GLASS provides information & referrals on lead poisoning & lead contamination prevention & management, with the goal of eliminating lead poisoning globally & protecting the environment from lead. GLASS is run by The LEAD Group Incorporated ABN 25 819 463 114

global lead advice & support service

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http://www.safeworkaustralia.gov.au/Legislation/PublicComment/Documents/Model%20work%20health%20and%20safety%20public%20comment%202010/Public%20submissions%20T/1241%20The%20Lead%20Education%20and%20Abatement%20Design%20(LEAD)%20Group%20Incorporated.rtf

RE: Model Work Health and Safety Regulations and Codes of Practice Public Comment Response Form submitted by Elizabeth O'Brien

Dear Safe Work Australia,

Part 7.2 Inorganic lead

7.2.1(h) should be changed from:
machine sanding or buffing surfaces coated with paint containing more than 1% by dry weight of lead metal
to:
machine sanding or buffing surfaces coated with paint containing more than 0.25% by dry weight of lead metal
as, according to lead assessor Graeme Waller, it is possible to create soil and dust wipe lead concentrations which exceed the clearance levels in "AS4361 Guide To Lead Paint Management" - thus exposing the worker to liability for site contamination - when the paint lead level exceeds 0.25%. AS4361 is long overdue for revision and the clearance levels which cannot be achieved now if 1% lead paint is dry-sanded, will likely be made more stringent in the revision. The Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) limited the lead content of residential paint to 0.25% as of 1992 whereas 1% lead in paint is the very outdated 1970 limit.

Similarly, the figure of 1% should be revised down to 0.25% in the following definitions:
7.2.1(i) a process by which electric arc, oxyacetylene, oxy gas, plasma arc or a flame is applied for welding, cutting or cleaning, to the surface of metal coated with lead or paint containing more than 1% by dry weight of lead metal;
And:
7.2.1(m) spray painting with lead paint containing more than 1% by dry weight of elemental lead;
And:
7.2.1(o) using a power tool, including abrasive blasting and high pressure water jets, to remove a surface coated with paint containing more than 1% by dry weight of lead metal and handling waste containing lead resulting from the removal;
And:
7.2.1(r) foundry processes involving:

(i) melting or casting lead alloys containing more than 1% by weight of lead metal in which the temperature of the molten material is more than 450°C;
or
(ii) dry machine grinding, discing, buffing or cutting by power tools lead alloys containing more than 1% by weight of lead metal;

On the basis of my proposal regarding the blood lead level for removal from lead work, the percentage of lead in the following definitions should be reduced down to one fifth of the level in the draft ie 10% instead of 50% and 1% instead of 5% in the following:
7.2.1(l) hand grinding and finishing lead or alloys containing more than 50% by dry weight of lead metal;
7.2.1(n) melting lead metal or alloys containing more than 50% by weight of lead metal if the exposed surface area of the molten material is more than 0·1 square metre and the temperature of the molten material is not more than 450°C;

I propose that it is dangerous to assume that workers will be given good quality information on the health impacts of lead or even on the pathways of lead exposure, so it would be far better for Safe Work Australia to develop such information and then create a sub-clause within **7.2.8** (see below) which requires that this specific information must be given to the worker. For instance, I have read even on government OH&S websites that "lead is not absorbed through the skin" when, in fact, lead IS absorbed through the skin.

7.2.8 Duty to give information about health risks of lead risk work

(1) This regulation applies to a person conducting a business or undertaking at a workplace if:
(a) the business or undertaking carries out a lead process at the workplace; and
(b) lead risk work is carried out in a lead process.
(2) The person must give the following information to a worker carrying out the lead risk work before the worker first starts the work:
(a) the health risks and toxic effects associated with exposure to lead…

As sub-contractors have reported to me that they have suffered an astronomical increase in their blood lead level within one week (in one striking case, within two days) of starting work which exposed them to lead dust or fumes, I propose that **month** be changed to **week** in the following:

7.2.9 Duty to provide health surveillance before first starting lead risk work

(1) A person conducting a business or undertaking at a workplace must arrange for a worker to undertake a medical examination and biological monitoring:
(a) before the worker first starts lead risk work for the person; and
(b) one month after the worker first starts lead risk work for the person.

