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A S B E S T O S I N T E R N A T I O N A L A S S O C I A T I O N

(A I A)

AIA Information Memorandum (AIM) No. 3/80
Updated 5 January 1989

Summary of Main Features of Asbestos/Health Regulations at the Workplace

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
1. EEC	1. DGV Asbestos Directive 83/477/EEC adopted by the EC Council on 19 Sept. 1983. Effective Dates: Manufacturing: 1 Jan 1987 Mining: 1 Jan 1990	0.5 f/ml for Crocidolite 1.0 f/ml for other fibres *AX + BY for mixtures Action Level: 0.25 f/ml al types (or 15 f/days/ml over three months)	The numerical values and other provisions of the Directive are to be revised by 1990.
	2. **DG III Asbestos Directive 83/478/EEC (known as the DG III A Directive) adopted by the E.C. Council on 19 Sept. 83. Effective 20 March 1986.		The Use of Crocidolite is restricted but Member States may allow three exceptions: 1. asbestos-cement pipes (all diameters); 2. acid, alkali and temperature resisting seals, gaskets and packings; 3. torque converters. (see Directive for exceptions to effective date for other crocidolite articles)
	3. **DG III Asbestos Directive 85/610/EEC (known as the DG III B Directive) adopted by the E.C. Council on 20 Dec. 1985. Effective 31 Dec. 1987.		The use of chrysotile and other asbestos fibres (except crocidolite) is restricted for six (6) particular products.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
1. EEC (contd)	4. ***DG IV Asbestos Directive 87/217/EEC adopted by the E.C. Council on 19 March 1987. Effective 31 Dec. 1988 (except for plants built before 31 Dec. 1988; for these the effective date is 30 June 1991.) * A = % of Crocidolite fibre in FINISHED product B = % of non-Crocidolite fibre in FINISHED product x = limit value for Crocidolité fibre (0.5f/ml) y = limit value for non-Crocidolite fibre (1.0 f/ml) ** This Directive concerns marketing and not the workplace; it is listed because it has an indirect impact on Workplaces. *** This Directive concerns the emissions from factories; it is listed because it has an indirect bearing on Workplaces.		Deals with the prevention and reduction of environmental pollution by asbestos (from factories, etc.)
2. AUSTRALIA	The recommendations of the Australian National Health and Medical Research Council's 1981 Report were effective from 31 December 1982.	1.0 f/ml for Chrysotile 0.1 f/ml for Crocidolite and Amosite	Use of Amosite and Crocidolite is prohibited in all States. Application of asbestos by spraying is forbidden in New South Wales and requires special permission in all other states. In all states a medical examination including a chest x-ray, has to be provided for each employee within 90 days of commencement of employment and thereafter at intervals of three years. In the state of Victoria employees must refrain from smoking at work.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
2. AUSTRALIA continued			23 June 1987 Most states have recently gazetted asbestos regulations for construction work and for removal of thermal and acoustic asbestos insulation from buildings and structures, several requiring licensing of removal contractors.
3. AUSTRIA (amended 22.8.88)	1 January 1988	0.5 f/ml* for Crocidolite 1.0 f/ml** for all other types 2.0 mg/m^3) Dust containing fine dust) asbestos 2.5% (weight %) * 0.5 x $10^6 f/m^3$ & 0.025 mg/m^3 fine dust. ** 1.0 x $10^6 f/m^3$ & 0.05 mg/m^3 fine dust.	These values are averages relating to a reference period of 8 hours (one shift). Effective from 1.1.88 the use of asbestos-containing brake linings and clutches for cars will be banned.
4. BELGIUM	Royal Decree dated 28.8.86	a. All types except Crocidolite 1.0 f/ml b. For pure Crocidolite dust 0.15 f/ml c. For dust from fibre mixtures - total fibre reading must be 1.0 f/ml - the product of (total fibre reading) x $\frac{(A)}{100}$ must be below 0.15 f/ml	Authorisation must be obtained from the Ministry of Labour and Employment for the handling of all types of raw asbestos fibres and for both manufacturing and handling of products containing no or almost no binder, such as yarn, rope. No authorisation is needed for the handling of finished products where the asbestos is locked in (such as asbestos-cement, vinyl tiles, etc.)

