paint manufacturers to date have used and incorporated the same or similar ingredients in their own particular formulations. When these paints were on sold, particularly in Dimets case the safety precautions listed on individual product sheets were inadequate in terms of the raw materials used.

The main focus of safety was the fact they contained flammable volatile solvents and therefore advising naked flames or smoking should not be permitted during application together with ventilation recommendations for confined spaces. There was no mention that these paints contained questionable or known toxic ingredients.

CARCINOGENIC

Silica
Asbestos
Diatomaceous Earth
Coal tar Pitch
Strontium Chromate
Zinc Chromates

HIGHLY TOXIC

Lead
Cobalt
Isocyanates
Tributyl Tin Oxide
Methylene Dianiline
Many Others

DIMET CORROSION PREVENTION PTY LTD WORK PRACTICES 1964 – 1980'S

Sand Blasting and Contracting Division

- Wet sand manually dried using diesel fired rotating barrel drum
- Blasting sand was constantly recycled for reuse
- No monitoring of dust levels for airborne silica, or other toxic materials
- No safety training provided
- No signs advising of sand blasting area, possible dust hazard, respiratory protection to be worn, restriction zone authorized personnel only, etc
- Respiratory protection masks available but not always worn – particularly yard employees such as crane drivers, dogman, labourers, supervisors etc
- Confined spaces – masks worn, however none of the other provisions as outlined in AS 2865 (1987) were in place
- Sand Blasting was open aired, no control measures or exclusion zones were in place to restrict the movement of dust
- No general accident or emergency procedures in place
- Sandblasting of painted surfaces was common practice, some of which contained asbestos, lead and other toxic substances
- A maintenance fitter was killed (approx 1970), whilst servicing overhead cranes. There were no safety procedures in place to remove the crane operating keys whilst maintenance was being performed.
- The Dimet Brooklyn Victoria facility was situated next to James Hardie & Co, no control measures were in place to restrict the movement of asbestos dust into the Dimet facility. Asbestos was also used by Dimet, in large quantities over the years to repair pot holes in the road; these developed due to the heavy haulage of steel brought into the plant for sand blasting and painting.

Coating Manufacturing Division

- Respiratory spray masks available, use was to the individuals discretion
- No safety training
- The use of known toxic raw materials
- Minimal dust extraction fans in the manufacturing area
- No danger signs advising of dust or chemical fumes
- Whilst advised, no insistence from management for the use of personal protective equipment such as dust masks, gloves and eye protection
- No lids on mixing vessels to prevent wind updraft of asbestos, silica and other dry powders.
- Red lead was manually handled and mixed into zinc paints
- Finished paints carried no health & safety warning with regard to toxic raw materials used.

DIMET COATINGS – RAW MATERIALS USAGE IN COATINGS

World Health Organization Classifications:

GROUP 1	Materials known to be carcinogenic to humans
GROUP 2A	probably carcinogenic to humans
GROUP 2B	Possibly carcinogenic to humans

(Group 1)

Asbestos

Zinc paints

Epoxy zinc paints

Solventless Epoxy

Aluminium Epoxy

Diatomaceous Earth

Ethyl zinc silicate paint

Coal tar Pitch

Coal tar epoxy

Black anti-fouling

Tar enamel anti-fouling

Strontium Chromate

Marine primers

Silica Refined – approx 30 various paints

Zinc paints

Acrylic

Epoxy Primers & top coats

Anti-fouling paints

Red oxide zinc chromate primers

Polyurethanes

Epoxy flooring

Coal Tar Epoxies –Epoxy Fillers

Refined Sand

Epoxy Flooring

Zinc Chromate

Enamel Paints

Epoxy Paints

(Group 2A)**Methylenedianiline (Group 2A)**

Epoxy Flooring Materials

(Group 2B)**Red Lead**

Heat cured zinc paints

Chemically cured zinc paints

Air cured zinc paints

Anti-fouling paints

Cobalt

Steel primers & top coats

Ethoxy Ethyl Acetate

Marine Primer

Zinc Paint

Dimethyl Formamide

Epoxy Flooring Motor

Tri-Butyl Tin Oxide (?)

Anti-fouling Paints

RAW MATERIALS SUPPLIERS

Suppliers of raw materials to Dimet Corrosion Prevention, 1965 to mid 1980's

- Castle Moulding Sands – Clayton, Victoria
Sandblasting sand
- Rodda Pty Ltd Melbourne, ACN 0044 07283, deregistered 13/11/76
Silica 200 + Silica 400
Asbestos A
- Eliza Tinsley Pty Ltd, Melbourne, renamed Tinsley (Aust) P/L
ACN 0040 83318, deregistered 23/01/97
Asbestos fibre TTFI
- Swift & Co Ltd L1/372 Wellington Road, Mulgrave Victoria
Strontium Chromate
Coal tar CP250, T20, CP254
Special coal pitch 3 & 4
Silican Dioxide (silica)
- Hoechst Chemicals, Melbourne
Strontium Chromate
- A.C. Hatrick Chemicals Pty Ltd, Melbourne
Lead 24%
Cobalt 3%
- I.C.I Ltd, Melbourne
Red Lead & Red Lead 97%
- Bayer Australia Ltd (Chemicals), Melbourne
Desmodur Range (Isocyanates used in Polyurethane Coatings)
- Harcros Chemicals Pty Ltd, Sydney NSW
Diatomaceous Earth
Silicon Dioxide
Precipitated Silica
- W. Church & Co Pty Ltd
Chromium Oxide ZE 21077
- CIBA-Geigy Australia
Methylenedianiline (Araldite HT 972)

DIMET COATINGS CLIENT LIST – VICTORIA

The following companies purchased Dimet Coatings from the mid 1960's to the late 1980's and beyond. However It must be emphasised that paints were purchased in good faith and that these companies were unaware and had no knowledge of formulation details. Apart from a particular material being generically identified for example, epoxy, zinc, coal tar epoxy, polyurethane or marine anti-fouling etc.

