
PEPA Retrofit Assessor Scheme Requirements

2025 Edition

Document Control

Change History

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Name	Role	Organisations	Date	Version
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-	Not issued.
I	For information only – no action required.
R	For review – comments to be directed to the Project Manager.
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Property Energy Professional Association (PEPA) Retrofit Assessor Scheme Requirements

This document outlines the Scheme Requirements for EPBR Accreditation Schemes to extend their services to approve Retrofit Assessors to meet the requirements of PAS 2035.

This document has been written by the management of PEPA (the Scheme Owner) for the use of all EPBR Accreditation Bodies (The Scheme Operators) whether or not that EPBR Accreditation Body is a member of PEPA.

1) Ownership

This document is managed on behalf of approved Certification Schemes by the PEPA Retrofit Assessor Scheme Requirements Working Groups, in line with the Terms of Reference (ToR01) document. Key to this document are the following terms.

The working group (WG) will:

- review the Scheme Requirements document and consider any updates that may be required, and
- be made up of all Certification Schemes and TrustMark representatives and will have a rotating nominated chair.

2) Oversight

The working group will provide management oversight for the Scheme Requirements document. TrustMark will be stakeholders in the overseeing of the document.

Trustmark is the 'key' stakeholder for the Scheme Requirements document and have the 'Golden Vote'. This means that Trustmark can stop any proposed amendment they deem inappropriate or unacceptable.

As key stakeholders Trustmark are invited to all working group meetings and will be party to all correspondence. All proposed changes to the Scheme Requirements will be clearly flagged and highlighted to TrustMark. The working group will apply version control and effective go live dates to the document; this is to ensure that all stakeholders are always aware of the latest version

3) Definitions

3.1 A **Retrofit Assessment** is the process of assessing the characteristics of an existing dwelling, including its local context, fabric, form, services, condition, heritage significance, ventilation, energy efficiency and occupancy, in order to provide information for the preparation of a retrofit design.

3.2 A **Retrofit Assessor** is a person qualified and competent to carry out a retrofit assessment; see A.1 of PAS 2035 (2023) for details on the qualifications needed for this role.

3.3 A **Retrofit Assessment Report** is the written report that communicates the evidence of the *Retrofit Assessor* to the *Retrofit Coordinator*. It can be a single report or a number of

separate reports, but it must include all assessment areas as required by Section 7 of PAS 2035.

3.4 An **Energy Performance Report (EPR)**, also known as an Energy Report is a scheme created and owned document that is generated using an RdSAP or SAP engine approved by BRE for the production of Energy Performance Certificates ([see approval list](#)), using the most up to date version of the methodology.

As a minimum, the EPR must contain the following.

- Property Address
- Report Reference
- Assessor details
- Scheme details
- Assessment and lodgement/submission dates
- Energy Efficiency Rating (SAP rating)
- Recommendations (as per Appendix T)
- A lodged/submitted EPR should also include a related XML, created using the approved methodology xml schema to ensure data interoperability

When an EPR is used within a Retrofit Assessment, it must be produced by a DEA who is also a Retrofit Assessor. The DEA and Retrofit Assessor must be the same person and registered under the same scheme provider. Any exemptions to this requirement can only be overridden by the scheme.

An EPR is not an EPC and is not lodged via the government EPC register; instead, it must be submitted/lodged with the Retrofit Assessors Scheme. EPRs can have many uses, but with PAS 2035 Retrofit Assessment, they are typically designed to form part of the Retrofit Assessment Report and be submitted to the Retrofit Coordinator.

3.6 **Lodged (also known as Submitted)** means that the report is finalised, any watermarking removed, and the data cannot be edited, without first copying the report and creating a new version of the report, with a different reference number.

3.7 A **Traditional Building** is defined as a building that has solid brick or stone external walls, or pre-1919 timber-framed external walls with infill

3.8 **Stock photography** is the use of images that have been produced by a) another party or b) at a different property to the property being assessed and are being passed off as having been taken at the property being assessed.

3.9 **Photography metadata** is a set of data describing and providing information about rights and administration of an image. It allows information to be transported with an image file, in a way that can be understood by other software and human users.

3.10 A **geotagged photograph** is a photograph that includes location information within the file metadata.

All other definitions from the EPBR Scheme Operating Rules and PAS 2035 apply.

4) Authority to operate a Retrofit Assessor Scheme

All Schemes will be a Accreditation Scheme approved by MHCLG for the accreditation of domestic energy assessors.