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
5. BRAZIL	Ministry of Labour Regulation No. 3,124 of 8 June 1978 from 6 July 1978.	4.0 f/ml longer than 5 µm for all types of asbestos, measured by the membrane filter method.	A Ministry of the Environment Resolution (1987) requires the Ministry to prepare: a. Standards and procedures for mining, transport, manufacturing, commercialisation and use of asbestos and its products concerning occupational and general environment. b. A plan for the use of asbestos and eventual substitutes.
6. CANADA	Regulation of Asbestos under Canada Labour Code (CLC) (Part IV)	0.5 f/ml Amosite (5 µm) 2.0 f/ml Chrysotile (5 µm) 0.2 f/ml Crocidolite (5 µm) 2.0 f/ml Other forms (5 µm) 0.04 mg/m^3 Ambient Air Quality Guide	Several provinces have incorporated by reference the exposure limits recommended by the ACGIH*, except Ontario where the TLV is 1.0 f/ml for Chrysotile. * American Conference of Government Industrial Hygienists.
7. CHILE	Supreme Decree No. 1106 dated 9 November 1954 of the Ministry of Health revised by Supreme Decree No. 19 dated 14 January 1976. Updated by Supreme Decree No. 78 dated 9 February 1983.	2.0 f/ml Fibres longer than 5 m.	
8. DENMARK	Ministry of Labour Regulation No. 660 of 24 September 1986 as amended. Effective from 1.5.88.	0.3 f/ml asbestos excl. Crocidolite 0.3 f/ml Crocidolite (ceiling value only).	Ban on manufacture, import and use of asbestos or asbestos-containing materials of all kinds. Following exemptions apply: until 1 July 88: asbestos-cement materials until 1 Jan. 90: commutators until further notice: friction materials, bonded pcking and bearing linings.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
8. DENMARK	continued	Other mineral fibres: See AIM 1/87 Serial 5	No "Action Level" in Government Regulations. A phasing-out scheme for asbestos has been approved by Parliament in 1986, giving the middle and long-term aims. Amendments to the 1986 regulations are to be issued accordingly. The suggestion to lower the TLV to 0.3 f/ml is one of the elements of the phasing-out scheme.
9. FINLAND	Effective 1.1.89	0.5 f/ml for all types	Spraying and the use of Crocidolite is prohibited. However, exemptions may be obtained from the Labour Protection Board. Asbestos waste and products that can cause cancer must be labelled: A/C products are excluded.
10. FRANCE	Decree No. 77-949 17 August 1977. Effective 1.1.87	1.0 f/ml for all types. Dust Emission Standard: See AIM No. 5/84	Spraying of asbestos-base finishings in dwellings is prohibited. Dust sampling must be done every three months if results are below 1.0 f/ml or every month if above 1.0 f/ml. All factories using alternative fibres in addition to asbestos must use the same standard of engineering controls for the alternative fibres as they do with asbestos.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
11. GERMANY	1 October 1986	0.5 f/ml for Crocidolite 1.0 f/ml for all other types of asbestos airborne dust. Action level: 0.5 f/ml Dust Emmission Standard: See AIM No. 5/84	1. Total Prohibitions: - spraying (since 1979) - asbestos cement products of density lower than 1.0g/cm^3 specific gravity (since 1 April 1984) - thermoplastic compounds 2. Prohibitions (with exemptions clause (since 01.04.84): - spraying material - insulation and absorbing material - filters, painting material, glue - filler material, adhesives - floor and street covering material - mortars and mastics - Crocidolite containing substances except: a. a/c pipes b. Acid and temperature-resisting seals, gaskets, gland packings and flexible compensators c. torque convertors - fire protective clothing with the exception of usage with temperatures above 500°C - asbestos-containing brake and clutch linings except where no suitable substitutes are available. Exemptions clause: Production is possible if the limit is less than 0.5 f/ml.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
11. GERMANY	continued		Substitution of all asbestos fibres if other fibres are available and substitution is technically and economically feasible. 4. Voluntary contracts between the German Federal Government and the a/c industry: Innovation programme 1982: 1. In next three to five years commencing 1982, a reduction of asbestos content in a/c products by 30-50%. 2. Annual Report to the Federal Govt. of progress. 3. From July 1982, 95% of all products were pre-processed. 4. Coating: Construction - 80-85% of products were coated. 5. Marketing: Delivery through specialised dealers only, hobby shops (DIY) shall not be supplied. 6. Use of tools with low dust occurrence. - Innovation programme 1984: No asbestos in construction materials by end of 1990.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
12. GREECE	February 1988 Adopted EEC Regulations	1.0 f/ml - all fibres except Crocidolite 0.5 f/ml - Crocidolite For mixtures - adopted the formula of Directive 83/477/EEC (serial 1)	
13. INDONESIA	Effective 10 January 1983	1.0 f/ml for all types	There are no asbestos regulations but there is a Chemical Floating Value Limit for asbestos dust.
14. INDIA	Model Rule 1234A (Supplemental to the Model Factory Rules under the Factory Act 1948)	2.0 f/ml for all types Until above Model Rule becomes Law, members of the Asbestos Information Centre have voluntarily adopted 2.0 f/ml as the Standard Exposure Limit for all types of asbestos dust.	The Government of India has circulated revised Model Rule to the State Governments. Implementation still awaited by all State Governments.
15. IRELAND	1984 Adopted EEC Regulations (see Serial 1)	1.0 f/ml - except Crocidolite 0.5 f/ml - Crocidolite	No prohibitions. Special requirements exist when Crocidolite is involved, i.e. marking of containers, notification to Inspectors. (Crocidolite has not been used since 1969). However, Industry has adopted the EEC Regulations (see Serial 1).
16. ISRAEL	Efffective 1 January 1987 State of Israel, Safety at Work Regulations	0.5 f/ml for all types Action level: 0.125 f/ml	Youths (under 18 years) shall not work with the material. Obligatory medical examinations.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
16. ISRAEL	continued		Prohibitions:- 1) Spraying, sprinkling, spreading or any similar procedures. 2) Road paving, chiselling except for crushing in a plant holding a proper authorisation for such. 3) Air and gas filtration, except filtration at temperatures over 340°C
17. ITALY	6 July 1983. National Contract Asbestos and Asbestos Cement Industry, and all Trade Unions. Adopted on 30 June 1984	1.0 f/ml - except Crocidolite 0.5 f/ml - Crocidolite Ax + By for mixtures (same as for EEC - Serial 1)	9./.86 Marketing and use of crocidolite is forbidden, except a/c pipes containing crocidolite for purposes other than carrying drinking water also for manufacture of Joints, Washers and Coupling Convertors (until 30.4.1991).
18. JAPAN (amended 13.2.'89)	Notification 79 of the Ministry of Labour dated 1 September 1988 effective 1st October 1988	2,0 f/ml - except Crocidolite 0,2 f/ml - Crocidolite (fibres 5 microns or longer)	Any product containing 5% or more asbestos content must have warning label attached to it. (i.e. articles containing less than 5% asbestos are legally considered not to be asbestos products).
19. MEXICO	1986. (Still awaiting official publication)	2.0 f/ml for all types	

