



## Pilkington Optilam™

Pilkington **Optilam**™ offers optimum protection for people and property. For safety, security or noise control, it remains intact and in place after accidental impact reducing the possibility of injury or restricting access after deliberate impact. Pilkington **Optilam**™ is trusted for use in applications from domestic conservatories to large commercial or public buildings.



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## Introduction



Pilkington **Optilam™** is manufactured by combining two or more panes of glass with one or more polyvinylbutyral (PVB) interlayers. The interlayers ensure the integrity of the glass by holding the broken pieces in place should damage occur.

### Benefits

- When impacted, Pilkington **Optilam™** is designed to remain intact or to break safely in such a way as to reduce injury. Glass fragments adhere strongly to the interlayer – with the resistant cushioning effect dissipating the energy.
- Fully tested.

- When suitably specified the product will allow the installation to comply with the requirements of
  - Part N (England and Wales) Glazing Materials and protection against impact.
  - Part P (Scotland) Miscellaneous Hazards.
  - Part V (Northern Ireland) Glazing.
- Up to Class A impact safety performance to BS 6206: 1981/BS EN 12600 classification 1.
- Can be incorporated in Pilkington **Insulight™** units in combination with many other products in the Pilkington range of high performance glass.
- Can offer optimum protection of people and property.
- Can be used for a wide variety of applications, particularly beneficial for overhead glazing, full-height barriers, shop fronts, doors and low-level glazing.
- Supplied and backed by a comprehensive technical advisory service to guide you in the product's optimum use.
- Provides sophisticated solutions for safety and security.



**Table 1: Impact safety performance of Pilkington Optilam™**

Glass thickness (mm)	Classification to BS 6206 : 1981	BS EN 12600
6.4, 8.4	Class B	2
6.8, 7.5, 8.8, 9.5, 10.8, 11.5, 12.8, 13.5	Class A	1

Note: In the future, references to BS 6206 in BS 6262-4 and relevant Building Regulations (e.g. Part N in England & Wales) are likely to be superseded by BS EN 12600.

**Table 2: Resistance to manual attack**

Category of resistance	Drop height (mm)	Number of strikes	Code designation of resistance class
P1A	1500	3 drops of 4.11kg sphere	BS EN 356 P1A
P2A	3000	3 drops of 4.11kg sphere	BS EN 356 P2A
P3A	6000	3 drops of 4.11kg sphere	BS EN 356 P3A
P4A	9000	3 drops of 4.11kg sphere	BS EN 356 P4A
P5A	9000	9 drops of 4.11kg sphere	BS EN 356 P5A
P6B	Axe strikes on broken glass	From 30 to 50	BS EN 356 P6B
P7B	Axe strikes on broken glass	From 51 to 70	BS EN 356 P7B
P7B	Axe strikes on broken glass	More than 70	BS EN 356 P8B

## Applications

### Safety

Pilkington **Optilam™** can be used in applications where it is subject to accidental human impact. A summary of typical performance in accordance with BS 6206/BS EN 12600 is given in Table 1.

### Security

Depending on the configuration, Pilkington **Optilam™** can be used in applications where resistance to manual attack is required. According to BS EN 356, glass in buildings is divided into categories, of resistance to manual attack on the basis of results of tests carried out with the use of a hard body impactor and an axe. These are summarised in Table 2.

### Noise control

Efficient noise control is a major challenge for architects. Noise is an environmental factor which may be both physically and mentally harmful to human beings. Pilkington **Optilam™** offers excellent sound insulation. With greater emphasis on personal protection and comfort, noise protection is a major consideration in any design. Both the law and building regulations provide recommendations regarding permissible noise levels in various buildings. This encourages architects to use materials which satisfy specific acoustic protection requirements, and motivates them to offer interesting solutions.