Accreditation Schemes are required to comply with MHCLG Scheme Operating Rules and are independently audited it is considered that there are adequate safeguards already in place to be assured that Accreditation Schemes have sufficient controls for Financial and Operational stability. Other aspects of the scheme management system will need to be extended;

4.1) Management systems

To be extended to include the requirements of this Scheme Document

4.2) Insurance

To be extended to cover the activities of a Retrofit Assessor

4.3) Record retention

Schemes should only retain data for as long as is necessary. Schemes must have their own data protection and retention policies whereby they set these timescales.

To ensure that records generated to demonstrate compliance with the requirements of this scheme document, records are retained for as long as the Retrofit Assessor remains a member of the scheme, plus 1 year.

4.4) Assessing member suitability

Accreditation Schemes will ensure that procedures are in place to determine whether a person is suitable, ('fit and proper') to become a member.

To become a member and maintain membership, the Retrofit Assessor must be able to demonstrate the competence to meet the requirements of Appendix 2 of this document.

Where an assessed building is considered to be a Traditional Building, the assessor must be able to prove competency, in line with the requirements of BS 7913 Significance Assessment and the qualifications noted in Appendix A of PAS 2035 (2023).

4.5) Code of conduct

The existing Code of Conduct must be extended to include the activities of the Retrofit Assessor and meet the minimum requirements specified by TrustMark.

5) Surveillance

5.1 Retrofit Assessment Report (RAR) Audit Process

General Requirements

- TrustMark Technical Quality Assurance results will be fed into the Schemes' risk model & vice versa
- Scheme Auditors must be competent & suitably qualified Retrofit Assessors
- Schemes will ensure that where a Retrofit Assessor is fulfilling multiple roles on a project, or where a conflict of interest exists, this has been declared to the client as per PAS 2035 6.1.5 and is resolved appropriately.

What is being audited?

The Retrofit Assessment Report will be audited as per PAS 2035 – Section 7.

Audit Categories:

This explains the different types of audit categories that will be used by Accreditation Schemes. Each strand will have an appropriate mix of audit categories to ensure that the volume of audits is used most effectively to improve the quality of Retrofit Assessments.

Periodic Random audits - These audits are to ensure that all members are audited over a defined time period and Retrofit Assessments are randomly selected – this will help to maintain the overall quality of Retrofit Assessments, ensure members are audited at an appropriate frequency and highlight new issues that may lead to the introduction of new 'smart' audits as a result.

Follow on Audits – These audits are a consequence of non-compliance of another audit type.

Accreditation Schemes will request a specific future lodgement for audit to ensure that the member has understood and is applying the knowledge/advice from the feedback provided.

New Entrant – a new entrant is a member who has qualified and is joining a scheme for the first time (this is not an experienced member switching schemes). The scheme will audit this member's first lodged Retrofit Assessment.

Complaint Audits - Audits that are undertaken due to a complaint from a stakeholder

Risk Based Audits - based on pre-defined set of criteria.

5.2 Audit calling process

Schemes will audit a minimum of 2% of Retrofit Assessment Reports (RARs) per calendar year. Certification Schemes will monitor the percentage audited to ensure that they will succeed in meeting the minimum level, using their discretion during holiday periods and unforeseen lodgement activity.

When a member lodges at least once per year, a member shall be subject to a minimum of 1 audit per year and a minimum of 1% of all reports lodged each calendar year. The remaining amount can be made up of the following audit types

- Random audits
- Risk Based audits
- Follow on audits. Please refer to Audit Non-compliance section for more details.

5.3 Risk Based Auditing

Schemes will be implementing Risk Based audits. These audits will be based on a set of rules will be created by the Quality Assurance working group based upon random audit non trends, industry feedback and other key areas of focus. The risk-based rules will be maintained by the group via regular meetings and periodically updated.

The rules will not be published publicly but all schemes will have access to the current, approved set of rules.

5.4 Audit Evidence Requirements

All Retrofit Assessments must be completed via a site visit. The only exceptions are as per those detailed in the Trustmark **RdSAP Data Production for Retrofit Projects document**

<https://cms.trustmark.org.uk/media/xpkpd0df/rdsap-data-production-for-retrofit-projects-v11.pdf>

Members will provide sufficient evidence to their Accreditation Scheme to prove that the Retrofit Assessment lodged is correct.

The evidence presented must be of sufficient clarity to enable the Accreditation Scheme to replicate the Retrofit Assessment in order to judge within all reasonableness that it is correct.

All evidence provided must be unique to the property visited and be reflective of the nominated date.

Acceptable evidence should support the data entry, and the assumptions made during the assessment process.

