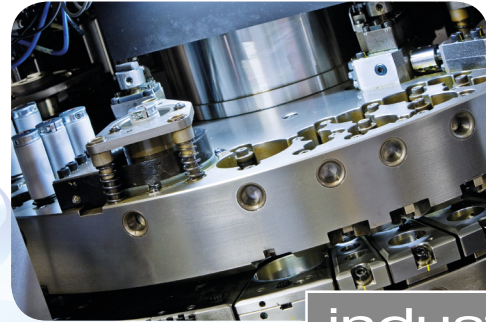




# Liquid Glass Coatings



food



industrial



med



facilities



auto



marine



aviation



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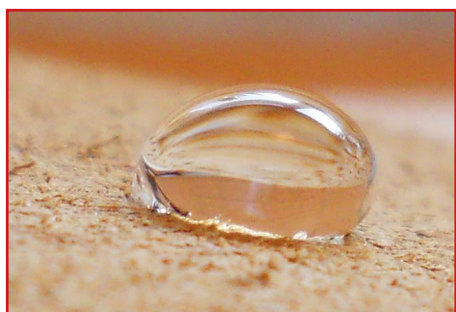
## About us



Liquid Glass is an exceptional, truly remarkable, multi award winning technology which allows the end user to protect both industrial and domestic surfaces with ultra-thin super durable coating of invisible, easy to clean, glass.

In essence the technology allows the end user to deposit a nano scale layer of molecular, particle free glass (500 times thinner than a human hair), onto the surface of most items. The molecules of glass (silicon dioxide/ $\text{SiO}_2$ ) come from pure quartz sand, of which there are vast reserves, as silicon dioxide is one of the most abundant compounds on the planet. Just like domestic glass the coatings are chemically inert and highly resistant to commonly used cleaning chemicals. The coatings also offer resistance to alkalis, acids and solvents; however, despite some similarities to standard glass the Liquid Glass coatings are stunningly different. The layer is flexible, breathable, highly durable, heat tolerant, anti-microbial and offers non-stick and “easy clean” characteristics. The application of the Liquid Glass range of products is amazingly straight forward. After preparatory cleaning, items such as wash basins, windscreens, and fabrics can be coated in a matter of seconds. Significantly most coated surfaces can be cleaned with water alone, this of course massively reduces the use of environmentally damaging cleaning products.

CCM has been involved with the development and marketing of Liquid Glass technology since 2003 and as a result we offer unrivalled experience in the supply, packaging and worldwide distribution of this technology. We are currently support projects in over 50 countries.



# Liquid Glass technology - the story so far!

It all started in Paris in 1845, when J.J. Ebelmen, a French scientist first discovered the Sol Gel process. In simple terms, he discovered that by manipulating a liquid which contained silica he could create glass. This was a very interesting theoretical discovery but at this time all that he was left with was small lumps of glass which were of no specific use. The next major step came in 1939 when the Schott Glaswerke company of Germany started to re-examine the technology. After a further 20 years of research they started to produce the first items coated with  $\text{SiO}_2$ ; however the processes were still complex and expensive. Evidently continued R+D was called for! Whilst the world was focussing on the space race, the computer revolution and the genome projects, the scientific community in Germany was creating "liquid glass technology" which could be applied on a DIY basis. The target being, to produce an undetectable coating, which could protect and enhance almost any surface. At the start of the millennium such coatings became available for the first time and we are proud to say that we were involved in their launch to a wide range of markets.



A.L.G.T. (Advanced Liquid Glass Technology). It has now been over 150 years since the discovery of the Sol Gel process and advances are continually being made. We are now able to bring you the 3<sup>rd</sup> Generation of Liquid Glass Technology via which we offer more efficient coatings, at reduced cost to the consumer. We also develop new technologies and technical coatings which are in the micron scale. These are used in a wide range of demanding environments, such as the marine, auto and aviation sectors. In essence A.L.G.T. is the culmination of 150 years of development. Where will be in another 150 years? Obviously we do not know the answer to this question ... but we do know that we offer state of the art technology for the world of today.

*\*Silica (silicon dioxide or  $\text{SiO}_2$ ) is one of the most common chemical compounds.*

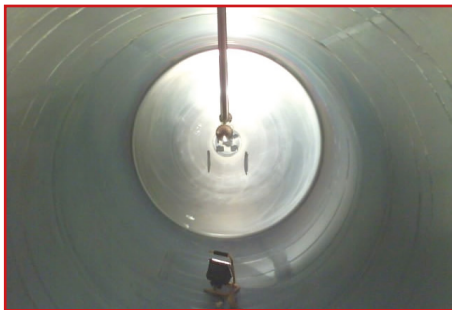


# Our product sectors

The following areas of application represent the main divisions within our organisation. The simple message is, “we can protect almost everything”.

## food

SiO<sub>2</sub>, ultra thin coating technology has been described as “one of the world’s most versatile technologies”; and when you consider that it is easy to apply, heat tolerant, flexible, breathable, highly durable, environmentally friendly, chemically inert, food safe, low cost and anti-bacterial, you can see why this comment has been made. SiO<sub>2</sub> has been used as a food additive for many years.



*Interior of a milk Tanker coated with SiO<sub>2</sub>.*

It is commonly used in products such as toothpaste, ketchup, and beer; however we now find that its greatest value to the food industry is when it is used as a surface coating. Surfaces which are coated with SiO<sub>2</sub> offer anti-sticking, easy clean, stain proofing and biostatic characteristics. SiO<sub>2</sub> coatings have already been evaluated by leading food manufacturers. As SiO<sub>2</sub> is inherently food safe and inert, it provides the ideal coating for food production plants, butchery departments, storage vessels, kitchen implements and food handling surfaces.

