North West Energy Agency

SPECIFICATION FOR

Establishment of a Multiparty Framework for the provision of Domestic

Energy Efficiency Retrofitting services in County Donegal

Contract No. Framework 2026

September 2026

CONTENTS

North West Energy Agency

CONTENTS ii

1. GENERAL 6

1.1 Compliance with Regulations 6

1.2 Safety Statement 6

1.3 Equipment to be installed in each Dwelling 7

2. HEAT PUMP SPLIT SYSTEM 8

2.1.1 Outdoor Unit 8

2.1.2 General 8

2.1.3 Emitters 9

2.1.4 Controls 9

2.1.5 Contractor Requirements 9

2.1.6 Indoor Unit 9

2.1.7 Commissioning & Service Contract 10

2.2 Plumbing 11

2.2.1 Radiators 11

2.2.2 Domestic Hot Water 12

2.2.3 Circulating Pump 12

2.2.4 Expansion Vessel 13

2.2.5 Controls 13

2.2.6 Fill Tanks 13

2.2.7 Civil Works Associated with Properties 13

2.2.8 Existing stock cock impacted by works. 14

2.2.9 Trunking/Boxing. 14
2.2.10 LED Lighting 14
2.2.14 Commissioning & Training 14
3. INSULATION 15
3.1 External Wall Insulation 15
3.2 Cavity Wall Insulation 16
3.3 Dry-Lining 16
3.4 Attic Insulation 16
3.5 Pitched Roof Internal Insulation (extensions) 17
3.5.1 Proprietary Attic Hatch 17
3.5.2 Ventilation 17
3.5.3 Slate Ventilation 18
3.5.4 Cold Water Storage Tanks 18
3.5.5 Insulation for water tanks 18
3.5.6 Radon Monitors 19
4. WINDOWS AND DOOR INSTALLATION 19
4.1.1 Front and Rear Doors 19
4.1.2 Alu-clad windows and doors 20
4.1.3 Window and Door Installation 20
5. FIREPLACES/RANGES/STOVES 22
5.1.1 Removal of Chimneys 22
5.1.2 Stoves /Ranges (including Back Boilers) 23
5.1.3 Fireplaces for Disposal (including Back Boilers) 23
5.1.4 Hit & Miss vent 23
6. MECHANICAL VENTILATION 24
6.1 Mechanical Ventilation 24

6.1.1 Two stories 25
6.1.2 Bungalows 25
6.1.3 Ventilation within Properties 25
6.1.4 NSAI Ventilation Verification. 25
7. DISPOSAL OF EXISTING OIL BURNERS SYSTEM 26
7.1.1 Oil Tanks 26
7.1.2 Oil Burners 26
7.1.3 Decommissioning and Disposal of Oil Tank Bases & Oil Burner Base 26
8. ELECTRICAL UPGRADE 27
9. Photovoltaic Supply, Installation & Commisioning 28
10. Air Tightness Test 29

1. GENERAL.

This specification covers the requirements and conditions for the installation of Air to Water Heating Systems, the installation of windows & doors, mechanical ventilation and all associated works in relation to the respective elements of work in occupied private dwellings. It shall be read and construed together indicating layout of radiators and design of heating systems generally.

The heat pump system will incorporate motorized valves, thermostats for separate heating and DHW controls and a DHW cylinder. All motorized valves, Wireless thermostats, and TRV's will be included to achieve maximum control and energy efficiency as required under I.S 813 2014, Building Regulations 2019 Part L Conservation of Fuel and Energy, and ETCI Regulations, particularly ET101.

Sample of all material's will be submitted for approval to NWEA before installation work Commences.

All windows shall have insulated PVC frames. An existing completed scheme of windows and doors shall be examined in advance of acceptance of contract.

1.1 Compliance with Regulations

The installation of Air Source Heat Pump will be carried out by suitably qualified and competent trade personnel and in accordance with Industry standards. The heating contractor must be a trained and registered contractor, showing manufacturers training certificate, this must be submitted to NWEA before installation work commences.

The relevant regulations governing central heating installations are as follows:

BUILDING REGULATION'S PART L 'CONSERVATION OF FUEL AND ENERGY - DWELLINGS'

ETCI REGULATIONS NATIONAL RULES FOR ELECTRICAL INSTALLATIONS ET 101 2008

HEALTH AND SAFETY AT WORK ACT

1.2 Safety Statement

The Contractor will be required to produce a current Health and Safety Statement and Documentation in accordance with the Health and Safety at Work Act.