The assessment evidence pack should include the following. Please note this is not an exhaustive list and all appropriate evidence should be supplied.

- Notes made on site that relate to the report
- Photographs that evidence data points and commentary
- Site Plan with suitable annotations (ideally a digital site plan)

- Documentary evidence (e.g. for any non-visible elements)

Members should always ensure that they have access to evidence collected, even if stored in previous employer's files.

Accreditation Schemes will provide their members with the appropriate guidance on what they consider to be appropriate evidence.

5.5 Stock Photography

The use of Stock photography should be checked on each Retrofit Assessment.

Stock photography checks should include as a minimum;

- 1) The photos are unique and are taken at the time of the assessment and are representative of the property being assessed
- 2) They are time, date and geotagged – this can be on the image, or within the original photograph metadata
- 3) The metadata itself is correct, unedited and consistent with the photography provided.

The use of stock photography is not permitted and may result in disciplinary action being taken against the assessor.

Where Accreditation Schemes have doubts about the photographs provided by a particular member, they shall require the member to provide further information and in future require a greater degree of evidence from the member or undertake additional checks of the member's work.

5.6 Audit Results

The audit is effectively split into two key parts.

- Energy Performance Report (EPR)
- The condition, ventilation risk assessment and historical significance aspects

5.6.1 Energy Performance Report auditing process

Schemes need to verify that the EPR used in the Assessment was produced for a Retrofit project and not for another transaction type or purpose

1. The error shall be the sum of the absolute errors associated with each data entry field of SAP (to avoid the instance where self-cancelling errors lead to an acceptable SAP score).
2. The procedure for the auditor is:-
 - a. Work through the member's assessment and their evidence.
 - b. At each data field where you believe there is a need to change the data, make the change and recalculate the SAP Rating.
 - c. Note the difference in the SAP points result as a positive value whether the difference is negative or positive.
 - d. Changes to recommendations and/or description of the EPR will also be noted.
 - e. Reset the field in question to the members' original value.
 - f. Move to the next RdSAP entry field and repeat testing from step b) above.

- g. Carry on until all RdSAP entry fields have been checked.
- h. Add all the differences found to arrive at the cumulative error.
- i. Enter all corrected data fields and recalculate the EPR.
- j. If this cumulative error exceeds 5 SAP points, or includes changes to the recommendations and/or description of the EPR in a manner which brings into question the accuracy of the rating, the audit shall be marked as non-compliant, and the report shall be marked as defective and replaced. Schemes shall not make use of truncation within their calculation processes, e.g. 4.6 cannot become 4, where the software provides a more accurate outcome and the final rounding shall be such that an error between 4.5 and 5.4 is rounded to 5 SAP points and therefore a 'Pass'; whereas an error of greater than 5.4 is a 'non-compliant'.

5.6.2 Condition, Ventilation Risk Assessment and Historical Significance aspects

These sections/parts of the Retrofit Assessment Report are often subjective and require the assessor to apply judgement to what they see on site and what they enter into the report. The auditor needs to be able to

The RAR audit will result in a Pass or a Non-compliant outcome. The Auditor shall total the number of non-compliances and their type to determine the audit result. An audit shall be marked as non-compliant where 5 or more single **minor** non-compliance and/or any single **major** non-compliance have been identified.

Non-compliances are categorised as follows:

- *Minor Non-compliance:* No significant impact on the customer or other stakeholders associated with the non-compliance. The scheme will inform the member of the nature of the shortcoming and require evidence of action taken to rectify the non-compliance.
- *Major non-compliance:* Compelling evidence that the member has failed to meet the Framework, in a way that has had a major impact on the customer or other stakeholders. The member shall be suspended until the non-compliance is rectified. Major non-compliance shall be counted as a risk trigger against the member.

The scheme will consider the following factors when reviewing the impact of the non-compliance:

- The level of harm which flowed from the non-compliance
- Whether the non-compliance has occurred in other cases
- Whether other bodies have imposed sanctions in relation to the non-compliance
- Whether the member has accepted responsibility for the non-compliance Whether the member made a financial benefit from the non-compliance, or intended to make such a gain for themselves or a commercial partner

5.7 Audit outcomes

There are four audit outcomes once the audit process has been concluded. Audit outcomes must be clearly communicated to the assessor in the feedback provided.

Pass – the audit passes with no negative feedback. The auditor should provide supportive commentary on good practice to encourage the ongoing good performance.

Pass with comments – the audit passes, however feedback is given, and this should be read and understood by the assessor. The report does not need to be replaced, but errors noted should not be replicated on future assessments.

