

# Automated shade

– the why and the how



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## Introduction

If the history of technology has taught us anything it's that automation is a force to be reckoned with. At some undefined point in the second half of the 20th Century, it became apparent that most procedures, tasks, and processes that could viably be automated, eventually would be. Things that used to be manual – like dishwashing, changing television channels, opening garage doors, and even flying a plane or driving a car – are now either fully automated or heading in that direction.

The same is surely true for shading systems. While automated blinds and curtains have actually been available for more than 50 years, up until recently they were reserved for commercial and high-end residential applications. However, things have changed and the time for the widespread uptake of automated blinds

and curtains has arrived. The advent of the digital age, combined with the benefits associated with the latest generation of automated products – including those related to safety, sustainability, and more – point to the conclusion that many types of manual window coverings are on the way out.

Beginning by examining the benefits of automated shading systems, this whitepaper goes on to explain the best ways to incorporate them into projects. It outlines which types of window treatments are suitable for motorisation, the variables associated with motor selection and placement, and why matching the best performance fabrics with the right automation system is the key to performance maximisation, improved thermal efficiency, and sustainability.



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## Types & Benefits

Most types of windows and blinds can be automated. In terms of internal systems, suitable products include roller blinds, pleated blinds, curtains, roman blinds, and venetian blinds, while in terms of external systems, skylight systems, folding arm awnings, external roller blinds, and venetian (rack arm) awnings are also all suitable for motorisation and automation.

The main preference – and the key reason that automated systems are generally internal – is that external systems need to be protected from the elements, because factors like high or gusty winds, rain and snow can affect the functioning of external products.

The benefits of automated window coverings are many. Perhaps the most significant is improved safety. As we shall see, the cords and chains associated with manual blinds and curtains are a safety risk, particularly for young children. In the most serious cases, accidental strangulation has occurred. The simple fact that automated blinds and curtains are hands free, and have no need for accessible cords, eliminates this problem.

Another benefit is convenience. With an automated system installed, users can adjust their blinds and curtains with the tap of a device or a simple voice command. Moreover, in applications where the window coverings are integrated with a Building Management System (BMS), no effort at all is required. Curtains and blinds can be set to adjust at certain times of the day, or according to changing weather, variable room usage, and so forth. Difficult to access blinds are no problem, and neither are blinds that would be too bulky or heavy for manual systems to handle.

This brings us to another key benefit, sustainability. Specified thoughtfully, automated window coverings utilising performance fabrics can elevate efficiency – and therefore also light, glare, and heat control – to a new level. In turn, this type of precise control and operation translates to less need for air conditioning and heating, reduced energy usage and reduced carbon footprints. Beyond that, we can also add improved privacy and security to the list of benefits; as well as what can only be described as the ‘Wow Factor’. Put simply, aesthetically pleasing, highly-functional automated shading systems are a smart choice for those looking to impress guests and clients.



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## Safety & Regulatory Changes

It is important to note the scale of the above-mentioned safety issue and outline the efforts being made, globally, to address it.

While here in Australia exact figures are difficult to come by, in the US between 1990 to 2015, nearly 17,000 children below the age of six were treated in hospitals for injuries related to blinds (and 271 of those died from their injuries).<sup>i</sup> In response, American authorities implemented a regulation stating that, from December 2018, all window-coverings sold in stores and online must be cordless or have inaccessible cords.<sup>ii</sup> Not long after, in May 2019, Canadian authorities went further and applied similar restrictions to all types of window coverings, both mass-produced and made to measure.<sup>iii</sup>

While similar strong legislation has not yet been introduced in Australia, it is considered a case of not if but when it will be. As it stands, 'The Trade Practices (Consumer Product Safety Standard - Corded Internal Window Coverings) Regulations 2010' sets out the mandatory requirements for corded internal window coverings across the nation.<sup>iv</sup> Beyond that, many within the industry expect some type of ban on corded products to be introduced within the next 12-24 months.

Combined with the above-mentioned benefits, these regulatory changes are only hastening the move from manual to motorised and automated systems.

## Factors to Consider when Automating

Consideration of automated window covering systems should ideally be undertaken early, during the early planning stage of projects. Those included in discussions should include consultants/suppliers, electricians and, of course, clients. Conversations between architects and clients should include questions about why an automated system is suitable for the project, how much flexibility and group control are needed, what attracts (or doesn't attract) the client to the various options, and so forth.

Having had these discussions with relevant stakeholders, specifiers should be in a position to address these considerations:

### Motor types

Choice of motor depends on how the window coverings will be controlled, product size and type, and client requirements. At the bottom end, **battery powered motors** (also known as wire free motors) are suitable for window coverings in boats, caravans and some smaller internal residential applications. These motors are controlled by radio frequency controllers, which are either hand held or fixed to walls, and can be easily integrated into Smart Home automation systems.