1.3 Equipment to be installed in each Dwelling

The installation of the heating systems shall be as per specification, and will consist of the following items of equipment:

1. Air source Heat Pump must be A++ rated and be tested and prove compliance with
   - EN16147 with a minimum nwh value of 145%
   - EN 14825 with a minimum ns 125%

   package unit specified. In built water softener as standard in package cylinder.

2. Radiators will be rolled top as indicated in specification and of correct output and adjusted in Dimension to fit beneath windows on external walls where possible.

3. Circulating pump Grunfos or equivalent A rated of required flow rate and head to provide full circulation to entire system. Pump valves to be spindle lock shield type or equivalent, approved.

4. Expansion vessel of correct size, charge, and pressure.

5. Thermostatic Radiator Valves in all bedrooms.

6. Cylinder Thermostat supplied by Heat pump Manufacturer with Internal Unit

7. Programmer 2 Zone – 7 Day – for Heating & Hot Water and independent time platform.

8. Motorized valves with indicator lights.

9. Two wired room thermostats with Auto-Adaptive Control (1 Thermostat per zone). Contractor to request approval for wireless thermostats.

10. A No.2 safety valve of approved type including press gauge.

11. A Pressure gauge clearly visible for inspection.

12. Automatic ‘air vent’ as required.

13. Automatic System by-pass valve.

14. A double check non-return valve on filling line.
15. Drain off points on Heating and Hot Water System
16. Install Magna clean to system and power flush the entire system. Drain off valve to be installed.

17. 50mm Schneider box trunking or similar approved.

2. HEAT PUMP SPLIT SYSTEM

2.1.1 Outdoor Unit

- The distance between the outdoor unit and an adjacent surface at the sides must be minimum 100mm as per manufacturer's instruction manual.
- The outdoor unit will comprise of a compressor and condenser, linked to the indoor with 1/4 and 1/2' F-Gas refrigeration pipe work max length as per manufacturer's instruction manual.
- If the outdoor unit is to be wall mounted:
  The unit should be installed on cantilever arms with condensate pipes fitted to storm drain,
- Provision of 100mm discharge gully; shall include all underground pipework to the nearest storm drainage and all subsequent reinstatement works.
- If the outdoor unit is to be standing
  A – the unit should be installed on 2 rubber mounts/flexi feet and condensate pipe fitted to storm drain. The drainage can also be achieved by means of an eco-drain or drain gully underneath the unit connected to storm drain.
  B – refrigerant pipes to be installed in 100mm duct from the location of outdoor unit to location of indoor unit.

  The contractor must submit any drip tray proposals for beneath the external fan. Details to include: tray design, paint finish, wall mounting supports, stainless steel bolts for securing, connection from fan to tray, discharge from tray into gully's. No connection direct to downpipes is acceptable, slope on trays, distance from fan to tray.

2.1.2 General

- It is essential that the design of the heat emitter is calculated correctly to ensure best performance for the heat pump.
- Heat pump should be sized according to the lowest geographical temperature where the heat pump is to be installed.
- The H.P must be capable of delivering sufficient kw output for dwelling at flow T of 45C and outside air of -2C.
- The H.P compressor must be inverter driven capable of full modulation depending on heat load demand.
- The H.P outdoor unit's casing should be electrostatically powder coated and the evaporator should be 'blue fin coated' making this suitable for coastal areas installation.
- The H.P must meet all EU standards – Equipment to be used must be tested in accordance with current registration and manufacturer's installation.

NOTE - All electrical components associated with the heat pumps to comply with ET101/SAFE ELECTRIC/NSAI/SEAI current standards, rules and regulations.

NOTE – Full details/calculations/specifications of the proposed systems shall be submitted for approval to the Mechanical Inspectors NWEA.

2.1.3 Emitters

- Radiators
  - Replace all existing radiators throughout the project, with a minimum of double rads of equal size to existing.
  - Steel panel radiators to be sized for low temp heating system.
  - Radiators must be sized at a flow T of 45C
  - If applicable – existing radiators outputs must be checked at a flow temp of 45C and measured against the heat loss of the room.
  - SR50 calculation must be carried out and show prove radiator sizing. **NWEA will require the SR50 calculation sheets.**

2.1.4 Controls

- Heating controls by heat pump manufacturer or 3rd party to allow full time & temp control for each zone. DHW (Domestic Hot Water) to be prioritized via built-in factory mounted 3-way v a l v e .
- Control must include DHW scheduling, with automatic disinfection mode and an auto adaptive weather compensated heating curve.
- Built in quiet level function of up to 30% noise reduction on outdoor unit.
- Room stats to be hard wired non-programmable.

