

Industry Summary Report

Hazardous Substances in the Manufacturing Industry:

Fibre-Composite Boat Building Sector

February 2007



Australian Authorities:



Government of South Australia
SafeWork SA



New Zealand Authority:

Department of Labour
TE TARI MAHI



The photograph on the front cover depicts a typical hand lay up situation encountered during boat building. A risk assessment process might indicate that full face air supplied respiratory protection with overhead air line management systems is more appropriate to control the eye irritancy effects where higher concentrations of styrene are encountered.

Introduction

The National Compliance Campaign on Hazardous Substances in the Manufacturing Industry was an initiative of the Heads of Workplace Safety Authorities (HWSA), a group of executive managers representing health and safety authorities from the Australian States and Territories and New Zealand. Due to resource limitations in the Northern Territory and a lack of fibre-composite boat builders in the ACT, both the Northern Territory and ACT did not participate in this program. This project became the first national and trans-Tasman campaign relating to hazardous substances initiated and conducted by HWSA.

In order to facilitate the program, participating OHS authorities formed a Working Group to develop the program scope, timelines, checklists and to coordinate stakeholder and media related elements of the program. Queensland provided overall coordination of the program.

This industry summary report provides a summary of the performance of the fibre composite boat building, refurbishment and repair sector of this industry in relation to the level of uptake and effectiveness of existing hazardous substances legislation. New Zealand elected to broaden the scope of their input to include other sectors undertaking fibre composite manufacturing. The intent of participating jurisdictions was to focus on small and medium enterprises (SMEs) in the manufacturing industry. This report was compiled by the campaign coordinator, Workplace Health and Safety Queensland (WHSQ).

During the course of this project the national chemical framework was undergoing review and a draft national standard for the control of workplace hazardous chemicals and associated draft code of practice were progressing. Effectively this process will shortly bring together the management of hazardous substances and dangerous goods currently administered separately in most jurisdictions. New Zealand and the ACT are currently the only jurisdictions where these entities are already administered under a single legislative instrument. The audit tools utilised during this project were developed by consensus between participating jurisdictions to assess compliance against the existing hazardous substances legislation which each participating jurisdiction (other than New Zealand) has adapted from the *National Model Regulations for the Control of Workplace Hazardous Substances* promulgated in 1994.

Goals of this Program

- The primary goal of this program was to determine the level of compliance in this industry with the existing hazardous substances legislation. It is probable that these findings reflect legislative performance in workplaces generally.

- The project was intended further to develop, implement and evaluate a national campaign model for hazardous substances which is capable of being adapted to suit other small medium enterprises in the manufacturing industry.

Methodology

The campaign model was developed to occur in four phases and consisted of:

1. Primary information source management - Assessment of compliance with the information provision obligations for manufacturers, importers and suppliers of hazardous substances.
2. Stakeholder management - consultation with stakeholders and development of the audit tools.
3. Compliance activity - workplace auditing directed at employers and self-employed operators.
4. Evaluation – collection of feedback and data from inspectors, followed by analysis and reporting of findings and recommendations.

Two audit tools were developed for use during the project. One was the “Intervention tool” or checklist used by inspectors during workplace audits. The other, a “Self Assessment tool” was sent to employers several weeks prior to field work to assist workplaces to identify, assess and where necessary to improve controls prior to the inspectors’ audit.

Evaluation

Data collected during the audits of 157 Australian workplaces (majority of available workplaces were selected) and 107 New Zealand workplaces was analysed and considered in the production of this report. A breakdown of the number of audits undertaken in each jurisdiction by “predominant business activity” is given in Table 1.

Table 1: Number of audits undertaken by “predominant activity” in each jurisdiction

Jurisdiction	Predominant activity				Jurisdiction Total
	Production line building	Custom building	Repair	Not specified	
QLD	18	7	10	10	45
NSW	13	5	17	3	38
VIC	0	10	1	0	11
TAS	0	3	9	0	12
SA	4	9	8	2	23
WA	6	4	18	0	28
NZ *	70	3	31	3	107
TOTAL	111	41	94	18	264

* Note that New Zealand data represents workplaces from a number of fibre composite manufacturing sectors

The following table 2 identifies those aspects of regulatory performance issues where stakeholders demonstrated difficulty in achieving compliance.

Table 2 .

Topic addressed by Intervention	Topic not addressed by workplace Australia (combined)		Topic not addressed by workplace New Zealand	
	Total number	% of Total (157)	Total number	% of Total (107)
Risk Assessment	84	51	47	44
Risk Assessment to be written	115	73	68	64
Risk Assessment adequate when written	15 (of 42)	36	20 (of 39)	51
Register	75	48	62	58
MSDS Access	34	22	36	34
Decanting Labelling	43	27	24	22
Information & Training - General issues	57 (of 144)	40	13 (of 95)	14
Training specific for controls	44 (of 140)	31	49 (of 95)	52
Health Surveillance	150	96	67	63
Air Monitoring	138	88	66	62
Controls (total interventions)	502		343	
Controls (average intervention no./workplace)	3.2		3.2	

Table 2: Issues not addressed at workplace by number and percent for Australia (combined) and New Zealand

Major findings and recommendations

Findings:

1. The overall risk reduction strategies which employers use in Australia (combined) and New Zealand seem to produce comparable performance in terms of control measures in place i.e. the same number of interventions (all types summed). Some States utilised the guided Employer Initiated Improvements to a much greater extent than others and this will be investigated further.
2. The relatively modest number of issues with which workplaces are fully complying with a decade or more since this legislation was enacted in each jurisdiction, is evidence that this “average” industry workplace sector does not yet quite demonstrate sufficient maturity in handling its hazardous substances issues at the level which might have been expected.
3. SMEs in this industry often exhibit poor knowledge and awareness of hazardous substance legislation. Only 17 of the 157 Australian workplaces had any person on staff with a responsibility for OHS.
4. Most manufacturers and suppliers provide an acceptable quality of information in material safety data sheets. Some importers need to ensure information is brought up to the relevant standards specified in the Codes for Labelling and Material Safety Data Sheets (MSDS) before supplying to Australian businesses. Better

systems for ensuring up to date MSDS for some down-stream suppliers are required.

