A CONTRACTOR'S GUIDE TO COMPLIANT TIMBER WINDOWS

In today's construction landscape, compliance is non-negotiable - and timber windows are no exception. As a contractor, whether you are working on a new build, renovation, or heritage restoration, it is essential that you have assurance that the timber windows you are installing meet performance and compliance standards in order to deliver safe, efficient, and compliant projects.

This guide has been designed to give contractors a practical understanding of what is required to procure timber windows that meet stringent standards of compliance. In this guide, we will outline UK Building Regulations, performance standards and testing and certification requirements. Whether you are managing a large-scale project or heritage renovation projects we will offer an understanding of how to meet stringent criteria required to deliver compliant projects.

UNDERSTANDING UK BUILDING REGULATIONS

Building regulations are a set of legal requirements in the UK that ensure buildings are safe, energy-efficient, and accessible. They apply to the design and construction of new buildings as well as alterations to existing ones. When it comes to timber windows, building regulations cover aspects such as thermal performance, ventilation, fire safety, and structural integrity. Let's take a look at some of the regulations that apply to timber windows.

PART L – THERMAL PERFORMANCE (U-VALUES)

Thermal performance of a window relates to the thermal insulation it provides, preventing heat loss from a building, and the solar gain it provides, allowing heat into the building. Thermal performance of a window is measured using U-values. Following the Part L building regulation update in June 2022, the requirement for maximum U-values for windows in existing buildings changed from max.

1.6W/m2K to 1.4 W/m2K or less, and the requirement for maximum U-values in new builds is max. 1.4W/m2K to 1.2W/m2K or less.

There are also specific U-values for other elements of the building, as well as certain requirements for the overall building to achieve a certain performance value.

PART F – VENTILATION

Part F of the building regulations addresses the need for proper ventilation in buildings to maintain air quality and prevent issues such as condensation. Part F states 'there shall be adequate means of ventilation provided for people in the building', meaning that supplying a minimum level of outdoor air for the occupants' health and the ability to rapidly dilute indoor air is required. Historic and traditional buildings may not need to comply with Document F if they are listed properties or in conservation areas. To improve ventilation, many will opt for trickle vents, which are a compliant and simple solution to ventilation. However, they can be ineffective as they are often closed when there is a draught and are not always reopened.

PART Q – SECURITY

Part Q of the building regulations relates to new dwellings only; this includes dwellings formed by a material change of use and covers all accessible doors, plus the ground floor, basement, and other easily accessible windows. For the woodworking sector, this document introduced new requirements for the security rating of doors and windows in new homes (including new homes created by a change of use, such as barn conversions).

In addition to Part Q, PAS24 and Secured by Design are other methods of showing security compliance. PAS24 is a security standard designed to assess whether a window and frame can withstand a series of measured manual and mechanical tests to withstand an opportunistic intruder for a period of time. Secured by Design (SBD) is a police initiative developed to improve the security of buildings and their immediate surroundings. To be SBD compliant, products are required to be certified to PAS24 by an approved notified body.

PART B – FIRE SAFETY

If there are any fire safety requirements, these will be established as part of the specification. As a contractor, you should be confident that your timber window meets the specific fire safety requirements and for this to be proved by adequate certification. An important factor to consider is that when dealing with buildings over 18m, there needs to be considerations for the interface components, such as the membranes, adhesives, and mastics.

PART K – SAFETY

Part K is concerned with safety performance and protection from falling, collision, and impact. For windows, safety performance relates to barrier loading (protection from falling), restrictors, and protection against impact with glazing (collision and impact). If a window has a cill height lower than 800mm and is on the floor above ground level, safety measures must be in place. Glazing is another safety factor that should be considered. According to Part K, safety glass should be used in low-level windows under 800mm from the floor.

PART O – OVERHEATING PREVENTION

Part O aims to protect the health and welfare of building occupants by reducing the occurrence of high indoor temperatures. The efforts we have all gone to in order to make buildings more airtight and thermally efficient have also increasingly made it harder to keep them cool in summer. Document O states that "Reasonable provision must be made in respect of a dwelling, institution or any other building containing one or more rooms for residential purposes to:

a) Limit unwanted solar gains in summer by using glass coatings
b) Provide adequate means to remove heat from the indoor environment by purging ventilation through window openings.

PART E – ACOUSTIC RATINGS

Acoustic performance defines the acoustic insulation provided by a window that prevents noise from penetrating from the outside to the inside of a window. You can specify to BS EN ISO 717-1 for acoustic specification, which focuses on the rating of sound insulation in buildings and building elements.
Enhanced acoustic performance can be achieved if the manufacturer has carried out sufficient testing on their windows and can provide the evidence.