The next type of motor, **240V hard wired motors** (also referred as wired technology) are the most widely used. Suitable for wiring into group controllers which integrate into a BMS, these units generally have manually

set mechanical limits and have no capacity to provide feedback from the motor to the control system.

Representing the next step up are **240V motors with inbuilt radio frequency technology**. While these are suitable for most small to midsized set ups, on larger scales in cases where there is high volume of commands to several motors, interference can be a problem. Then finally, there are also **240V motors that incorporate smart technology**, and are able to provide feedback to BMS control systems.

### Control method

It is necessary to consider and plan control options early in the process. In this way, it is possible to future proof for things like smart connectivity, accessibility for installation and future servicing (with access hatches and so forth), and pre-wiring diagrams.

### Fixing points

Similarly, it is important to ensure that the building has adequate structure to secure products that are typically heavier than their manual alternatives. For example, structural timber may be necessary.

### Power supply

Specifiers must work with electricians to ensure that the correct power supply is available in all relevant locations.

## Performance Fabrics & Environmental Performance

As the Blind Manufacturers' Association of Australia has pointed out, 30% of heating energy is lost through windows and 76% of sunlight that falls on standard double-pane windows enters to become heat.<sup>v</sup> With their glare and heat reducing capabilities, blinds and curtains are an obvious way to control this heat and improve the thermal efficiency of buildings.

In turn, the best way to maximise the thermal performance and efficiency of these window coverings is by automating them and pairing them with performance fabrics, some of which have been shown to reduce heat gain by up to 85%.<sup>vi</sup> In this way, automated systems are able to ensure

shading is provided where and when it is required, without human intervention, while at the same time, the material from which the window coverings are made ensures they do the job as effectively as possible.

Following all these steps makes it possible to maintain occupant wellbeing, creativity, and productivity in an environment with good visual and personal comfort that balances daylight exposure, vision out, heat control, and glare control. Given this level of performance, such systems help projects to meet several regulations and certifications, including NCC Section J, Green Star, NABERS, and WELL.



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## VEROSOL

When it comes to window coverings, the time for automation has arrived. Now far from the novelty they may have been in previous decades, motorised and automated blinds and curtains deliver numerous benefits including not just convenience, but also safety, sustainability, security, aesthetic appeal, and more.

While legislative changes are accelerating the uptake of these systems, both locally and abroad, those considering their use should proceed with appropriate attention to detail. As discussed in this whitepaper, they need to consider a range of factors like client requirements, motor size and type, control method, fixing points, power supply, and more. And they must also consider product choice. They need to decide whether to enlist the services of an established, well-known supplier like Verosol or a lesser-known alternative.

A global leader in window covering solutions and manufacturer of a range of high-performance products, most of which are suitable for automation, Verosol has over 50 years' experience in the sector. Combined with its signature SilverScreen performance fabrics, which have been shown to reflect up to 85% of solar radiation, reduce the SHGC, virtually eliminate UV radiation, and significantly reduce glare, these automated systems can be relied upon to deliver all the benefits of automated systems, effectively and reliably.

Beyond the quality of this range, for Verosol, experience itself is a key differentiator. Through the passage of time, and across countless successful projects, the company has developed the attention to detail required to handle all the above-mentioned challenges. It has the expertise to guide its clients through the various options and regulatory requirements, to deliver optimised solutions that are reliable and fit for purpose.

## References

- i American Academy of Pediatrics, "Pediatric Injuries Related to Window Blinds, Shades, and Cords". <https://publications.aap.org/pediatrics/article/141/1/e20172359/37741/Pediatric-Injuries-Related-to-Window-Blinds-Shades?searchresult=1?autologincheck=redirected>
- ii The Window Covering Manufacturers Association, "Window Covering Manufacturers Association Announces Historic New Window Covering Safety Standard". <https://windowcoverings.org/window-covering-manufacturers-association-announces-historic-new-window-covering-safety-standard/>
- iii Government of Canada, "Corded Window Coverings Regulations: SOR/2019-97". <https://canadagazette.gc.ca/rp-pr/p2/2019/2019-05-01/html/sor-dors97-eng.html>
- iv Australian Government, Trade Practices Act 1974, "Trade Practices (Consumer Product Safety Standard – Corded Internal Window Coverings) Regulations 2010". <https://www.legislation.gov.au/Details/F2010C00801>
- v Blind Manufacturers' Association of Australia, "Saving energy at home". <http://bmaa.net.au/energy-savings-at-home/>
- vi Verosol, "Global leaders in solar control fabrics". [https://verosol.com.au/wp-content/uploads/2021/10/Verosol\\_Presentation\\_Brochure\\_2021-10.pdf](https://verosol.com.au/wp-content/uploads/2021/10/Verosol_Presentation_Brochure_2021-10.pdf)



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