Pilkington **Optilam™** reduces the level of noise with considerably greater efficiency than ordinary glass of the same thickness – in fact, it is superior to insulating glass units having the same total thickness of glass. For even greater performance, Pilkington **Optilam™** Phon is available. (See separate datasheet)

**Table 3: Maximum sizes of Pilkington Optilam™**

Glass thickness (mm)	Maximum Stock Sizes (mm)
<i>Determined in accordance with BS 6206 : 1981 Class B/BS EN 12600 – Class 2</i>	
6.4	3210 x 6000
8.4	3210 x 6000
<i>Determined in accordance with BS 6206 : 1981 Class A/BS EN 12600 – Class 1</i>	
6.8	3210 x 6000
8.8	3210 x 6000
10.8	3210 x 6000
12.8	3210 x 6000
<i>Determined in accordance with BS 5544/BS 6206 : 1981 Class A/BS EN 12600 – Class 1</i>	
7.5	3210 x 6000
9.5	3210 x 6000
11.3 (5 Ply)	2500 x 3210
11.5	3210 x 6000
13.5	3210 x 6000

**Table 4: Sound insulation data for Pilkington Optilam™ and Pilkington Optilam™ Phon**

Glass type		RW (C; C <sub>r</sub> )
6mm	Pilkington <b>Optifloat™</b> Clear (for reference)	31 (-2; - 3)
6.4mm	Pilkington <b>Optilam™</b>	32 (-1; - 3)
8.8mm	Pilkington <b>Optilam™</b>	33 (-1; - 3)
10.8mm	Pilkington <b>Optilam™</b>	34 (-1; - 3)
6.8mm	Pilkington <b>Optilam™</b> Phon	35 (-1; - 3)
8.8mm	Pilkington <b>Optilam™</b> Phon	37 (-1; - 4)
10.8mm	Pilkington <b>Optilam™</b> Phon	38 (-1; - 2)
12.8mm	Pilkington <b>Optilam™</b> Phon	39 (0; - 2)
16.8mm	Pilkington <b>Optilam™</b> Phon	40 (0; - 2)

*Note: For Pilkington **Optilam™** Phon, R<sub>w</sub> (C; C<sub>r</sub>) determined in accordance with BS EN ISO 717-1. For other configurations, R<sub>w</sub> (C; C<sub>r</sub>) based on generally accepted values in BS EN 12758: 2002. These represent conservative values which may be adopted in the absence of specified measured data.*

### Protection against ultraviolet radiation

Pilkington **Optilam™** absorbs UV radiation (UVB and UVA). This radiation can affect the colour of objects exposed to it. Pilkington **Optilam™** has very low UV transmission, which may help to protect those materials prone to fading when subject to prolonged exposure to UV radiation. Note: Fading of materials is a complex phenomenon and can be influenced by factors other than exposure to UV radiation.

### Solar control

Pilkington **Optilam™** can be manufactured with various types of interlayer and glass to provide good solar control and aesthetic effects for special applications.

### Thermal insulation

Pilkington **Optilam™** can be supplied incorporating low emissivity glass such as Pilkington **K Glass™** and Pilkington **Optitherm™** SN to ensure optimum thermal comfort.

### Self-cleaning

Pilkington **Activ™** self-cleaning glass is available in a range of laminated products, details of which can be supplied on request.

### Decoration

Pilkington **Optilam™** I coloured decorative laminated glass provides designers with considerable artistic freedom. (See separate data sheet)

## Glazing

Glazing should generally be carried out in accordance with the requirements of BS 6262 and BS 8000: Part 7.

When Pilkington **Optilam™** is used, the following points should also be noted:

- Care should be taken in the selection of glazing compounds. Whilst the use of oil based materials should be avoided, the choice of sealant should be confirmed by the supplier as to its compatibility.
- Installation where there is a possibility of prolonged contact with any liquid should be avoided.
- Any cleaning agents or solvents should be checked for compatibility with laminated glass prior to use.

Where the product is to be butt jointed care should be taken to ensure that the materials used are compatible with laminated glass and they are not applied in a way that would trap moisture against the interlayer.

For maximum performance of Pilkington **Optilam™** for security, adequate and full support must be provided by an appropriately designed frame. Pilkington can be consulted on different product applications, but it is the responsibility of the purchaser to ensure that the glazing system is appropriate.



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