

INFORMATION BULLETIN

Low Sight Line IGU's – THE FACTS

Much is publicised on the lack of understanding amongst those involved in the specification of low sightline narrow cavity insulating glass units (IGUs) when renovating or replacing traditional sash and case timber windows in listed buildings and conservation areas. The confusion around this matter results in the installation of sub-standard non-compliant IGUs in consumers' homes and public buildings that are prone to failure within a relatively short period of time. This information bulletin is issued in order to clarify the true position.

Root Cause

Demand for non-compliant IGUs is driven by the specification of individual and inappropriately thin glazing bars or astragals of between 16 and 22mm that were originally designed to take a single pane of 3mm glass and therefore do not have sufficient cover to accept a compliant IGU. The lowest compliant sightline (edge of glass to top of spacer-bar) available within an IGU is 8.5mm. However, some firms reduce the sightlines of the IGUs to as low as 5mm and trim the feather / glazing platform within the astragal to the thickness of a match, in attempts to "make fit."

The Law

Low sightline units are covered by a harmonized European product standard (EN 1279-5) and so the Construction Products Regulations (CPR) (EU 305/2011) applies to their manufacture, import and distribution. This regulation sets requirements for placing construction products onto the market. Ref: Secretary of State for Housing and Local Government.

Enforcement / Sentencing

Monitoring compliance and enforcement duties fall to trading standards bodies in England, Scotland and Wales and District Councils in Northern Ireland. A successful prosecution for a breach of the Construction Product Regulations can result in a 3 month custodial sentence and / or a fine not exceeding level 5 on the Criminal Justice Act scale. Like many other departments, trading standards complain of having their budgets / resources cut resulting in a lack of enforcement resulting in some firms taking the gamble of flouting the CPR. One fully certified manufacturer, The Original Glass Company Ltd has now come out and published a list of offending companies which has been forwarded to Trading Standards for investigation.

Glass and Glazing Federation

The GGF has made it clear that **all** IGUs placed on the market in the UK must have achieved passes to EN 1279 parts 2 and 3 and have an EN 1279-4 component manufacturer confirmation. Any manufacturer producing these reduced sightline IGUs must meet the requirements of the CPR in Great

Britain and Northern Ireland. GGF publication 70.4 gives unequivocal guidance on compliance and clearly states that derogations cannot be claimed under article 5. The GGF has already reported offenders to Trading Standards.

Glazing Methods

With regards to edge clearance (distance between edge of unit and glazing platform) – in accordance with GGF datasheet 4.2, clause 2.4.3 - whilst the recommended minimum is 5mm, this may be reduced to a minimum of 3mm for low sightline IGUs. Given the spacer bar sightline is 8.5mm, the total tight sightline, level with the frame rebate upstand is 11.5mm. Glazing bar feather width can be reduced from a recommended 8mm to a minimum of 6mm to still enable glazing sprigs to have some purchase into the timber. If a minimum of 2mm edge cover either side is provided for to ensure the sealants remain protected, see clauses 2.4.4 and 2.4.5, the minimum astragal width that can successfully accept compliant low sightline IGUs is 33mm.

[Please see Figure 1](#) for an illustrative diagram.

Safety

If a frame designed to be glazed with single 3mm glass has the load on it effectively trebled by fitting 2 x 4mm IGUs, the window will be structurally unsound and give way under minimal pressure. If someone stumbled against one of these windows a few storeys up, the consequences could be horrific. In addition, such a fragile construction is highly unlikely to offer any realistic form of fire protection. This has been demonstrated by mechanical stress testing. [Please see Image 1](#) for a comparative image of a compliant and non-compliant window after mechanical stress testing. Please follow links to view these tests in action:

[Non-Compliant Window](#)

[Compliant Window](#)

Security

Windows with such a flimsy structure have no inherent robustness or structural integrity and burglars gain entry to peoples' homes by simply applying pressure where the astragals cross and the window collapses. [Please see Image 2](#) for a real life break in, illustrating how easily this can happen.

Perimeter Heat Loss

Regardless of the claimed 'u' values for individual IGUs within multi pane sashes, the psi value of the whole window frame will be severely compromised in comparison to a single IGU per sash.

Solutions

Modern manufacturing techniques have evolved and resulted in structural glazing sashes that accept compliant IGUs with the correct sealant depth, sub-divided within the IGU cavity, accurately replicating through glazing bars thereby retaining traditional aesthetics whilst complying with CPR.

These are completely indistinguishable from the thin straight through astragals and are available from timber window manufacturers throughout the UK.