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
20. NETHER LANDS	Royal Decree 269 (1 April 1977) Asbestbesluit (silicose wet) WORKER PROTECTION	2.0 f/ml for all except Crocidolite Measurements over 8 hour period 0.2 f/ml for Crocidolite Ceiling value but only if exemptions granted.	Crocidolite fibre and products containing Crocidolite, as well as spraying, are prohibited. However, exemptions may be granted by the Labour Inspectorate after consultation with a special tripartite advisory committee on asbestos. NOT YET IN FORCE (as at 13 January 1984) Article 4 prohibits the use of asbestos containing products for thermal and acoustic insulation and also for preserving and decorative purposes.
	Royal Decree 418 (18 July 1983) Asbestbesluit (Warenwet) CONSUMER PROTECTION	Quality factor 0.35 or more	The Decree only applies to end-products. The Quality factor is measured by the Fibre Fixity Test as given in EEC document III/1481/81. All asbestos-containing products must be labelled.
21. NEW ZEALAND	Effective 1 April 1984	1.0 f/ml - for Chrysotile 0.1 f/ml - for Crocidolite & Amosite	Use of Amosite and Crocidolite is prohibited.
22. NIGERIA	None (The Federal Ministry of Health after consultations with the Nigerian Asbestos Association have agreed on a Code of Practice).	2.0 f/ml - for all types but industry voluntarily sets 1.0 f/ml	No-one under 18 years old may be employed.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
23. NORWAY	With effect from 1 July 1986 (Workers Protection Act, Section 56 cf. Sections 5, 6, 7 & 8 dated 7 Dec. 1956		With effect from 1 July 1986 it will be forbidden to import and/or sell any asbestos-containing products without Government permission.
24. PORTUGAL	See column (4).		Decree Law No. 479/85 dated 13 Nov. '85 - Conforms with ILO Convention 139.
25. SINGAPORE	Factories (Asbestos) Regulations 1980 - Effective 15 May 1980.	TLV's not prescribed in the Regulation, but in a Code of Practice issued by the Ministry of Labour a TLV of 2.0 f/ml for all types is recommended.	a. Notification of asbestos process required. b. Exhaust ventilation equipment or protective equipment required c. Medical examination required prior to employment and every subsequent 12 months. d. Persons under 18 years of age not permitted to be employed where asbestos dust could be present.
26. SOUTH AFRICA	Dept. of Mineral & Energy Affairs Dept of Manpower Draft Asbestos Regulations (based to large extent on EEC proposals - see Serial 1)	2.0 f/ml - Mining & Milling 1.0 f/ml - Manufacturing No discrimination Action Level: 0.25 f/ml for all types	- Measurements by RTM 1 method - Spraying prohibited - Dust monitoring once a month where 0.5 f/ml exceeded. - All waste to be recycled where practicable - All asbestos-containing produccts to be labelled.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
27. SPAIN	Revised Asbestos Regulations Promulgated 7 November 1984	Asbestos (excl. Crocidolite) from 1.1.87 - 1.0 f/ml Crocidolite from 1.1.87 - zero (i.e. prohibited)	
28. SWEDEN	AFS 1984:5 as amended AFS 1987:12 effective: 1987	0.2 f/ml - Chrysotile only	The regulation calls for a principal ban on asbestos and asbestos-containing products. There are careful instructions for use where asbestos and asbestos-containing products are authorised. Usage of asbestos and asbestos-containing products may be allowed where no technically feasible substitutes are available but only after approval has been obtained from the Authorities. Usage of Crocidolite is forbidden. All asbestos-containing products must be labelled.
	AFS 1986:2 (23.01.86) as amended in AFS 1986:22 (20.11.86) (Section 1)		When mining ore bodies, an asbestos content of 1% or less by weight is not legally recognised as asbestos.