Technical Non-Compliance – The audit doesn't meet the required standard on a technical basis. There will be one or more errors in the report which cause or contribute to a non-compliance. The report or defective part of the report must be replaced by the assessor in line with the below replacement timescales. All errors must be acknowledged by the assessor and not replicated in future reports.

Evidence Non-Compliance – The audit doesn't meet the required standard on the basis that the evidence is not supplied, or not sufficient in quality to allow the audit to be completed. This may cover all or part of the report.

- Where evidence is missing/poor quality but available, then this can be supplied by the assessor following feedback and the audit can be reviewed. This evidence must then be passed onto the Coordinator following audit completion.
- Where evidence is missing and cannot be supplied, then the audit remains a failure.
- Where evidence is not sufficient in quality and cannot be supplemented by quality evidence then the audit remains as being non-compliant.

All evidence errors must be acknowledged by the assessor and not replicated in future reports.

5.8 Higher Lodger Analysis

Where Schemes assess that a member is lodging an unusually high number of reports in any calendar month Schemes shall undertake additional checks that provide assurance that the member has indeed visited the properties.

- a) The trigger point for higher lodger analysis is 120 Energy Reports in a calendar month
- b) Schemes shall be able to demonstrate that their approach and practice here are reasonable e.g. a way of sampling whether a member is visiting dwellings would be to choose 3 properties visited on the same day, and undertake checks that the photos are all dated and different.
- c) Variables that schemes must consider in this approach are
 - the types of property involved and whether there is mitigation for unusual volume
 - the distances between properties in a given day
 - geographical features that may make routes impossible within a given day

N.B. High lodgement checks are not to be included in a schemes 2% audit requirement.

5.9 Timescales

Timescales for submission

- All evidence must be submitted to the scheme within 5 working days of audit notification request.

Timescales for audit completion

- All submitted audits must be completed within a timely fashion and as soon as possible.
- All completed audit feedback must be sent within 2 working days of audit completion.

Timescales for replacement of defective Retrofit Assessment Report or element of Retrofit Assessment Report

- The assessor must replace and confirm the replacement of the defective RAR or element within 5 working days and confirm that the Retrofit Coordinator has been informed in writing.
- Where the assessor fails to replace the RAR or/and element of the RAR, the scheme shall inform the coordinator, so the impacts of these errors can be assessed and correct action taken.

5.10 Continuing Professional Development (CPD) Surveillance

Retrofit Assessors must undertake at least 10 hours of CPD per annum to ensure that their knowledge remains current. This must be made up of a minimum of 5 hours of certificated attendance CPD per year.

Accreditation Schemes will sample a minimum of 5% of members' CPD records each year to ensure the CPD obligations have been met.

6) Disciplinary action

Schemes will have appropriate disciplinary procedures in place for any activity that does not meet the requirements of being a Retrofit Assessor include the likes of Audit non-compliance, CPD non-compliance and any breach of the Code of Conduct.

6.1 Audit Non-compliance

- Where any audit fails to meet the quality standards Schemes will take appropriate action in which may include
 - The Scheme will agree with the Member suitable corrective actions to prevent re-occurrence
 - Accreditation Schemes will request one specific future lodgement for audit to ensure that the member has understood and is applying the knowledge/advice from the feedback provided. This is complete in the form of a follow-on audit.
 - The Scheme will consider the likelihood that this is a systemic problem that may impact other submission by that assessor if there is a belief that the member is likely to repeat the error then the member should be suspended until corrective action has been taken
 - The Scheme will liaise with the member to consider the implications on other RARs issued and
 - The Scheme will identify defective RARs and it is the responsibility of the Retrofit Assessor to take appropriate action for these.

- The scheme will consider preventative action that it can take, in isolation or through the PAS2035 working group, to prevent re-occurrence with other retrofit assessors

6.2 Code of Conduct

Schemes will respond to breaches of the Code of Conduct by the member in a proportionate way.

Where there is compelling evidence that a member has not complied with the Code of Conduct and there is a major impact on the stakeholder(s), the member will be suspended pending a disciplinary hearing.

Where a member's actions are considered a 'major transgression', the Scheme will immediately suspend the member, pending an investigation which should be carried out in a timely manner.

Repeated instances of less significant breaches may, in combination, be considered a major transgression.

6.3 Bringing the Retrofit of Buildings Industry into disrepute

Where a Scheme believe and have strong evidence that the member is bringing the retrofit of buildings industry into disrepute, the member shall be suspended across the industry immediately pending further investigations and if the claims are proven, revoke the membership.