Please see [Image 3](#) for images of unglazed, compliant and non-compliant sashes.

Historic Environment Scotland

Within their guidance document, Managing Change in the Historic Environment - Windows, the following clear statement is made on page 21 “If you are replacing your windows you will want assurance that the units being supplied achieve the results you seek. New glazing, in particular, Insulating Glass Units (IGUs), should be manufactured in accordance with the requirements of the Product Standard EN 1279-5, a requirement for legal compliance with the Construction Products Regulations (CPR). The industry body, the Glass and Glazing Federation (GGF) has a wealth of information for consumers and providers on its website and in its publications ([Low Sightline IGUs](#), [GGF Industry Guidance](#)) which includes the Industry Guidance details on the Construction Product Regulations and the tests that must be complied with to meet them.”

Historic England

Historic England’s guidance document Traditional Windows: their care, repair and upgrading, also confirms the need to comply with Construction Products Regulations on page 60.

Certification Bodies

Censolutions Ltd, the industry specific certification experts, have publicly raised concerns on numerous occasions over the illegal placement on the market of low sightline IGUs. The following is an excerpt from their latest press article on the subject:

“Calling time on non-compliance

Last year a glass supplier was jailed for passing off standard laminated glass as fire rated glass, which was reported by the BBC. This same practice is occurring daily in the UK, with illegal heritage units being placed on the market by unscrupulous suppliers. These are then specified by unsuspecting or unaware specifiers, so they continue to be produced. Some of the offending companies are also guilty of misrepresentation of certification by providing test evidence for completely different products. As well as working closely with our customers to ensure best practice and quality, we also try and attempt to work with Industry Federation Bodies to support the elimination of the unethical element of the market. It’s time the industry pulls together to make a stand against non-compliance. So many manufacturers out there are working hard producing quality, compliant products it’s completely unfair that those who don’t, continue to trade. Don’t turn a blind eye and let the bad practice continue, shout about it, report these firms and let’s eliminate it once and for all.”

Conclusion

The only EN1279 and consequently CPR compliant low sightline IGU with a 4mm cavity available in the UK has an 8.5mm sightline and is only available with aluminium spacer bar. No 4mm cavity IGU with a sightline lower than this e.g. 5, 6, 7 or 8mm has passed the required tests and is therefore non-compliant and should neither be specified nor placed on the market.

Figure 1

Clearances:-

Edge clearance: The distance between the edge of the IGU and the rebate platform.

Edge cover: The distance between the edge of the spacer bar and the sight line.

Sight Line: Edge of glass to top of spacer bar.

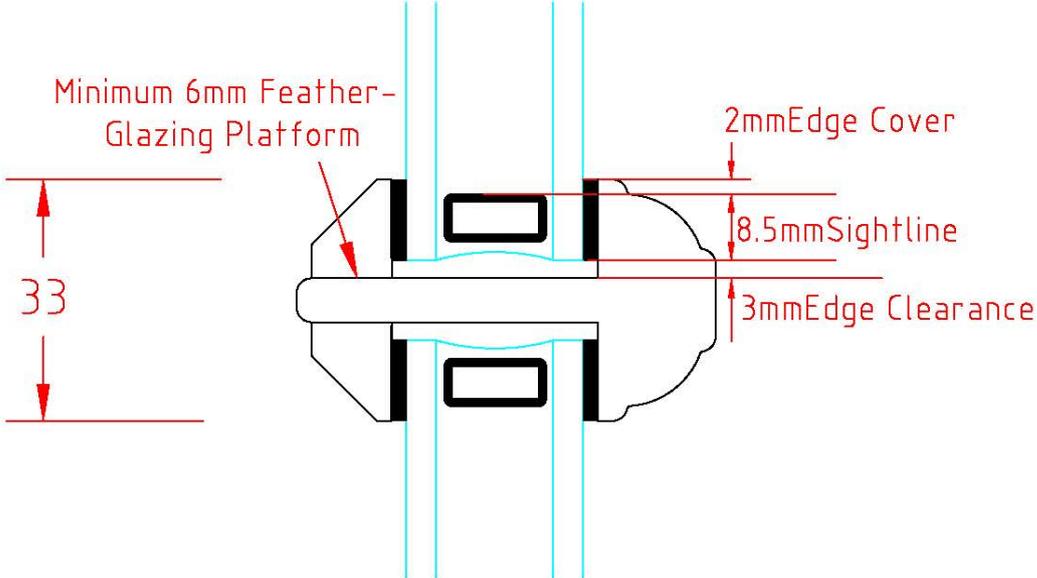


Image 1



Image 2



Image 3

