

# Angel WOCD™

*formerly Angel Ventlock®*

## Patented Window Opening Control Device

The Angel WOCD is Mighton's patented window opening control device, designed to prevent young children from falling through open windows while allowing full emergency egress. It is tested and certified to ASTM F2090-21 (USA) and BS EN 14351-1:2006 (Europe), carries Secured by Design approval, and has been successfully tested as a critical component within PAS 24:2016 approved windows.

## Testing

### ASTM F2090-21 — Mechanical Performance

Whilst a US standard, ASTM F2090-21 is one of the most rigorous window safety device standards in the world and provides independent verification of the Angel WOCD's durability and function.

- **Static load test** — the device must withstand a 75 lb (34 kg) force without failure
- **Cycle testing** — repeated open/close cycles to confirm consistent long-term performance
- **4-inch sphere test** — confirms the device prevents a rigid 4-inch diameter sphere passing through the controlled opening; the 4-inch dimension is the universally recognised maximum through which a young child's head cannot pass
- **Tension test** — mechanical pull test to verify structural integrity of fixings and components
- **Auto-reset verification** — confirms the device automatically resets to the restricted position when the sash is closed

### BS EN 14351-1:2006 — European Product Standard

The Angel WOCD meets the safety device requirements of BS EN 14351-1:2006, the European standard for windows and external doorsets.

- **Load-bearing capacity test (Clause 4.8)** — the device must hold the sash in place for 60 seconds when 350N of force is applied in the most unfavourable position and direction
- Tested in accordance with EN 14609 or EN 948 reference methods
- Confirms the device meets the requirements of BS 6375-2, which specifies that safety restrictors fitted to windows must meet BS EN 14351-1

### Focus Group Testing

- The Angel WOCD has been focus group tested with children
- Tests observed whether young children could operate or defeat the release mechanism
- Confirms genuine child resistance in real-world conditions, beyond what mechanical laboratory testing alone can demonstrate

## Secured by Design (SBD)

Secured by Design is the official UK Police security initiative. The Angel WOCD is an SBD-approved device, recognised under the Police Preferred Specification — the only route by which a manufacturer can obtain police recognition for a security product in the UK.

- Independently tested to relevant security standards and certified by a UKAS-accredited third-party body
- Included on Mighton's Secured by Design licence
- Demonstrates the device actively contributes to designing out crime, not just child safety
- SBD-approved developments have been shown to experience significantly fewer burglaries

## PAS 24:2016 — Enhanced Security Performance

PAS 24:2016 is the UK's enhanced security standard for windows and doorsets, designed to resist attack by a casual or opportunistic burglar using readily available tools. The Angel WOCD has been successfully tested as a critical component **within windows** that have achieved PAS 24:2016 certification.

- Means the Angel WOCD performs under real-world simulated attack conditions as part of a complete window assembly
- Supports window manufacturers in achieving PAS 24:2016 compliance
- Required by Secured by Design for windows in **new** residential developments

## Advantages Over a Fixed or Basic Non-Resetting Restrictor

- **Emergency egress** — releases fully without keys, tools or special knowledge; the absence of a key means there is no risk of a key being lost, misplaced or unavailable in an emergency
- **Auto-reset** — automatically returns to the child-safe restricted position when the window is closed; a fixed or basic restrictor requires manual re-engagement every time
- **No permanent restriction** — allows full ventilation and window use when needed, unlike a fixed restrictor which limits the opening permanently
- **Certified to recognised standards** — meets ASTM F2090-21 and BS EN 14351-1:2006; basic restrictors typically do not meet these standards
- **Police approved** — carries Secured by Design recognition; a basic restrictor offers no equivalent security credential
- **Forced entry resistance** — surpasses forced entry tests as part of PAS 24:2016 window assemblies; a basic restrictor offers little or no security benefit
- **Suitable for sash windows** — versatile across window types