Noise management has been enshrined in law under Part E of the building regulations, addressing the 'resistance of the passage of sound'.

BUILDING REGULATIONS IN HERITAGE BUILDINGS

Whilst most existing buildings are not required to meet modern standards unless being extended or significantly altered, window replacements are classed as controlled fittings under the regulations and therefore must comply with some of the building regulations, including thermal and safety performance. Historic buildings are treated differently. Part L states that full compliance is not expected where it would unacceptably alter the building's character or appearance. Instead, a more prominent approach is taken, introducing draughtproofing or using low-emissivity secondary glazing.

PERFORMANCE STANDARDS FOR TIMBER WINDOWS

Contractors must ensure that timber windows meet not only UK Building Regulations but also the relevant British Standards (BS) and European Norms (EN). These standards govern everything from design and manufacture to installation and performance, helping ensure that windows are safe, durable, and fit for purpose. BS are a set of technical regulations and specifications established by the British Standards Institution (BSI), the UK's national standards body. These standards ensure that products, services, or systems meet specific criteria for quality, safety, and efficiency. EN standards are similar, but these are technical standards drafted and maintained by European committees, implemented as national standards across EU member states.

Various BS and EN standards apply to timber windows, including the following:

Security Performance

PAS24: A security standard designed to assess whether a door and frame set can withstand a series of measured manual and mechanical tests of an intruder.

Thermal Performance

BS EN 10077-1: 2017: Thermal performance of windows, doors and shutters. Calculation of thermal transmittance, general.

BS EN 10077-2: 2017: Thermal performance of windows, doors and shutters. Numerical method for frames.

Glass Technology

Test to ensure that the manufacturer can produce a sealed unit of the minimum quality requirements, thereby guaranteeing the longevity of the product.

Part 2: Tests for moisture penetration
Part 3: Tests for gas leakage

Weather Performance

BS 644:2012: Requires products to be classified for weather performance, but has no stipulation for what classification they should achieve.

BS 6375-1:2015: Defines how products should be classified and defines a method for specifying a performance level and classification.

Acoustic Performance

BS EN ISO 717-1: Provides a detailed framework for assessing airborne sound insulation, ensuring that your construction projects meet the highest acoustic standards.

Safety Performance

BS6180: A critical standard for the design of barriers in and about buildings

BS EN 16612: This standard provides a comprehensive methodology for determining the lateral load resistance of glass panes through calculation, to ensure safety, reliability, and efficiency in building design and construction.

Selling in the UK

BS EN 14351: 2006: Requires air, wind, and water performance to be UKCA marked if these performance values are stated.

Visit the BWF website for a complete list of the BS and EN standards for timber windows and what they mean:

Timber Windows - British Woodworking Federation

CERTIFICATION AND TESTING

As well as adhering to industry standards, manufacturers should be able to prove that their timber windows comply with a range of certifications to provide assurance that the product performs. Products will often need to provide evidence that they meet the required accreditations requested by the client when building specifications.

It is also valuable for timber windows to obtain test evidence. Product testing is undertaken to show that a particular product can achieve specific requirements and can meet certain standards, ultimately demonstrating that it can perform well.

At George Barnsdale, we have an extensive portfolio of certifications that demonstrate our timber windows comply with various third-party certification bodies and are regularly audited to ensure standards are upheld. We invest time and money in research and development to fully understand every aspect of our products.

Our on-site R&D facility allows us to carry out a range of tests. The facility is equipped with a weather test rig, salt spray tester chamber, and an IGU monitoring façade, which allows us to ensure we are constantly evolving and manufacturing products that meet and even surpass industry standards.

CONCLUSION

In conclusion, ensuring timber window compliance is more than a box-ticking exercise - it's about delivering safe, efficient and legally sound projects. Understanding the regulatory requirements and what to look for in a supplier will help ensure you meet stringent requirements, protecting both your project, reputation, and bottom line.

As a contractor, failure to comply will not only result in failed inspections, costly rework, and legal liabilities but can also lead to delays, budget overruns, and reputational damage. By understanding regulations and installing compliant products, you not only reduce this risk but also enhance the longevity, energy efficiency and safety of the buildings.

In summary, there are various factors to consider to ensure timber windows are compliant and should therefore be considered of equal importance.

These include:

- Building Regulations and Compliance
- Performance Standards
- Certification
- Heritage and Conservation Considerations
- Installation Best Practices - how well your timber windows are installed will determine their longevity and the amount of maintenance required over their lifespan.
- Maintenance
- Sustainability

IS YOUR TIMBER WINDOW SUPPLIER COMPLIANT?

For expert support and high-quality products, get in contact with us today to see how we can support you.

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