Because there are so many factors affecting the rate of absorption of lead in different individuals and the leaching of lead from their bones back into the bloodstream over time, the frequency of retesting should be reduced similarly by changing **month** to **week** in the following and by changing **6 weeks** to **10 days**:

7.2.12 Frequency of biological monitoring

(1) A person conducting a business or undertaking at a workplace must arrange for biological monitoring under the supervision of a medical practitioner of each worker who carries out lead risk work for the person to be carried out at the following times:
(a) for females not of reproductive capacity and males:
(i) 6 months after the last biological monitoring of the worker if the last monitoring shows a blood lead level of less than 30 µg/dL (1.45 µmol/L); or
(ii) 3 months after the last biological monitoring of the worker if the last monitoring shows a blood lead level of 30µg/dL (1.45µmol/L) or more but less than 40µg/dL (1.93µmol/L); or

(iii) 6 weeks after the last biological monitoring of the worker if the last monitoring shows a blood lead level of 40 µg/dL (1.93 µmol/L) or more;
(b) for females of reproductive capacity:
(i) 3 months after the last biological monitoring of the worker if the last monitoring shows a blood lead level of less than 10 µg/dL (0.48 µmol/L); or
(ii) 6 weeks after the last biological monitoring of the worker if the last monitoring shows a blood lead level of 10 µg/dL (0.48 µmol/L) or more.

In 1993 the National Health and Medical Research Council (NHMRC) set **10 µg/dL (2.42 µmol/L)** as the goal blood lead level which all Australian children and adults should be below. In 1994, the National Standard For The Control Of Inorganic Lead At Work - National Code Of Practice For The Control And Safe Use Of Inorganic Lead At Work, apparently set **50 µg/dL (2.42 µmol/L)** as the removal-from-work level – at **five** times the community blood lead limit, on the basis that lead work could not be carried out economically unless workers were permitted to have **five times** the acceptable blood lead level. My reasoning for making **10 µg/dL (2.42 µmol/L)** the new blood lead level which should never be exceeded at work is that, The LEAD Group has proposed **2 µg/dL (0.01 µmol/L)** to the NHMRC as the new goal which all Australian children and adults should be below, and **10 µg/dL (2.42 µmol/L)** is **five times** the new "acceptable" level. The justification for why adult blood lead levels should only be regarded as "acceptable" if they are below **2 µg/dL (0.01 µmol/L)** can be found at
www.lead.org.au/fs/Dangers_of_BPb_Level_Above_2ug_Adults_20101202.pdf

Therefore, my proposal is that all the blood lead "triggers" should be reduced to one-fifth of the proposed levels and that sex discrimination be removed from the regulation, thus resulting in the following **replacement** for the above text:

7.2.12 Frequency of biological monitoring

(1) A person conducting a business or undertaking at a workplace must arrange for biological monitoring under the supervision of a medical practitioner of each worker who carries out lead risk work for the person to be carried out at the following times:
(a) for females **and males** not of reproductive capacity:
(i) **6 weeks** after the last biological monitoring of the worker if the last monitoring shows a blood lead level of less than **6 µg/dL (0.29 µmol/L)**; or
(ii) **3 weeks** after the last biological monitoring of the worker if the last monitoring shows a blood lead level of **6 µg/dL (0.29 µmol/L)** or more but less than **8 µg/dL (0.39 µmol/L)**; or
(iii) **10 days** after the last biological monitoring of the worker if the last monitoring shows a blood lead level of **8 µg/dL (0.39 µmol/L)** or more;
(b) for females **and males** of reproductive capacity:
(i) **3 weeks** after the last biological monitoring of the worker if the last monitoring shows a blood lead level of less than **2 µg/dL (0.10 µmol/L)**; or
(ii) **10 days** after the last biological monitoring of the worker if the last monitoring shows a blood lead level of **2 µg/dL (0.10 µmol/L)**; or more.

Similarly, in place of the **current** proposals:

7.2.14 Removal of worker from lead risk work

(1) A person conducting a business or undertaking at a workplace must immediately remove a worker from carrying out lead risk work if:
(a) biological monitoring of the worker shows that the worker's blood lead level is, or is more than:
(i) for females not of reproductive capacity and males—50 µg/dL (2.42 µmol/L); or

(ii) for females of reproductive capacity— 20 µg/dL (0.97 µmol/L); or
(iii) for females who are pregnant or breastfeeding—15 µg/dL (0.72 µmol/L);
in order to remove sex discrimination and achieve lower lifetime lead body burdens, the **replacement** text should be:

7.2.14 Removal of worker from lead risk work

(1) A person conducting a business or undertaking at a workplace must immediately remove a worker from carrying out lead risk work if:
(a) biological monitoring of the worker shows that the worker's blood lead level is, or is more than:
(i) for females **and males** not of reproductive capacity—**10 µg/dL (0.48 µmol/L)**; or
(ii) for females **and males** of reproductive capacity— **4 µg/dL (0.19 µmol/L)**; or
(iii) for females who are pregnant or breastfeeding—**3 µg/dL (0.14 µmol/L)**;

Similarly, the following **current** text:

7.2.16 Return to lead risk work after removal

(3) The person conducting the business or undertaking must ensure that the worker does not return to carrying out lead risk work until:
(a) the worker's blood lead level is less than:
(i) for females not of reproductive capacity and males—40 µg/dL (1.93 µmol/L); or
(ii) for females of reproductive capacity—10 µg/dL (0.48 µmol/L);
Should be **replaced** by:
(3) The person conducting the business or undertaking must ensure that the worker does not return to carrying out lead risk work until:
(a) the worker's blood lead level is less than:
(i) for females **and males** not of reproductive capacity —**8 µg/dL (0.39 µmol/L)**; or
(ii) for females **and males** of reproductive capacity—**2 µg/dL (0.10 µmol/L)**;

As the government needs to take a much larger role in ensuring a person conducting a business or undertaking at a workplace **controls** lead exposures in the workplace, in place of the following text:

7.2.17 Information to go to regulator

(1) A person conducting a business or undertaking at a workplace must give written notice to the regulator if a worker at the workplace shows symptoms or signs of lead poisoning.
(2) A notice under subregulation (1) must not identify the worker.
There should be the following **replacement** text:

7.2.17 Information to go to regulator and required action by regulator

(1) A person conducting a business or undertaking at a workplace must give written notice to the NATA accredited laboratory where blood lead analysis of the workers is carried out, as to the nature and duration of the lead work being undertaken by the worker, and the workers' name, so that the laboratory can forward that information, along with **all** blood lead results, to a central database operated by the regulator and subject to Privacy laws.

(2) A notice under subregulation (1) must be followed up by the regulator if the blood lead level exceeds the levels listed under clause **7.2.12** above and the worker must be notified when he or she achieves 80% (and again at 90% and 100%) of the limits to working-life exposure to lead listed under clause **7.2.24** below.

(3) Follow-up by the regulator must include analysis of trends by lead process, online reporting of mean and range blood lead levels by lead process, and consideration of the need to research and web-publish educational materials for workers within high-risk lead processes within the jurisdiction.

The most recent recommendations regarding blood lead action levels for workers revolve around the cumulative blood lead index which is measured in μg-years/dL. A μg year/dL in lead exposure is one microgram of lead per decilitre of blood for a period of one year. The mini-monograph in the March 2007 Environmental Health Perspectives included the article "Adult Lead Exposure: Time for Change" by Brian S. Schwartz and Howard Hu (see http://ehp03.niehs.nih.gov/article/fetchArticle.action?articleURI=info:doi/10.1289/ehp.9782) and concludes (in part):

"The growing body of scientific evidence suggests that occupational standards should limit recent dose to prevent the acute effects of lead and separately limit cumulative dose to prevent the chronic effects of lead."

"For the prevention of the chronic health effects of cumulative dose, the available evidence suggests… maintaining the cumulative blood lead index below approximately 200-400 μg-years/dL (equivalent to an average blood lead level of 20 μg/dL for 10-20 years or of 10 μg/dL for 20-40 years)."

Thus, finally, a new clause needs to be added, as follows:

7.2.24 Limits to working-life exposure to lead

(1) Each time a laboratory reports the blood lead level of a lead worker, the worker's cumulative dose or cumulative blood lead index must be calculated by the regulator.
(2) The worker should be notified when they have reached each 10% (ie at 10%, 20%, 30% etc) of the following cumulative dose of lead:
(a) for females **and males** not of reproductive capacity:
400 μg-years/dL (19.3 μmol-years/L);
(b) for females **and males** of reproductive capacity:
200 μg-years/dL (9.65 μmol-years/L).
(3) Individuals who have reached their working-life exposure lead limit should be barred from further work in lead processes and other lead risk work, and advised to give up any lead-exposure hobbies or renovation activities.

Thanks for this opportunity to make a submission to protect workers' health and reproductive health.

Yours Sincerely
[Signed]
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