



Safety Lines

OSH
occupational safety
& health service
te ratonga oranga


DEPARTMENT OF
LABOUR
TE TARI MAHI

ISSN 1171-9354

ENGINEERING SAFETY NEWSLETTER, OCCUPATIONAL SAFETY AND HEALTH SERVICE

No. 61, March 2004

Asbestos Replacement in Industry

The complete ban on the use of asbestos in New Zealand is currently under consideration, and whilst new replacement materials are being well received, there are no doubt some odd jobs out there that need dealing with. The earlier these remaining asbestos uses are eliminated the better, allowing time to plan the replacement phase and obtain expert advice.

Asbestos, which is made from fibrous silicate materials, has been in use in various forms for thousands of years, but the modern asbestos industry began to flourish in the late nineteenth century. The material possesses many excellent properties such as flame resistance, mechanical strength, and flexibility. It can also provide good heat and sound insulation. Health concerns for asbestos workers emerged between the world wars, and in the 1960s the wider extent of its dangers began to become apparent. If airborne asbestos particles reach the lungs they can lead to asbestos-related disease (ARD). Fatal ARDs include malignant mesothelioma and lung cancer. Non-fatal ARDs include pleural disease and asbestosis. An aspect of ARDs is that they can take decades to become evident.

Asbestos has typically been used in building materials and heat resisting applications, including domestic appliances. The primary uses in industry,

which concern Engineering Safety, are in friction surfaces (e.g. brake linings), lagging, and to a greater extent, hence the emphasis in this article, sealing materials (e.g. gaskets).

Packings and gaskets incorporating asbestos have been produced since the 1860s and asbestos brake linings first appeared in 1896. With such an established history in industry the material had, at least until recent times, become viewed as almost indispensable in the minds of engineers. With few exceptions that perception has now changed through knowledge of hazards, regulation, and the availability of alternatives.

Modern asbestos substitutes typically include in their proprietary formulations, combinations of carbon and other fibres and nitrile rubber. PTFE-based materials are also available. These alternative materials have good pressure and temperature ratings, and generally good chemical compatibility. In most cases a suitable standard material will be found to suit the application. In some instances of extreme duty or difficult process substances specialist assistance will be required. These materials are relatively low maintenance (apart from ongoing inspection) compared to asbestos, and when this is factored in any cost penalty for non-asbestos materials is minimal.

Continued ...

Care is required in the initial selection of the material, since non-asbestos materials generally do not have the range of temperature/pressure capability of asbestos. Also, where asbestos is recognised for its inertness to chemical attack, non-asbestos materials need to be selected with fluid properties in mind. Thus a selection has to be consciously made – and recorded – for the individual application.

Some extra care will also be called for in the fitting of gaskets made from alternative materials. A few points (not an exhaustive list) are as follows:

- Use the thinnest suitable gasket.
- Ensure flanges are clean and undamaged.
- Tighten down the gasket evenly in stages to avoid flange distortion.
- Do not use sealing compounds as they can encourage creep.
- Do not retighten bolts after use at elevated temperatures.

- Pay attention to joint condition through regular inspection.

In all cases follow the manufacturer's instructions.

When working with non-asbestos jointing materials, especially cutting and refurbishing old joints, healthcare precautions are still necessary. If possible, especially if process requirements require regular disruption of the joint, select a material with an anti-stick finish, as this will tend to reduce the risk of dust at removal time. Use personal protective apparatus appropriate for (non-asbestos) fibrous dust.

The non-asbestos jointing materials offer a practical way to eliminate asbestos from the work environment. Now is a good time to tackle any residual instances of asbestos in the plant. It is most important to get the right professional advice before applying these materials, and availing oneself of the ongoing backup of the manufacturer during service.

Codes of Practice - Status Update

Two approved codes of practice are currently undergoing amendments, the *Approved Code of Practice for the Design, Safe Operation, Maintenance and Servicing of Boilers*, and the *Approved Code of Practice for Cranes*.