6.4 Fraud

If the error indicates fraudulent practices, the member will be suspended across the industry immediately pending a full investigation.

Where a further investigation confirms that fraudulent activity may have taken place the Scheme must report the issue to the relevant authorities. If the retrofit assessor is alleged to have acted in a way that is in breach of the criminal law, then it is a matter for the criminal justice system. Schemes will report complaints, or other information received, that involve apparent criminal activity to the police.

6.5 Notification to TrustMark

Schemes shall keep TrustMark informed of any suspected fraudulent or dishonest practice on the part of a member or members. This should be done in line with the requirements set by the latest version of the TrustMark Framework Operating Requirements.

7) Supplementary conditions

The Scheme will impose appropriate controls to reduce the likelihood of any re-occurrence and to re-establish confidence in the activities of the assessor. Schemes will ensure that any disciplinary measures are proportionate to the breach and are implemented in a timely manner.

The Scheme may take whatever action it deems necessary to enforce the scheme rules. Members who do not comply may be prevented from operating on a temporary or permanent basis.

Where a member fails to adhere to the requirements set out in this document then;

Schemes have the ability to take necessary remedial action to ensure the risk of repetition of the offense is mitigated.

Example suitable remedial action could include (but not limited to);

- Corrective action to mitigate the risk
- Further surveillance such as;
 - Follow on auditing
 - Professional interview
 - Witnessed assessment
- Further training or retraining

Failure or repeated failure by the member to meet this remedial action may be prevented from operating on a temporary or permanent basis;

- Scheme only temporary suspension
- Industry wide temporary suspension
- Scheme only permanent revocation of membership
- Industry wide permanent revocation of membership

Temporary suspension can be applied in appropriate circumstances, this can be scheme only, or industry wide. The duration of any suspension and the criteria for reinstatement shall be determined by Schemes based on their assessment of the nature of the error after a thorough investigation. A member will normally be suspended until they complete the activities identified by the Scheme.

Permanent removal (revocation) of membership can be applied in appropriate circumstances, this can be scheme only, or industry wide.

7.1 Cross strand actions

Typically, a Retrofit Assessor will also hold an energy assessment qualification as a core part of their competency; usually Domestic Energy Assessor (DEA).

Where an assessor loses their 'active' status for this core part, then their Retrofit Assessor status should change in line with this. For example, a Retrofit Assessor becomes suspended or struck off if they become suspended or struck off as a DEA.

When the assessor has resolved the issue that directly led to the DEA scheme suspension, then the Retrofit Assessor membership suspension status can also be lifted and reverted back to an 'active' status.

Equally, when a Retrofit Assessor ceases their DEA membership, they will also cease their membership as a Retrofit Assessor with the scheme.

However, disciplinary action on the Retrofit Assessor's membership may not always be reflected on the DEA strand. An example would be where the Retrofit Assessor hasn't completed enough dedicated Retrofit Assessment CPD but has adhered to the requirements for their DEA membership.

Irrespective, where there is code of conduct transgressions that apply equally any membership held, any action and any status change will be applied to all memberships held.

7.2 Cross scheme Actions – existing members

Where an assessor's membership status changes, they must update the TrustMark portal immediately. Schemes must have mechanisms in place to update these changes in status in circumstances where that member also holds similar membership with them.

Schemes must have a mechanism to communicate with all other schemes the reason for the status change.

7.3 Cross scheme Actions – new members

Schemes will have mechanisms in place to check the status of membership held with other schemes at the point of application. Schemes must ensure that prospective members disclose any open disciplinary action or any circumstance where they have had previous memberships revoked or withdrawn.

7.4 Complaints

The scheme shall extend their complaints process to include complaints about the activities of a Retrofit Assessor.

Schemes must give consumers access to an Alternative Dispute Resolution Service, as an alternative to the courts, in cases where a complaint cannot be resolved to the satisfaction of both parties.

7.5 Appeals

The scheme shall extend their appeals process to include complaints about or by Retrofit Assessors.

8) Support

Schemes will provide general information to the general public and stakeholders concerning Retrofit Assessment reports issued by members.

Schemes will provide a helpdesk for members.

Appendix 1 - Assessment Process

Where the assessor or coordinator are unsure of the risk pathway, the Assessor should proceed as a Path B assessment (as per Section 8.4 of PAS 2035). This should be considered the default pathway.

