

## The Scientific Case for Removing Work with Asbestos Textured Decorative Coatings (TCs) from the Requirements of Licensing

### HSL Research MF 2005/03 'An investigation into the airborne fibre releases during the removal of textured coating from Domestic Premises'

1. HSL carried out research to investigate the airborne fibre releases during the removal of chrysotile containing textured decorative coating (TCs) at thirty-five domestic premises. Table 1 illustrates the relative risks from removal of TCs with other asbestos containing materials and shows that the fibre concentration during removal for TCs was 0.08f/ml, which is just below the proposed new control limit for all types of asbestos.
2. Further research was undertaken and when analysed in detail using transmission electron microscopy (TEM), most fibres were found to be non-asbestos and were in fact calcium sulphate fibres (from the under laying plaster). To overcome this problem a treatment technique to remove the calcium sulphate particles was developed by HSL. When the calcium sulphate fibres had been dissolved away the fibre concentration was reduced to 0.014 f/ml which is almost an order of magnitude below the proposed new control limit. This indicates that work with TCs gives rise to only very sporadic and low intensity exposure to asbestos fibres and therefore is similar in this respect to other non-licensable asbestos materials.
3. A risk analysis, also carried out by HSL of work with asbestos containing materials clearly demonstrates that current work with TCs has a risk level some three orders of magnitude lower than that for other licensed materials (see table below and Annex A of the RIA).
4. Given the above, the following points support of the proposal to remove TCs from licensing requirements:
  - The asbestos fibres in TCs are firmly bound in the matrix making the level of release of asbestos fibres into the air much lower than for other licensed asbestos containing materials. There are a number of other asbestos containing materials such as asbestos cement and articles of bitumen, plastic, resin or rubber that contain asbestos, where this is also the case and work with these materials does not require a licence. Taking a consistent approach to these materials, the new evidence suggests that work with TCs should fall outside of the requirements of licensing, alternatively that other work with asbestos-containing materials should require a license. To licence all asbestos containing materials would place an enormously increased burden on industry and would not comply with HSE's Policy Statement on Permissioning Regimes, which states that licensing should only be required for high risk activities. This would therefore not be something that HSE would wish to propose.
  - The proportion of (exclusively chrysotile) asbestos found in TCs was only 5%. The use of asbestos in this material decreased from the 1980s when non-asbestos containing products were developed. As the coatings were often supplied in a dry mix form, it is probable that from the late 1980s even lower percentages of chrysotile were present, either as a result of mixing asbestos-containing and non-

asbestos-containing substitutes or by the manufacturers reducing the chrysotile content during production. From 1992 the use of asbestos in this type of product was prohibited. The calculations undertaken to derive the relative risk assumed that all textured decorative coatings worked on would contain 5% asbestos. The levels of fibre present and the resulting potential exposure is therefore likely to be even lower than used in the risk assessment.

**5.** As with all other asbestos-containing materials, work with TCs will remain within scope of the CAW Regulations, whether or not it is licensable, and HSE would expect a sufficient level of control to prevent significant exposure to, and the spread of, asbestos fibres. The draft ACoP contains clear requirements for the controls that must be in place for work with such coatings. Given the low level of risk, the ACoP will indicate that it would not normally be reasonably practicable to remove TCs before demolition.

Table 1

| Textured Decorative Coatings  |                                 |                         |                             |                      |                            |                                |                           |                               |  |  |
|-------------------------------|---------------------------------|-------------------------|-----------------------------|----------------------|----------------------------|--------------------------------|---------------------------|-------------------------------|--|--|
| Calculation of relative risks |                                 |                         |                             |                      |                            |                                |                           |                               |  |  |
| Type of ACM                   | Number of jobs in 3-year period | Number of jobs per year | Average worker-days per job | Worker-days per year | Fibre concentration (f/ml) | Exposure (Worker-days f/ml/yr) | Percent of total exposure | Risk factor for asbestos type | Weighted risk from work with various ACM s | Percent of total risk by type of ACM (%) |
| Column No.                    | 1                               | 2                       | 3                           | 4                    | 5                          | 6                              | 7                         | 8                             | 9  | 10                                       |
| Source/calc                   | HU                              | HU                      | ASB5                        | (C2XC3)              | HSL                        | (C4XC5)                        | (From C6)                 | Table 4 in main report        |  |  |
| AC                            | 2276                            | 758.7                   | 62.1                        | 47145.7              | 14.36                      | 677012.5                       | 15.7                      | 175.1                         | 118.51                                     | 16.41                                    |
| AC & AIB                      | 289                             | 96.3                    | 84.8                        | 8169.1               | 7.39                       | 60328.6                        | 1.4                       | 147.5                         | 8.90                                       | 1.23                                     |
| AC & AI                       | 220                             | 73.3                    | 102.5                       | 7516.7               | 9.28                       | 69754.7                        | 1.6                       | 185.1                         | 12.91                                      | 1.79                                     |
| AC & AI & AIB                 | 262                             | 87.3                    | 3415.0                      | 298243.3             | 6.32                       | 1885892.0                      | 43.7                      | 163.4                         | 308.09                                     | 42.67                                    |
| AIB                           | 49608                           | 16536.0                 | 28.6                        | 472592.3             | 0.41                       | 193762.8                       | 4.5                       | 120.0                         | 23.25                                      | 3.22                                     |
| AI                            | 20303                           | 6767.7                  | 37.6                        | 254689.8             | 4.20                       | 1069697.3                      | 24.8                      | 195.1                         | 208.64                                     | 28.89                                    |
| AI & AIB                      | 2440                            | 813.3                   | 64.7                        | 52587.8              | 2.31                       | 121214.9                       | 2.8                       | 157.5                         | 19.09                                      | 2.64                                     |
| Other                         | 7245                            | 2415.0                  | 61.9                        | 149547.7             | 1.60                       | 238610.4                       | 5.5                       | 95.1                          | 22.70                                      | 3.14                                     |
| <b>TC</b>                     | <b>15297</b>                    | <b>5099.0</b>           | <b>9.2</b>                  | <b>46919.2</b>       | <b>0.08</b>                | <b>3955.3</b>                  | <b>0.1</b>                | <b>1.0</b>                    | <b>0.004</b>                               | <b>0.0006</b>                            |
| <b>Total</b>                  | 97940                           | 32646.7                 | 41.9                        | 1368618.5            |                            | 4320228                        | 100.00                    |                               | 722.10                                     | 100.00                                   |

Key: AC = Asbestos coatings  
AIB = Asbestos Insulating Board  
AI = Asbestos Insulation  
TC = Textured Coatings