The *Approved Code of Practice for the Design, Safe Operation, Maintenance and Servicing of Boilers* was first published in 1996, and subsequently updated in 2000. For various reasons, including the wider promulgation of the earlier version, the 1996 edition is still widely used. Despite the existence of the later version, Engineering Safety has continued

to accept compliance with the 1996 edition. Now the 2000 version is being amended and when complete, this edition, with the amendment incorporated, will be the code with which compliance will be expected. Comments have been received and are being assessed at this time. It is expected that the process leading to publication on our website will be complete around mid-year.

The *Approved Code of Practice for Cranes*, which will contain new sections as well as miscellaneous other changes, is similarly expected to be published on the web mid-year.

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ASME Approves AS 1548 Steel

During a recent visit to the Engineering Safety unit by Allan Yates of BlueScope Steel and David Gifford of NZ Steel (a division of BlueScope Steel), we received an update on developments concerning AS 1548 *Steel Plates for Pressure Equipment*.

These developments are briefly summarised as follows:

1. AS 1548 has now been recognised by ASME and is expected to be designated in ASME II as SA/AS 1548. The recognition covers types 7-430, 7-460, and 7-490.
2. A review of AS 1548 is underway by the relevant Standards Australia technical committee.

Further developments noted were:

1. At this stage it is expected that AS 1548 will be amended to align it with EN 10028.

2. If the standard is amended in this way then the current range of grades of R, N, T, and A will be reduced to N and T, where N = "normalising rolling" or "normalising", T being unaltered. (BlueScope currently only produce N grade by normalising rolling but conventional normalising by third parties is an available option when required.) It is expected that explicit toughness levels will be specified for each grade.

At this stage no significant safety implications have been identified as arising from the proposed review of AS 1548, but it would require revision of parts of the codes of practice.

BlueScope is currently briefing New Zealand pressure equipment fabricators on these developments.

HERA Courses and Seminars

HERA Training Centre is offering the following courses and seminars during 2004:

Activity	Dates
Coatings inspection home study	All year
Introduction block courses	9-10 September
Welding inspection	21-25 June 30 August - 3 September 8-12 November
Surface methods	2-5 August
Radiographic theory and interpretation of weld radiographs	10-14 May 6-10 September
Ultrasonic testing theory and ultrasonic weld testing	24-28 May 20-24 September
Ultrasonic wall thickness	1-2 June
Management appreciation in non-destructive testing	28 June 13 October

Note: Enrolment closes 7 days before start of course.

The venue for the above courses is:

HERA House
17-19 Gladding Place
MANUKAU CITY (South Auckland)

For further details contact:

HERA Training Centre
PO Box 76134
Manukau City
Phone: 09 262 2885
Fax: 09 262 2856
Email: admin@hera.org.nz

Announcements

The following organisation has been recognised under the PECPR Regulations as an Inspection Body for fabrication and in-service inspection:

Survey NZ Ltd
93 Bolt Road
Tahunanui
Nelson

The following organisations have been recognised under the PECPR Regulations as Inspection Bodies for design verification and fabrication inspection of pressure equipment:

HSB Inspection Quality Ltd
Cairo House
Greenacres Road
Waterhead
Oldham OL4 3JA
UNITED KINGDOM

The Hartford Steam Boiler Inspection and Insurance Co. of Connecticut
One State Street
P0 Box 299
Hartford
CT 06141-0299
UNITED STATES OF AMERICA

SGS United Kingdom Limited
SGS House
Johns Lane
Tividale
Oldbury
West Midlands B69 3HX
UNITED KINGDOM

HSB Inspection Quality Ltd, and The Hartford Steam Boiler Inspection and Insurance Co. of Connecticut, were previously recognised for fabrication inspection.