Dimet Contracting	Throughout Australia
J.F.Thompson P/L	West Footscray
Brooklyn Industrial Coatings P/L	Brooklyn
Metal Protectives P/L	Brooklyn
D.Richardson & Sons P/L	Braybrook
Steel Paint P/L	Newport
Gardner Bros P/L	Altona
Dalla Riva & Associates	Laverton
Giovenco Bros	Laverton
Program Maintenance Services	Clayton
Esso Ltd	Spotswood
G. Higgins Painting P/L	Brunswick
Carlton United Brewery	Abbotsford
W.Huisman P/L	Hastings
Ross Henry P/L	Dandenong
D.H.Corrosion P/L	Dandenong
Steel Protection P/L	Geelong
W.Fleming P/L	Geelong
S & B Blasting P/L	Geelong
Alcoa Australia Ltd	Geelong
D. Fabrizo P/L	Morwell
J. Corser P/L	Morwell
Steelmains Ltd	Somerton
Millar Bros P/L	Ballarat
John Values Ltd	Ballarat
Nepean South Pacific Painting P/L	Portland
E.H. Johns P/L	Melbourne

Industrial Engineering Ltd	N/A
Coating & Industrial Service	N/A
Lindeman Wines	South Australia
Tasman Painting P/L	Werribee

Other major coating manufacturers of the time are also listed. Apart from Dimet, I have no personal formulation knowledge of industrial raw material ingredients used by those listed.

Taubmans Ltd	(now AKZO – Nobel Ltd)
Dulux Aust Ltd	(ORICA Ltd)
British Paints Ltd	(now part of Dulux Aust)
Industrial Metal Protectives P/L	(incorporated into Dimet 1974)
Vessey Chemicals P/L	(Gibson Chemical Group, Cheltenham)

DIMET CORROSION PREVENTION PTY LTD

Ownership – late 1930's onward (dates are approximate only)

Late 1930's	Di-met Pty Ltd Incorporated
1974	Sold to PGH Industries Ltd
1976	PGH merges with F&T Industries Renamed Acmil Ltd
1978	Acmil Ltd merges with ACI Ltd (Acmil named removed)
Oct 1985	ACI Ltd sells Dimet (Coatings Division only) to: Mr Gary Kraus Mr Michael Clark Mr Alistair West
1987	Dimet Coatings goes into receivership Bought by Underwater Technologies W.A.
1989	Underwater Technologies goes into receivership
1989	Dimet Pty Ltd bought by Denso Australia Pty Ltd
1992	Denso sells Dimet to Jotun Paints, Norway Company known as Jotun Dimet Pty Ltd
1995	Dimet name disappears, company known as Jotun Coatings

Legal Liability Comment

Dimet Contracting (Sandblasting Division) was never sold in 1985, all assets plant, equipment and buildings were disposed of and the various divisions throughout Australia closed. Subject to legal opinion all old liabilities if any probably remain with ACI Ltd or its current structure. Dimet Coatings on the other hand has had numerous owners since 1985. It would need to be established on what basis the company changed hands from 1985 with regard to ongoing and continuing liabilities.

Our legal system appears to be discriminatory toward those smokers within our community who develop lung diseases, particularly those exposed to harmful substances in the work place. Therefore any legal decision, should take into account the consequences of toxic exposure and the part it plays in the formation of cancers, regardless whether the person was a smoker or not.

Whilst smokers have to acknowledge a contribution toward their personal health, the legal system likewise needs to recognise that there is a conjoined liability with others, especially where harmful exposure can be demonstrated in the work place.

In the case of Victoria, the government gave tacit approval for sandblasting till January 2002. This demonstrates a mutual agreement between the government and industry, as the practice was allowed to continue even after silica was classified as carcinogenic. The government implied through a tacit approval that there were no health dangers associated with sandblasting, this I believe to be an unwritten contract. Therefore the purposes in contract were reciprocally given and taken, which in my view bounds the industry and government in a conjoined responsibility should anything untoward occur to those affected or exposed.

Whilst the Australian Government Paint Committee (GPC) had no legislative control over sandblasting, it could have been more vigilant in their assessment of paint formulas during the 1970's – 1980's in view of the existing safety regulations and standards at the time. The dangers associated with silica, asbestos and other toxic materials have been well known, documented and established for many decades. Nevertheless it needs to be acknowledged that industrial paints during that time contained toxic ingredients and were approved with the full knowledge of the GPC. The GPC in time became the industry standard used by all state governments and local council authorities.