RISE | Retrofit information, support & expertise

# The Hierarchy of Retrofit Compliance

## Quick guide

August 2025

Funded by:

Department for Energy Security & Net Zero

www.riseretrofit.org.uk

# Contents

# Introduction

The UK seeks to transition to net zero carbon emissions by 2050. Running parallel to this target is the need to provide warmer and cheaper-to-run homes to combat the rising cost of energy and alleviate fuel poverty. This transition hinges on the successful retrofit of millions of existing homes. As retrofit activity scales up to meet national targets, so too must the mechanisms for ensuring quality, safety, and performance. PAS 2035 provides a framework for domestic retrofit and has accordingly been adopted as a compliance standard for any government grant funded residential retrofit project.

However, PAS 2035 does not operate in isolation. By interacting with the UK's regulatory landscape, including the Building Regulation Approved Documents and various British Standards, a complex compliance ecosystem has been formed.

This quick guide explores:

- How PAS 2035:2023 operates alongside these other standards and regulations to deliver risk-managed, high-quality retrofit outcomes
- Whether a hierarchy of best practice emerges from the suite of documents and standards used for projects

## A quality product

Much is made about 'quality' in retrofit. This is more than just the quality of the finished product, which is an outcome synonymous with quality in any construction project. Quality is also about the processes used to get to the end product; the 'golden thread' that runs through the project. This will include:

- A retrofit assessment (RA) that records the condition of a dwelling's existing energy efficiency measures, any underlying issues or defects that would need addressing and occupant energy behaviours
- A retrofit design based on RA findings and what will work for both the property and occupants
- An installation process that moves forward with collaboration and buy-in from all stakeholders
- A handover process for the quality final product which consists of a clearly demonstrated and understood use
- An appropriate level of post completion monitoring of performance to evidence whether project requirements have been met

## PAS 2035 as a quality assurance tool

One of the major failings of earlier retrofit efforts has been the prevalence of unintended consequences: mould growth due to inadequate ventilation,

interstitial condensation from poorly specified or installed insulation, significant degradation of building elements, fuel poverty and detrimental effects generally on occupant health where predicted energy savings failed to materialise.

PAS 2035 was developed to anticipate and mitigate these risks. It introduces robust quality assurance by embedding a process based on home performance, occupant use and built-form constraints by introducing whole-dwelling assessment, including occupancy behaviour and pre-existing defects. It includes:

1. Ventilation checks to prevent altering the airtightness of homes without the provision of adequate airflow ('build tight, ventilate right')
2. Design review and sign-off by qualified professionals
3. Integration of PAS 2030 for qualified installers
4. Post-installation evaluation, including thermographic imaging and air tightness tests where applicable

It is because of the standard's cross-reference to and harnessing of existing standards that it provides a process that is comprehensive enough to assure quality detailing and outcomes (as shown in figure 1).

*Figure 1 shows a thermally broken step as part of external wall insulation in Havering, which is a detail that PAS 2035 processes seek to guarantee. Source: Baily Garner LLP*

# PAS 2035 and risk management

PAS 2035 was introduced to provide a framework for the delivery of retrofit as a process. PAS 2035 ensures a coordinated, evidence-based approach from concept to in-use, structured around the 'standard specific' roles of retrofit coordinator, retrofit designer, retrofit assessor and retrofit installer. At its core, PAS

2035 is a quality management tool. It introduces a methodology for managing risk based on property complexity, occupant energy behaviours, and the proposed measures. This evidence-based, quality assured and risk managed approach is not mirrored in the Approved Documents or British Standards, highlighting PAS 2035's unique role in managing unintended consequences, such as moisture risks, ventilation imbalances, and energy rebound effects (see figure 2 for a fully coordinated and compliant retrofit project).

*Figure 2: Full House Retrofit in Fenlands. Source: Baily Garner LLP*

While PAS 2035 refers to compliance with Building Regulations, including the reference of various Approved Documents, it also requires integration with relevant British Standards. For example, BS 5250:2021 on moisture control is essential for ensuring that energy efficiency upgrades do not create unintended condensation issues. In this way, PAS 2035 weaves together compliance documents into a coherent risk-led process, going beyond simple adherence to individual standards.

# A hierarchy of compliance?

## The relationship between documents

It is sometimes asked whether a hierarchy of best practice among PAS 2035, British Standards, and Approved Documents exists. On the surface, all three contribute to compliance, but their roles, legal standing, and intentions differ:

- Approved Documents (e.g., Part F for ventilation, Part L for energy efficiency) offer guidance on how to meet the legal requirements of the Building Regulations. They are not mandatory in themselves, but if followed, they provide a "deemed to satisfy" route to compliance. In essence, they

represent the statutory floor—the minimum standard for health, safety, durability, workmanship and performance.

- British Standards such as BS 5250 (moisture control), BS 7913 (conservation of historic buildings), and BS EN ISO 13790 (energy performance of buildings) are consensus-based technical benchmarks. While not legally binding, they are often referenced in both Approved Documents and professional practice. They provide a deeper technical lens into specific issues (think 'narrow and deep') and are increasingly relied upon in dispute resolution as evidence of good practice.
- PAS 2035 is a comprehensive retrofit quality assurance framework. It incorporates Building Regulations compliance, expects adherence to relevant British Standards, and demands holistic project governance. It is not just a document of technical standards but a process-led protocol that prescribes:
  - Roles (which include specific technical qualifications and competence crucial to effective delivery)
  - Responsibilities
  - Documentation requirements

Together, these prescriptive requitements ensure retrofit works are fit for purpose, sustainable, and safe. This is the case even when properties are non-traditional construction and require special consideration (see figure 3), or the measures being installed need specialist design team input (see figure 4).