The assessment shall include:

- an appraisal of the dwelling's heritage, architectural features, structure, construction, and condition, in sufficient detail to establish the suitability of the dwelling for improvement.
- identification of the installed building services (ventilation, heating, hot water and lighting systems and their controls), the locations of the equipment, the areas served and confirmation that the systems are working;
- identification of any constraints imposed by the local planning authority (including requirements for planning permission, Listed as of Special Architectural, Protected or Historic Interest, Conservation Area constraints, Tree Preservation orders, etc.);
- identification of any energy efficiency measures already installed or proposed.
- an appraisal of the dwelling's construction in sufficient detail to establish the thermal transmittances (U values), and moisture properties of the main building elements (exposed floors, walls and roofs), and the suitability of the dwelling for improvement.
- a measured survey to establish the overall dimensions of the dwelling's heat loss envelope (including any basements and attics), the dimensions of all building elements (exposed floors, external walls, roofs, etc) and the dimensions of all window and door openings;
- identification of constraints imposed by the site, e.g. elevation and exposure (to sun, wind and rain, major roads and industrial activity); access, party walls, rights of light, consideration of adjoining properties, etc.;
- identification of the location and severity of any existing construction defects, structural defects or leaks that relate to the energy efficiency recommendations being made;
- an appraisal of occupancy, including the number of occupants and any special considerations such as the presence of vulnerable persons, e.g. children or elderly people, or those with disabilities;
- an estimate of annual fuel use, fuel costs and carbon dioxide emissions, under standard or actual occupancy (as appropriate), made from fuel bills or by using a recognised methodology such as SAP or RdSAP.
- an assessment of the existing ventilation arrangements, including:
 - identification of the location and severity of any condensation and/or mould growth in the dwelling;
 - any intermittent extract ventilation fans or passive stack ventilators and where they are located;
 - any background ventilators (air inlets or 'trickle ventilators'), and where they are located;

- any other ventilation system and where it is located, including: single-room heat recovery ventilators (srHRVs), positive input ventilation (PIV), whole-house mechanical extract ventilation (centralised cMEV or decentralised dMEV), and mechanical ventilation with heat recovery (MVHR);
- Whether the identified ventilation systems are functional.

Where necessary the Retrofit Assessor may also recommend the commissioning of;

- a test of the air permeability of the building envelope, using an approved method;
- a structural engineer's report on the structural condition of the building and its suitability for any proposed improvement measures;
- other relevant in-situ tests (e.g. pull-out tests to establish suitability for proposed fixings).

Reporting the assessment

See Appendix 4 for Requirements for the Retrofit Assessment Report

Appendix 2 – Competence Requirements

A Retrofit Assessor must be an accredited Domestic Energy Assessor and have received at least twenty hours of additional training relevant to the Retrofit Assessor role; at least twelve hours of which must be classroom based.

Module	Title	Scope
Introduction		
	PAS2035	Overview of PAS2035, the other roles involved, link to PAS2030
	Trust Mark	Overview, including the TrustMark Portal
	Energy Efficiency Advice	Covered by all roles in PAS2035 – see separate Annexe for more detail for Assessors
	The benefits of deep retrofit	What is deep retrofit and why whole house assessments are required.
Building Physics		
	U-values	Understanding thermal transmittances (<i>U</i> values) of building elements (i.e. floors, walls and roofs, etc.) from data on the thermal conductivities (λ values) of building materials. What makes good U values, and what makes poor U values
	Condensation	Understanding the risk of interstitial condensation within the construction of a building element, using data on internal and external temperature and humidity and on material moisture contents and vapour pressures
	Linear Thermal Bridging	Understanding linear thermal transmittances (ψ values) and critical temperature factors (f_{Rsi}) at the corners, junctions and edges of building envelopes that are identified as “thermal bridges”, i.e. places where the envelope of insulation is either thinner or discontinuous;
	Heat Gains	An understanding of overall heat gains in a dwelling from occupants, cooking, hot water, lighting, the use of appliances and solar gains through glazed openings
	Ventilation	Understanding of the whole-dwelling ventilation rate required to maintain good IAQ and minimize the risk of condensation and mould growth
	Mould	Understanding of the risk of surface condensation and mould growth using temperature factors and data on internal and external temperature and relative humidity to calculate vapour pressure differentials
	Moisture	Understanding dynamic moisture equilibrium through a building element