29. SWITZERLAND	Effective from 1 January 1984	1.0 f/ml for all types	Spraying voluntarily stopped. Voluntary labelling scheme.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
30. U.K.	Asbestos (Prohibitions) Regulations 1985. Effective 1.1.86 The Asbestos Products (Safety) Regulations 1985 Effective 1.1.86 except for Regulation 3 which came into effect on 20.3.86 Control of Asbestos at Work Regulations 1987 Effective 1.3.88	For dust consisting of or containing: 1. Averaged over a continuous period of 4 hours Crocidolite 0.2 f/ml Amosite 0.2 f/ml Other types 0.5 f/ml (MMMF 5.0 f/ml) 2. For any continuous period of 10 minutes Crocidolite 0.6 f/ml Amosite 0.6 f/ml Other types 1.5 f/ml Action Level An action level equivalent to: Amosite & Crocidolite 0.1 f/ml Chrysotile 0.25 f/ml is expressed in terms of fibre hours, i.e.: Amosite & Crocidolite 48 fibre hours Chrysotile 120 fibre hours Example: 2 hours a week for twelve weeks at 0.1 f/ml 2 x 12 x 0.1 = 2.4 fibre hours Method of measurement as per the EEC Reference Method (ERM)	Import of Amosite and Crocidolite is banned. Use of Amosite and Crocidolite-containing products is banned. Exemptions: 1. Torque convertors which contain Crocidolite but no Amosite. 2. Intermediate brake bands manufactured before 1.1.86 which: a) contain Crocidolite but no Amosite; b) are intended for repair of vehicles; c) are not to be supplied on or after 30.6.88. 3. Research All asbestos in insulation and spray is banned.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
31. USA	21 July 1986 OSHA (Occupational Safety and Health Administration)	0.2 f/ml permissible exposure limit for all types as an eight-hour time-weighted average. A short term exposure limit/ excursion limit of 1 f/ml average over a sampling period of 30 minutes is authorised.	On 29 Jan.'86 the EPA submitted proposals for future regulations on asbestos. (Proposals to prohibit certain uses of asbestos etc. etc.) Regulations are issued by various States plus the following Federal Agencies: EPA - Environmental Protection Agency FDA - Food & Drug Administration MSHA - Mine Safety & Health Administrn. CPSC - Consumer Product Safety Commsn. DOT - Department of Transportation.
32. USSR	1954	2 mg/m^3 - Dust containing serpentine rock with more than 10% of natural chrysotile, anthophyllite or dust containing asbestos alternatives (milling manufacture of asbestos cardboard, asbestos manufacture preparatory processes for manufacture of asbestos-cement, asbestos rubber, asbestos-bitumen articles). 6 mg/m^3 - Asbestos-cement dust. 8 mg/m^3 - Asbestos-reinforced plastic resin and asbestos-rubber dust. Dust Emission standard: See AIM No. 5/84.	Asbestos industry workers have a shorter working week and longer paid holidays.

COUNTRY (1)	REGULATIONS (2)	STANDARD CONCENTRATION (3)	ADDITIONAL INFORMATION (4)
SERIAL			
33. ZIMBABWE	Mining (Management & Safety) (Amendment) Regulations (No. 2)	2 f/ml Chrysotile asbestos dust.	

Index of Abbreviations

1. f/ml = Fibres per millimetre (For consistency of presentation the expression f/ml is used throughout. f/ml = f/cc = f/cm^3 = f/cmu).
2. A/C = Asbestos-Cement
3. TLV = Threshold Limit Value
4. TWA = Time Weighted Average
5. mg/m^3 = Milligrams per cubic metre
6. f/m^3 = Fibres per cubic metre
7. DIY = Do It Yourself
8. RTM = Recommended Technical Method
9. Reg = Regulation
10. μm = Micrometre
11. g/cm^3 = Grams per cubic centimetre
12. MMMF = Man Made Mineral Fibre
13. f/cc = Fibres per cubic centimetre
    f/cm^3 = Fibres per cubic centimetre
    f/cmcu = Fibres per cubic centimetre

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