WFF Silica Dust – draft 'state of the art' positioning statement: November 2024

1 Quartz worktops have been headline news since the end of 2023, when first major Australian retailers and then the Australian government announced a country-wide silicosis-scare product ban. Australia's government H&S agency, Safe Work Australia, made these findings of occupationally-acquired silicosis in a report released in October 2023:

- Engineered stone workers develop silicosis at a "disproportionate" rate compared to other industries
- Most engineered stone workers who developed silicosis were under 35
- Engineered stone workers faced a faster disease progression (which means they become unwell more quickly) and a higher mortality rate (which means they are more likely to die) than silicosis victims in other industries
- Overall, the report concluded that "the use of all engineered stone should be prohibited".

2 'Quartz' is a catch-all term for man-made engineered stone materials, created in factories by combining quartz sand, colourings and additives with thermosetting resins to create large-format slabs which exhibit all the appearance, weight and aesthetics of natural stone. Quartz dominates the UK stone worktops market (70%+ by volume of all stone worktops sold). The main reason is design consistency: engineered stone slabs deliver a genuine 'stone' aesthetic, but with all the advantages and consistencies of factory-engineered products. Colour, texture, porosity, patterning and dimensional stability are no longer products of random nature, but of precise engineering and considerable research and development. Quartz is a product with which retail showrooms are familiar and consumers are comfortable, and which fabricators' machine minders are confident in processing.

3 **The first point to emphasise is the very distinct and discrete nature of the occupational risk.** It exists entirely and exclusively at the point at which the stone is processed by cutting and polishing instruments: preeminently when large-scale stone slabs are cut down and finished to meet the precise dimensions and design requirements of the finished worktops. Risk can also occur when processing smaller stone pieces and/or in renovation and remodelling if worktop removal involves cutting or grinding tools.

4 It needs to be understood that consumers, specifiers or installers are not at risk in using these products once this fabrication process has been completed. Respirable silica dust is released only when cutting or polishing tools are applied to the material. This issue is not analogous to asbestos exposure, or to more contemporary consumer concerns about formaldehyde, fire retardants or similar chemicals leaching from consumer products over time and compromising indoor air or water quality.

5 There need be no question of anyone being at risk from existing work surfaces or interior features. There are negligible risks associated with conventional demolition or removal either -- provided the worktops are not cut with machine grinding tools.

6 Any risks from crystalline silica dust occur **only** when the surface is cut by fast moving abrasive tools in the factories or work-places where the worktops are cut, shaped and polished prior to installation. The cutting process flings invisibly-small fragments of crystalline silica into the air where it can be then breathed into the lungs.

7 It is this **Respirable** Crystalline Silica (RCS) dust that creates the specific Silicosis health risk which sparked the Australian ban, and lies behind proposals for similar regulatory interventions in parts of the USA.

8 It should be emphasised that both fabrication and enforcement practices in those countries have historically been significantly less 'tight' than in the UK, which has had the Health & Safety at Work Act since 1974. Australasian, American and Spanish fabricators featured in case studies have been characterised by widespread use of dry-cutting, poor factory controls and reliance upon natural ventilation. (see for example, Spain in 2018)

9 It is significant in this regard that the first identified UK cases of occupationally-acquired silicosis specifically related to worktop fabrication are all associated with poorly-controlled workplace environments which (from the victims' descriptions) did not comply with more than the most basic UK regulatory requirements. (*Feary et c, 2024:* https://thorax.bmj.com/content/79/10/979)

10 There are two distinct, but complementary, issues which need to be addressed in a safe fabricating workplace. The first is the risk of exposure to workplace dust in general, and to respirable fractions (sub- 5 micron) in particular. The second is exposure to dust specifically containing respirable crystalline silica (RCS) dust, which has been identified as carcinogenic.

11 The above is important when considering the conventional risk-prevention hierarchy. The first consideration is always substitution with a lower-risk alternative. In the case of stone worktops, substitution is only an option where distinct alternative categories exist. The obvious substitutes for engineered quartz are either the traditional natural stone it largely replaced, or the new generation of extra-large-format ceramic tiles. But both natural stone and man-made large-format porcelain/'sintered stone' products also create dust when cut. And naturally-occurring granites and quartzites may contain as much silica as engineered quartz products.

12 The HSE provides a range of resources and guidance online setting out how workers can be protected from exposure to RCS including use of water suppression, equipment enclosure, extraction and personal protective equipment, such as respirator masks. Workers must also be trained and competent to use such controls. (See for example https://www.hse.gov.uk/pubns/guidance/st0.pdf; https://www.hse.gov.uk/pubns/priced/hsg201.pdf)

13 The important principle here is the use of 'proper controls'. Great Britain has long-established Workplace Exposure Limit metrics, and it is incumbent upon factory owners to manage staff training and production line processes to operate below those limits. And also incumbent upon workers to wear any PPE provided, and to ensure they do nothing to put themselves or fellow workers at risk of exceeding the WEL.