	Solar gain	Understanding of internal daylight levels from data about the sizes, locations and orientations of windows, and any local shading, and therefore requirements for artificial lighting.
	SAP and PHPP overview	Familiarity with SAP and PHPP principals and models, and differences to RdSAP
Occupancy Assessment		
	Occupancy Assessment process	An appraisal of occupancy, including the number of occupants and any special considerations such as the presence of vulnerable persons, e.g. children or elderly people or those with disabilities
		In-depth knowledge of the OA Methodology, with ability to advise consumer's around inputs and calculation results
		In-depth knowledge on recommendations and all results from Occupancy Assessment
		Be able to deliver the necessary advice on how occupancy variables affect energy use and savings from installing measures
		Be able to explain 'in use factors' and how they affect measure savings.
		Be able to explain the impact of fuel costs on the running costs and savings of measures
Condition Assessment		
	Heritage buildings	Be able to make an appraisal of the dwelling's heritage, architectural features, structure, construction and condition and the installed building services (ventilation, heating, hot water and lighting) in sufficient detail to establish the suitability of the dwelling for improvement;
	Building Structure	Be able to identify the location and severity of any existing construction defects or structural defects or leaks.
	U - Values	Be able to make an appraisal of the dwelling's construction in sufficient detail to establish the thermal transmittances (<i>U</i> values) and moisture properties of the main building elements (exposed floors, walls and roofs) and the suitability of the dwelling for improvement
	Moisture, mould and Ventilation, condensation, trickle vents etc.	Be able to conduct an assessment of the existing ventilation, including: identification of the location and severity of any condensation and/or mould growth in the dwelling; any intermittent extract ventilation fans or passive stack ventilators and where they are located; any background ventilators (air inlets or "trickle ventilators"), and where they are located; any other ventilation system and where it is located, including single-room heat recovery ventilators (srHRVs), positive input

		ventilation (PIV), whole-house mechanical extract ventilation (centralized cMEV or decentralized dMEV), and mechanical ventilation with heat recovery (MVHR); whether the identified ventilation systems are functional.
	Dimensions above RdSAP	Be able to complete a measured survey to establish the overall dimensions of the dwelling's heat loss envelope (including any basements and attics), the dimensions of all building elements (exposed floors, external walls, roofs, etc) and the dimensions of all window and door openings
	Planning constraints	Be able to identify any constraints imposed by the local planning authority (including requirements for planning permission, Listing as of Special Architectural or Historic Interest, Conservation Area constraints, Tree Preservation orders, etc.);
	Site constraints	Be able to identify any constraints imposed by the site, e.g. elevation and exposure (to sun, wind and rain, major roads and industrial activity) access, party walls, rights of light, consideration of adjoining properties, etc.;
	Structural defects	Be able to identify construction defects or structural defects or leaks, or condensation and/or mould growth in any dwelling(s), including identification of such defects in two categories: <ul style="list-style-type: none"> • defects that need to be repaired before any retrofit work can proceed; and • defects whose repair is recommended but not an essential prerequisite to retrofit. Relative to the measures to be insulated
	Identify existing energy efficiency measure(s)	As per RdSAP assessment
	Estimating energy use and cost	The data collected shall be sufficient for an estimate of annual fuel use, fuel costs and carbon dioxide emissions, under standard or actual occupancy (as appropriate) to be made by the Retrofit Assessor, Retrofit Coordinator or Retrofit Designer, using a recognized domestic energy model such as the Reduced Data Standard Assessment Procedure (RdSAP), the Standard Assessment Procedure (SAP) or the Passive House Planning Package (PHPP).
	Condition Report	Be able to create a condition report that gives all required information to the Retrofit Co-ordinator

Appendix 3 – Provision of Advice

A Retrofit Assessor must be able to provide suitable advice, as detailed in the below table.