5. MSDS are supplied to most workplaces, but they are infrequently used to inform the risk assessment process. Consequently, controls in place are often not properly selected.
6. Failures to create hazardous substance registers and to make MSDS available to workers are quite common.
7. Lack of understanding of the risk assessment process prevails and there is a lack of ability in-house to undertake risk assessments. Risk assessments were not performed in about half the workplaces audited and often remained unrecorded when conducted. Suppliers tend to be of considerable assistance to workplaces in producing written risk assessments.
8. Labelling of decanted substances still shows significant non-compliance.
9. Training is often informal and on the job. Rarely is any record of training made. Occasionally suppliers assist workplaces with OHS training of workers.
10. Air monitoring for control purposes and health surveillance are not understood by this industry, and are not standard industry practice. Consequently, there is very little representative data available about the actual exposure levels of workers to a range of hazardous substances, especially for exposures during spraying where ventilation may not be adequate. Under current regulatory procedures, straightforward risk assessment decisions which this industry would be ordinarily expected to make are hampered without a knowledge of these exposures.
11. This industry could benefit greatly from an industry best practice approach or a British "COSHH Essentials" hazardous substances management approach were a specific COSHH Essentials package to become available for the fibre composite industry in the future. The main benefit of the COSHH Essentials model is that it circumvents the need to work through the traditional risk assessment process. It works by a process of grouping a small amount of readily available information about the hazards, exposure potential, and combinations of these to generate a set of ready tailored control approaches.
12. Controls that are in place in these workplaces are typically based on personal protective equipment (PPE) with heavy, though unreliable, reliance also on natural ventilation, i.e. the focus is usually on the lower end of the control hierarchy. Some use of higher level (substitution) controls was evident in about half of Australian and three quarters of NZ workplaces using low styrene emission (LSE) resins or experimenting with vacuum infusion technology.
13. Basic mechanical ventilation (i.e. fans) is often used ineffectively. In a number of workplaces spray booths or ventilated enclosures for gel coating and lay-up are used, though some appear of poor design. Ventilation system effectiveness, maintenance and testing are generally poor.
14. The process for selection of PPE, fit testing of respiratory protective equipment (RPE), maintenance of PPE and training in relation to PPE use is underdeveloped. Many employers do not insist that workers use the PPE even where it was found to be necessary in a risk assessment. In the absence of informed advice, many

workplaces purchased cheaper respirators and gloves which may not have been suitable for the task.

15. There is frequently inadequate control of risks from fire and explosion because of inappropriate storage, the presence of ignition sources in hazardous areas and poor housekeeping. Dangerous goods legislation is currently separate from hazardous substances legislation in most jurisdictions and this legislation is in different stages of maturity and application in each jurisdiction. These topics should be assessed more thoroughly following the future implementation of the National Standard for the Control of Workplace Hazardous Chemicals.
16. Inspectors in Australia recorded that the “self assessment tool” was not used at all in 37% of workplaces. However where it was used, inspectors rated its use as “Satisfactory” in 73% of workplaces. The assessment was very similar in New Zealand where that tool was not used at all in 40% of workplaces and, where it was used, inspectors rated its use as “Satisfactory” in 70% of workplaces.
17. Employers were also asked to rate the self-assessment tool on a scale of 1 (very useful) to 5 (no use at all). Figure 1 below depicts the responses of those who used it.



Figure 1: Employer rating of usefulness of Self-Assessment tool

In Australia employers rated the self-assessment tool as of some use (3) to quite useful (2) in the majority of workplaces where it was used. About 16% believed it to be very good and a similar number rated it as of no use at all. A more polarised finding resulted from the New Zealand employers’ perspective, where the majority of users found it either quite useful (2) or of no use at all (5). Generally, the tool was found to be of most use to larger workplaces, especially those undertaking production line manufacture. It was often said to be of limited use for small workplaces, especially where repair work was the predominant activity undertaken. Many found it thorough, though too daunting.

Recommendations:

- I. In order for the industry to improve its performance in the management of risks from hazardous substances, it will require external assistance, especially in the areas of risk assessment and training. These are probably the two key areas for improving compliance with this legislation generally.
- II. There is a need to engage industry associations, suppliers and apprentice training colleges and to encourage them to standardise the OHS information and training they provide to these workplaces.
- III. The role of jurisdictions should be to focus on strategic initiatives for improving compliance with hazardous substances legislation, particularly in the areas of risk assessment and training. This will be especially necessary following implementation of the National Standard for the Control of Workplace Hazardous Chemicals and its uptake by the jurisdictions.
- IV. An immediate need exists for relevant information products specifically designed for fibre composite manufacturers. Topics of high priority include: Controlling Risks while working with Fibre Composite Materials; Ventilation; PPE; and worked examples of risk assessments for hazardous substances.
- V. Further HWSA national compliance campaigns benchmarking hazardous substances performance should follow implementation of the new national chemical framework. Future Australian Safety and Compensation Council (ASCC) initiatives, such as the simplified COSHH Essentials approach, may provide direct benefits in overcoming some of the compliance difficulties encountered by industry identified in this campaign.