*Figure 3: BISF Retrofit in Birmingham. Source: Baily Garner LLP*

*Figure 4: PV installation in Sutton, requires specialist design team input. Source: Baily Garner LLP*

## Hierarchical or complementary?

Rather than forming a strict hierarchy, these documents interact and complement one another, making use of existing practices where they are suitable and offering a process to implement them. Approved Documents set the baseline. British Standards elevate technical performance. PAS 2035 binds them together, ensuring they are applied coherently within a structured project methodology.

While not legally mandated outside government-funded schemes (like ECO, HUG, SHDF and Warmer Homes generally), PAS 2035 is increasingly seen as the gold standard for managing retrofit risks and ensuring quality. Therefore, they are not alternative routes to the same compliance. They represent different dimensions of the compliance ecosystem; statutory (Approved Documents), technical (British Standards), and procedural (PAS 2035).

# How the standards work together

**Compliance with Approved Document L – Conservation of Fuel and Power**
Most building works involving the thermal envelope of a building influence its ability to conserve fuel and power. This includes small scale changes like new windows, and larger interventions like external wall insulation or a home extension.

- Approved Document L sets the statutory energy performance targets for each fabric component of these works
- PAS 2035 requires that the building's potential energy performance is modelled prior to works, using either the Standard Assessment Procedure (SAP) or the PassivHaus Planning Package (PHPP)

The two documents therefore work towards improving a building's thermal performance, and its energy efficiency, in different by complementary ways. While Approved Document L sets minimum standards for improvement, PAS 2035 seeks to ensure that the performance is modelled in grounded and accurate data, and that any assumptions are validated post-installation.

**Integration with Approved Document F – Ventilation**
A common retrofit scenario is the installation of solid wall insulation in solid wall homes. In such situations, it is likely that the previously draughty building will become more airtight. If this happens with adequate ventilation being put in place, condensation and mould risks rise dramatically.

- Approved Document F requires specific air change rates but lacks project-specific coordination
- BS 5250 highlights moisture risks and mitigation strategies but does not mandate any process for ensuring they're followed
- PAS 2035 requires a ventilation assessment, pre- and post-retrofit, and demands mechanical ventilation installation where natural ventilation is insufficient, utilising Approved Document F as a means of compliance and BS 5250 as a risk management strategy

Here, PAS 2035 unlocks the practical application of Approved Document F and BS 5250, closing the gap between regulation and project delivery.

**Coordination with BS 7913 – Heritage Buildings**
Retrofitting listed or traditional buildings (sometimes referred to as 'difficult to treat') requires a tailored approach for each property on its own basis.

- Approved documents do not provide specifically for conservation/heritage buildings, often being either a permitted derogation from compliance, or not applicable
- BS 7913 outlines conservation principles, material choices, and techniques
- PAS 2035 mandates that when dealing with heritage assets, design and specification must align with BS 7913, and involves specifically qualified conservation specialists as part of the retrofit design team

This protects the building's historic fabric while improving performance, which neither PAS 2035 nor BS 7913 could achieve alone.

# Final thoughts

PAS 2035 is often treated as a bureaucratic burden. However, as shown above, it can also be seen as a transformative quality assurance tool that addresses the fundamental weaknesses in past retrofit efforts. This is because of its focus on managing risk and quality, which are now seen as an essential part of retrofit practice. Although PAS 2035 might add cost to a process, implementing PAS 2035 first time are often costs less than remediating the unintended consequences it avoids.

By coordinating the application of statutory guidance (Approved Documents), technical standards (British Standards), quality management processes and a pathway for project delivery, PAS 2035 acts as the glue binding retrofit projects together.

While there is no formal hierarchy of standards (PAS, Approved Documents and British Standards), due to each document type serving a distinct function, PAS 2035 can be seen as the umbrella methodology document. This is because it leverages the legal credibility of Approved Documents, the technical authority of British Standards, and overlays them with a process-driven, risk-managed retrofit framework. This provides a vehicle for the real-life delivery of retrofit projects which require careful planning and coordination, such as estate-wide heating installations (see figure 5).

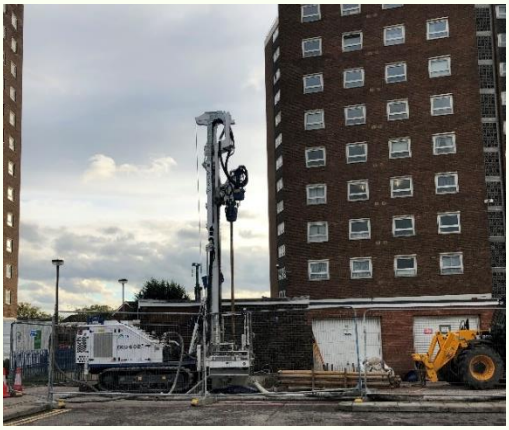

*Figure 5 shows ground source heat pump installation in Thurrock. Source: Baily Garner LLP*

For professionals tasked with delivering retrofit at scale, understanding how PAS 2035 interfaces with the broader regulatory environment is essential to the success of any retrofit project.