Element	Scope
Technology	
Fabric (Thermal) Insulation	Understand nature of different parts of the property which can be thermal improved such as walls, roofs, floors; and the generic techniques to achieve better performance
Heating & DHW	Understand current heat and hot water provision and potential alternative retrofit solutions and the impact on energy, warmth, cost and emissions.
Micro Generation	Understanding of current microgeneration solutions available that can be modelled in the methodologies
Household electrical appliances	General understanding of typical household appliances and their impact on energy use
Monitoring consumption	General understanding of how occupants can monitor energy usage and benefits of doing so
Retrofit	
Choice of products/tech	General advice around energy retrofit measures, based on standard products as defined in RdSAP and OA outputs. (Independent of manufacturers)
Use of equipment	General advice around use of energy efficient products
Cost and savings of improvements	Using the outputs of RdSAP and OA software advising consumers on what costs and savings are predicted
Finance	General knowledge of any grants and finance and where to signpost consumers towards for independent advice
Explaining the customer journey through the PAS framework	Understanding of the other roles within PAS framework and the customer journey.
Behavioural Issues	
Use of heating, DHW and controls	How to use controls effectively to manage energy efficiency of the home
Use of electrical appliances	How to effectively use and manage energy efficiency of the appliances around the home
Use of monitoring equipment	How and why to monitor use of energy in the home, including current bills and smart meter technology etc.
Using Passive Solar and retaining heat	General understanding of passive solar gains in the home and tips surrounding retaining heat in homes
On site renewables	Making the most of any on site renewable technologies
Consumer and Services	
Consumer rights – energy supply, energy efficiency and Micro Generation	General understanding of consumer rights with regards to supply of energy, the journey through the PAS, and consumer rights under TrustMark and any additional rights in regards to Microgen
Regulations, rights in rental sector	Understanding of all current regulations on landlords and tenants e.g. MEES/PRS, in order to help these consumers, make informed choices around the energy efficiency of the home
Choice of suppliers and tariffs (& switching)	General understanding of consumer bills, understanding tariffs and the process of switching supplier(s)

Awareness of Grants and Funding for energy efficiency measures	General understanding and awareness of current grants, subsidies and polices in energy efficiency such as FiTS
Understanding energy bills and payment options	Good understanding of reading energy bills and different payment options, with advice around alternative options
Understanding energy usage and costs	Linking the bills to total energy usage and costs within the property including use of heating, hot water, lighting and appliances
Fuel Debt	Understanding of what fuel dept is and how to manage it
Services for vulnerable households	Understanding energy efficiency implications for vulnerable households
Details of impartial advice	Ability to point consumers towards further independent energy advice (retrofit advisors)
Fuel related benefits/grant	Knowledge of any current fuel related benefits of grants available
Redress for energy supply & retrofit	General understanding of redress for energy supply and also for all the component parts of the TrustMark/EHC process
RdSAP & SAP and Occupancy Assessments	
RdSAP Appreciation	In-depth knowledge of the RdSAP Methodology, with ability to advice consumer's around inputs and calculation results
RdSAP Outputs	In-depth knowledge on recommendations and all results from RdSAP
OA Appreciation	In-depth knowledge of the OA Methodology, with ability to advice consumer's around inputs and calculation results
OA outputs	In-depth knowledge on recommendations and all results from Occupancy Assessment
SAP Appreciation	Understanding of SAP methodology in order to deal with any queries relating to the methodology or outputs
Related Health Issues	
Health and comfort in relation to the indoor environment	General understanding of health and comfort in the home, adequate temperatures, appropriate ventilation etc (build tight, ventilate right)
Ventilation	Good understanding of ventilation issues and requirements to allow for a healthy home
Avoiding condensation damp and mould growth	Good understanding of techniques for avoiding condensation, damp and mould growth in homes
Affordability of energy services	General understanding of cost and affordability of potential energy efficiency measures

Appendix 4 - Requirements for Retrofit Assessment Report

Retrofit Assessment

Only competent, accredited Retrofit Assessors can produce Retrofit Assessment Reports. The report must be lodged/submitted and provided to the Retrofit Coordinator for the project. The Retrofit Assessment Report can be a single report made up of several sections or a series of separate documents. Irrespective, the following data and documents should be included in the Retrofit Assessment Report.

Data:

- Details of Retrofit Assessor
- Assessor reference ID
- Property Address
- Date of Assessment
- Date of Lodgement/Submission

Document(s)

The following documents will be included:

- Energy Performance Report (EPR) providing a SAP score, estimated costs and CO2 emissions, recommendations for improvement and the levels of savings possible
- Energy Data Inputs – the data that was collected and assumed in the production of the EPR. Typically this would be RdSAP Data in the form of an xml
- Condition Report covering the physical state of the dwelling at the time of the assessment related to features that may inhibit the performance of any future energy efficiency measures, typically containing photographs and a written description.
- Historical Significance Assessments required by PAS 2035, e.g. if the dwelling is of traditional construction ensure that a simplified BS 7913 significance assessment is included
- Ventilation Risk Assessment – where required by PAS 2035, giving an appraisal of the current ventilation present in the property, and whether it is sufficient or insufficient.
- Advice - where advice is given to persons, the Retrofit Assessor needs to document:
 - Who was the advice given to and when
 - What advice was given e.g. fabric first approach of PAS2035, how to use boiler controls effectively etc.

Please note the documents:

- do not have to be singular, they can be combined, as long as the information above is covered
- are likely to be PDFs or similar