14 The use of water as both a dust suppressant and as a tool lubricant is long established among professional fabricators in the UK. Cutting slabs and upstands to size, creating cut-outs for taps, sinks and hobs and polishing cut edges are routinely carried out on large-scale CNC machinery, typically using enclosures to reduce workforce exposure and water suppression at the cutting or polishing head. Hand-finishing and polishing is usually carried out wet, with the need to control dust-laden mist being met typically by air extraction at point of use, often involving further water-wall booths. Risks to individuals undertaking hand-finishing are usually further mitigated by the use of face-fit or positive-pressure RPE.

15 Different factories will all use different machinery and different processes. But they are all required to operate below the same WEL.

16 There are no barriers to entry to the market. Light industrial units (Class B-2) are typically suitable for setting up worktop factories; second-hand machinery is easily available; major brands of engineered stone may require fabricators to make minimum stock investments and

adhere to specified processing requirements, but non-branded raw materials are widely available, either sourced direct from overseas suppliers or via UK distributors.

17 There is no SIC code specific to the manufacture of stone worktops. This makes it impossible to identify a specific universe of practitioners, or even estimate the total number of organisations carrying out business as fabricators. Artificial stone appears three times in the SIC code notes uksic2007webamend8531 (9).pdf:

- 22.23 Manufacture of builders' ware of plastic - manufacture of artificial stone (e.g. cultured marble)
- 23.61 Manufacture of concrete products for construction purposes – manufacture of precast concrete, cement or artificial stone articles for use in construction
- 23.69 Manufacture of other articles of concrete, plaster and cement – manufacture of other articles of concrete, plaster, cement or artificial stone
- Plus there is also the option of registering under cutting and finishing of stone – 23.70.

18 Because of the growth in the market over the last 20 years (largely driven by the quartz worktop manufacturers' marketing efforts and consistency of product, particularly into new homes and the top end of the kitchen market), engineered stone worktops are desirable, aspirational products. Naturally, kitchen showrooms wish to offer them. They can easily add several thousand pounds to the contract value in supplying a new kitchen.

19 Kitchen showrooms lack the skills, equipment or expertise to process and supply stone worktops. They inevitably sub-contract the template-supply-and-fit process to third-party specialist fabricators. This often extends to the fabricator inviting the end customer to come and view the stone slab from which their worktop will be created, and to discuss the detail of the fit or the flow of the grain or 'value add' options like draining groove details which can be incorporated in the factory worksheet. The end-user's contract, though, is usually with the showroom, rather than direct with the fabricator.

20 Similarly with interior designers, house-builders or other specifiers: the role of the fabricator is often that of a specialist consultant and sub-contracted supplier.

21 The combination of a widely-desired, high-ticket aspirational product, the reliance upon fabricators for third-party specialist expertise, the comparative lack of experience among purchasers and the infrequent or one-off nature of the purchasing decision, together with the low cost of entry to the profession, means there is no shortage of 'worktop fabricators' in the UK. In many ways, the industry at its present stage of professionalism resembles the double-glazing industry of a generation ago. Or the current market for retro-fit solar panels.

22 In particular, the natural consumer desire to obtain a high-ticket item for the lowest possible price creates a natural 'pull' for low-cost operators.

23 The way for a fabricator to reduce the purchase price of the raw materials is governed either by quantity (volume-based discounts) or by quality (non-branded product of unproven provenance or formulation). So that leaves building occupancy costs, sunk costs of capital equipment and employment costs of workforce. Of which the costs of creating and maintaining a safe working environment, purchasing and maintaining correct protective equipment and undertaking appropriate training, safety monitoring and occupational health procedures are all (a) invisible to the customer and (b) additional to the costs of producing worktops.

24 If the retail showroom or the housebuilder is the Principal Contractor, they carry a statutory duty to ensure their subcontractors are following correct HSE regulations. Retailers and

specifiers should exercise their duty of care by ensuring they buy only from fabricators who can demonstrate a commitment to Health & Safety including proper demonstrably effective factory controls for dust, ensuring any on site cutting is minimised and the risks of RCS managed.

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25 The industry has explored several ‘what-ifs’ about somehow controlling or regulating the market for stone worktops. As all engineering stone is imported, it would be possible to create controls at point of entry, such that the product could only be released either to the manufacturer’s licenced UK distribution arm, or to a registered fabrication business. Selling-on would need to be accompanied by a provenance certification route, similar to that for certificated timber or waste-transfer notes.

26 The double glazing industry’s code of practice and associated FENSA registration model may also be worth exploring. Especially as FENSA certification is universally required when homes come subsequently to be sold.

27 Because worktop fabricators are usually trade suppliers of business customers, many of the approaches being considered by the Federation of Master Builders’ current campaign to license the UK building industry might also be appropriate for consideration.