2.1.5 Contractor Requirements

- The installer must be fully trained to Manufacturer Service level.
- System installer to have F-Gas certification/City & Guild – 2079 Refrigerant Handling Qualification. **Installers also to be manufacturer approved installers.**
- **On completion of works heating system to be commissioned in accordance with manufacturer's instructions and commissioning certificates will be issued as part of the Operating & Maintenance manual. Upon successful commissioning, a full manufacturer's parts warranty is to be issued and to be agreed.**
- Specify warranty and maintenance period for parts and labor and materials.
- **Proof of Service & Continuous training on manufacturers product for the installation and 5 year maintenance plan.**

2.1.6 Indoor Unit

- The indoor unit must come equipped with an A rated inverter driven water pump, expansion vessel, back up heater, magnetic filter and dirt/air separator, primary 3-way diverter valve and insulated, DHW cylinder.
- The heat loss for the - 170 Liter DHW Cylinder must not exceed 1 .91kwh/24hrs.
  - 200 Liter DHW Cylinder must not exceed 1.91kwh/24hrs.
- The indoor unit components must come fully integrated in the indoor unit with footprint of not more than 595mm x 600mm approx. and controller.
- The indoor Unit must not exceed 1600mm – approx. depending on cylinder capacity.
- The indoor unit must have a minimum usable water volume of 170Litres

- The unit must include a heat exchanger for maximum hot water efficiency
- The indoor unit must contain a “Scale Trap” to protect the unit from Limescale
- The indoor unit must contain an SD card or similar to allow for operating data to be saved automatically.

The approved system will ideally combine the outdoor unit with a compact integrated indoor unit for delivering heating and domestic hot water using R32 technology. The system can work with under floor heating, radiators and fan coil convectors (a heating/cooling model is also available) offer a usable water volume of 170ltr or 200ltr integrated tanks depending on the DHW requirement. The build-in user interface allows quick configuration and easy operation, SD connections allowing easy and quick on-site set-up and commissioning.

System Layout	Low temperature indoor & outdoor
Outdoor Unit	SUZ-SWM40VA or equivalent
Indoor Unit	EHST17D (D)/ EHST20D (D) or equivalent
Domestic hot water tank type	Integrated stainless steel
Domestic hot water tank capacity (liters)	170 OR 200
Indoor unit size	1600 x 680 x 595 approx.
Heating energy up to (at 35C outlet)	A++
Hot water energy up to	A
Refrigerant	R32
Refrigerant GWP	675

Contractor must ensure that no gas line from the External fan unit to the internal heat transfer unit is not crossing the existing walkway in the attic. The walkway is a working platform and must not have gas lines crossing the platform as this may create a potential trip hazard for anyone working in the attic.

2.1.7 Commissioning & Service Contract

Include a 5 Year Service & maintenance Contract - Complete Visual, Mechanical & Electrical Inspection and Service of the Indoor and Outdoor Units.

The Air Source Heat Pump will be commissioned in strict accordance with particular manufacturers’ instructions, registered or approved by the manufacturer as a recognized installer certified to commission on behalf of the manufacturer. Particular attention to be paid to manufacturers’ instructions regarding condensate drain requirements for the unit specified. The external condensate pipe is to be minimum of 1 ¼’’ PVC and properly clipped.

The servicing of Air Source Heat Pump will be carried out by suitably qualified and competent trade personnel, registered or approved by the manufacturer and in accordance with Industry standards. <u>The competent person must be registered and certified with the manufacturer of the specific unit to maintain warrant</u>

2.2 Plumbing

2.2.1 Radiators

Replace all existing radiators (as listed in the works documents only) throughout the project, with a minimum of double rads of equal size to existing radiators. The rads will be installed as per below, type of radiator to be agreed in advance of installation. **As a general rule all radiators will be installed on external walls <u>below windows</u> unless otherwise agreed.** Where radiators have to be installed on internal walls the output of the particular radiator will be increased by 15%. Radiators will be capable of producing their stated output with a mean water temperature of *45* Degrees Centigrade.
Radiators will be hung securely with brackets provided and fitted with Pegler/ Terrier lock shield valves or similar approved with stem seal replaceable without having to drain system. Thermostatic Radiator Valves are to be mounted horizontally to achieve maximum efficiency. In dwelling for the elderly i.e. one bed units or those dwellings designated for disabled the TRV's will be Top Bottom Opposite End (**T.B.0.E)** to facilitate convenient operation. A radiator on the ground floor will be fitted with Myson drain tail, or equivalent approved, for flushing and future draining of the system for insertion of cleanser and inhibitor. All radiators will be covered to protect finish until final commissioning and handover.