The following organisation has been recognised under the PECPR Regulations as a Type B Inspection Body for the fabrication inspection of unfired pressure equipment of its own manufacture (hazard levels B, C, D and E as per AS 4343-1999):

CEM International Pty Ltd
63-65 Maffra Street
Coolaroo VIC 3048
AUSTRALIA

The following organisation has been granted exemption under regulation 5 from the requirements of the PECPR Regulations for design verification to be carried out by a design verifier employed or engaged by an inspection body, in relation to pressure piping of its own design (hazard levels C and D as per AS 4343-1999):

Dobbie Engineers Limited
P0 Box 33-862
Takapuna
AUCKLAND

The following organisation has been granted exemption under regulation 5 from the design verification and inspection requirements of regulation 20 of the PECPR Regulations, in relation to specific equipment manufactured by Micro Motion Inc:

Fisher-Rosemount Limited
(Emerson Process Management)
6 Argus Place
Northcote
AUCKLAND

A full list of recognised inspection bodies and known contact details can be viewed at the Engineering Safety website:

www.osh.dol.govt.nz/touch/eng-safety/index.shtml

Index Update

The Safety Lines index has been updated and now covers issues 1 to 61. The index, which should be available at about the time you read this, can be downloaded in Word and pdf formats.

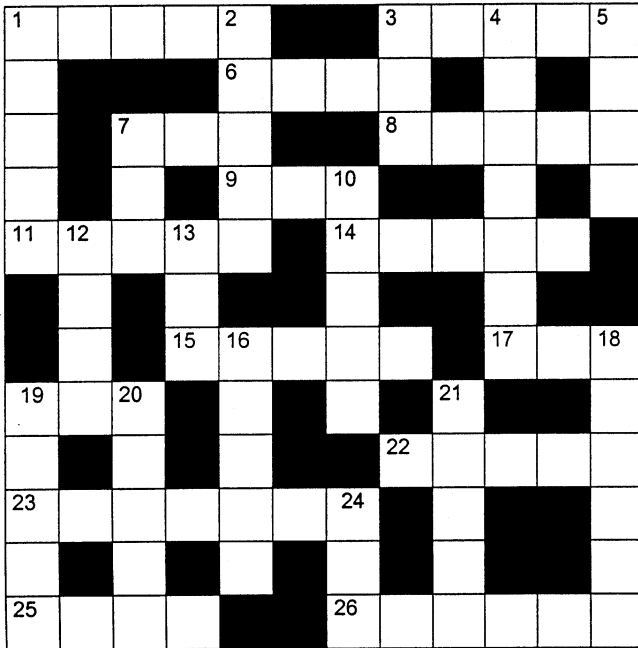
It can be reached from the Engineering Safety webpage

www.osh.dol.govt.nz/touch/eng-safety

via 'Articles' and 'Safety Lines (Series)'.

Alternatively it can be reached from the OSH Web page (www.osh.dol.govt.nz) via 'Health and safety Publications', 'Series/Bulletins etc', and 'Safety Lines (series)'.

Puzzle Place



Answers include abbreviations and acronyms.

Across

- 1 Italian pie
- 3 Unit of magnetic flux
- 6 Rescue
- 7 Health and safety agency
- 8 Musical sounds
- 9 A long time
- 11 Condemns
- 14 Weird
- 15 Relieved
- 17 Total
- 19 Sound unit
- 22 Official examination of documents
- 23 Impose
- 25 Compass point
- 26 Lubricate

Down

- 1 Beat
- 2 Cricket trophy
- 3 Dampen
- 4 Outlaws
- 5 Stratagem
- 7 Unit of resistance
- 10 Less worn
- 12 American engineering society
- 13 Examination without damage
- 16 On one side
- 18 Capable of motion
- 19 Destructive vapour explosion
- 20 Attics
- 21 Unit of radioactivity
- 24 Unit of work

Answers to *Safety Lines* Issue 60 Crossword

Across

- 1 Rating
- 6 Abode
- 8 Gas
- 9 Era
- 10 Litre
- 13 Aver
- 16 Roam
- 18 Ego
- 20 Dept
- 22 Led
- 24 Heady
- 26 Eyes
- 28 Rho
- 29 Erg
- 31 Agony
- 32 Flying

Down

- 1 Rigor
- 2 Tesla
- 3 Newt
- 4 Mar
- 5 Edge
- 7 Baa
- 9 EEG
- 11 Impute
- 12 Regild
- 14 Verify
- 15 Radius
- 17 Once
- 19 Owed
- 20 Daraf
- 21 Phony
- 23 Eye
- 25 Akin
- 26 Egg
- 27 Eons
- 30 Raw

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