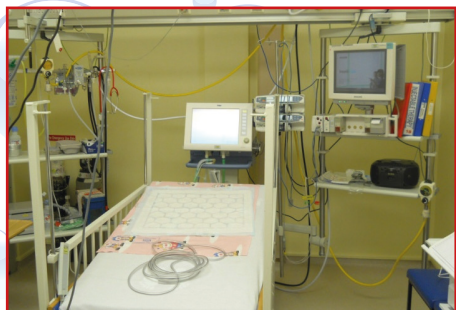
## industrial

We are contacted on a daily basis by companies wishing to know if an SiO<sub>2</sub> coating will be suitable for application to their product or general working environment. In essence our coatings can be applied to almost any surface, and in most instances we have an “off the shelf” solution to most requests; from **A**battoirs to **Z**oological specimen protection, we can offer a coating. It should be stressed that not all of our coatings are at the nano scale. Some of our coatings are in the 10 micron range. A nano scale coating is ideal if you wish to coat optical lenses but if you wish to coat flooring in a supermarket then a thicker coating may be more suitable. In all instances our self application coatings are low cost and very easy to work with.



## med

SiO<sub>2</sub> coatings have been tested extensively in the UK medical sector and Neil McClelland, our Technical Director, has been responsible for promoting the use of SiO<sub>2</sub> coatings within the UK’s National Health Service. He has presented extensively in the UK and was a guest speaker at the world famous IOM3 (Institute of Materials, Minerals and Mining). Testing has conclusively proven that SiO<sub>2</sub> coatings are of

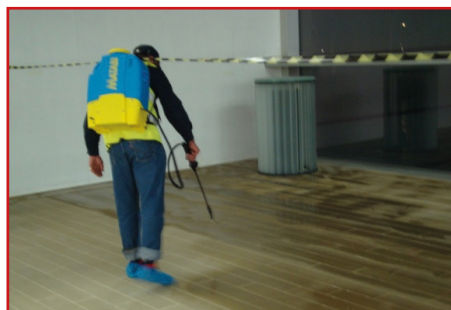


*Hospital ward coated with SiO<sub>2</sub>.*

enormous significance to the health sector. In simple terms the coatings can be used to create environments in which the bio burden is massively reduced and coated surfaces are exceptionally easy to clean. SiO<sub>2</sub> coatings and our anti-pathogen technologies can be used on almost all surfaces within the Healthcare sector, this includes clothing, stethoscopes, surgical instruments, walls, floors, operating theatres, bedside tables, touch screens, mobile devices etc. There are literally hundreds of surfaces which can be coated within a hospital, dental surgery or similar environment.

## facilities

We offer coatings for railway stations, hotels, schools, shopping centres, supermarkets, escalators, etc. Not only do we offer fantastic coatings for these facilities but we offer coatings for almost all of the surfaces within the facility. From anti-graffiti coatings on the outside to anti-bac coatings for ATMs on the inside. We also offer a complete range of stone protection coatings. These easy to apply, water based, topographical coatings, which are of course highly durable and breathable, are suitable for use on floors, monuments, work surfaces and of course interior and exterior walls. They are available in coatings which range from 50 nm to approximately 10 microns. Much depends on what you wish to protect and how you need to protect it. Our graffiti protection coatings can offer protection for up to 50 removal cycles.



*Our partners have coated the Nomura Bank and The Menin Gate with SiO<sub>2</sub>.*

## auto

SiO<sub>2</sub> coatings are ideal for protecting cars and motorcycles. Alloy wheels become easy to clean and blemish free, as brake dust does not burn into the coating. Exterior body work and fuel tanks become protected by a glossy, easy to clean and abrasion resistant coating. Car seats become stain resistant and odours can be significantly reduced, especially if an anti-pathogen variant is used. Perhaps most significantly all of the windows can be coated with a highly durable and undetectable super-phobic coating which massively increases visibility when driving in heavy rain.

# Our product sectors

## aviation

SiO<sup>2</sup> coatings have already been trialled extensively on private Business Jets. On interior surfaces the coatings have been used to protect carpets and fabrics against staining and wear, on galley surfaces to enhance the appearance and “cleanability”. (Coated surfaces maintain an “as good as new” appearance). Our anti-pathogen coatings will of course allow the client to travel in an environment which is as clean as possible. On the exterior of the aircraft, SiO<sup>2</sup> coatings have been proven to be significantly more durable than the conventional coatings which are currently in use. We are now working through CAA approvals.



SiO<sup>2</sup> coating on a Boeing 737

## marine

SiO<sup>2</sup> coatings have been tested on a wide range of vessels. The marine environment is of course very tough and our coatings have proven to offer excellent performance, and as ever the range of possible applications have proven to be enormous. On cruise liners expensive state room carpets can be protected as can all surfaces in kitchens restaurants, and bathrooms. Linen, bedding and soft furnishing become stain resistant. Bridge windows remain clearer in stormy conditions as sea salt does not burn into coated glass. Funnels do not become stained by exhaust deposits and so high standards of presentation are maintained. On pleasure craft, hulls can be protected against soiling and abrasion, soft furnishings can be protected against mould, galleys and heads can be coated with anti-pathogen protection. We also provide a complete cleaning, protection and sanitation program which utilises, award winning cleaning technologies.



## Liquid Glass - Protecting our world.

think green



[www.ccm-international.eu](http://www.ccm-international.eu)

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