***SR50 calculations to be provided to NWEA.**

2.2.2 Domestic Hot Water

The Domestic Hot Water Cylinder will be 170/ 200 Liters capacity with factory 50 mm factory insulated coating and use a heat exchanger for hot water production.

- Drain off valves to be accessible on cylinder in Hot Press
- Cylinder tamper proof thermostat to be located at front of cylinder
- Isolation valves to be no more than 1.4m form FFL
- If cylinder is mounted on concrete floor, timber platform to be provided.

2.2.3 Circulating Pump

2.2.3.1 Circulating Pump

- The pump will be positioned inside the integrated indoor unit.
- The pump shall be fully accessible for maintenance.
- The pump shall be fitted with valves, spindle lock shield type, to allow replacement without draining the system
- The pump shall be capable of maintaining an appropriate flow rate throughout the system in all operating conditions
- A rated EU required.

2.2.3.2 Circulating pump for Bungalow's

Where there are bungalows within the estate which will require a booster circulating pump following the retrofit as the internal pressure will be impacted on both the hot water and cold water. Following the works there shall be no pressure differential

2.2.4 Expansion Vessel

A diaphragm type vessel to B.S 4817 Part 1 will be installed to accommodate the increase in water volume at system rise in temperature.

- Connecting pipework will not be less than 22mm, no valve installed.
- Heating expansion must be located within the integrated indoor unit, with a capacity of 12L.
- Capacity of vessel will accommodate increase in volume when system is heated.
- Vessel will be positioned to provide access for maintenance and charge pressure testing.
- Vessel to be accurately sized for system operation.

2.2.5 Controls

The controls for the system will be capable of providing independent time and temperature control for the heating system and the domestic hot water by use of the following components:

- 2 Port motorized valves with internal auxiliary switches and mode indicator lights.

- A cylinder immersion type thermostat, TAMPERPROOF.
- A main controller with separate and independent time menu for Heating and Hot Water (Type to be approved by NWEA before installation) mounted at eye level for convenient operation.

- A TRV must be fitted in all bedrooms.

The position of the motorized valves and cylinder thermostat will be agreed with NWEA in advance of installation. Switched spur without indicator will be positioned close to be integrated indoor unit with Programmer positioned at eye level in accessible and user-friendly location. All electrical connections to heating systems will be carried out by qualified electricians and will comply fully with E.T.C.I. Regulations National Rules for Electrical Installations ET 101 2020 and will be in accordance with manufacturers' instructions for all components.
Contractor will ensure that reverse circulation will not occur in any system with the installation of automatic controls for separate hot water and heating selection.

2.2.6 Fill Tanks

A 27-liter fill tank will be provided to facilitate filling of the system and periodic make up of lost water from the system. This tank will be located in the attic space as high as possible for the provision of adequate head.

2.2.7 Civil Works Associated with Properties

The existing hot presses may not be large enough for the proposed heat transfer units, it will be necessary to reconstruct a new larger hot press which shall accommodate the unit and shall also provide adequate working space for future maintenance of said unit.

The contractor is to review and visit each house listed in the contract. The contractor and his/her designer to make a recommendation to NWEA for approval for each house for the location of the heat transfer unit. The unit will be enclosed with stud partition and matching doors (MDF)

2.2.8 Existing stock cock impacted by works.

Tenant will require unhindered access to the stop cock following the works, if the works impact the existing brass stopcock in the hot press, the stopcock shall be relocated to an accessible location in advance of any junctions.

2.2.9 Trunking/Boxing.

Trunking for the replumbing of properties will involve installing minimum of ½ MDF to the wall. Pipes fixed to the MDF, side and capping fixed to the MDF on the wall. All pipes will be insulated inside the box. Boxing will consist of where pipes enter the rooms to where they enter the radiator.

2.2.10 Commissioning & Training

The system shall be Commissioned and rectify any teething issues which may occur during and after the works.
Provide a suitable set of operating & maintenance instructions for the tenant and provide information regarding the adjusting of the temperature control settings. Also, inform the tenants of the most efficient way to operate the system to reduce energy costs.

Provide a full detailed operational manual to NWEA for the complete operation of the internal and external units. Provide an hour in-depth training of the operation of control unit to NWEA staff.

3. INSULATION

3.1 External Wall Insulation

100mm External Wall Insulation (EWI) EPS board, Soltherm External Thermal Insulation or similar with a thermal conductivity of 0.031 w/mk installed as per attached specification with a dry dash finish. Product to be NSAI Agrément certified. Include associated works such as, adjustment of rainwater goods, gullies, cill covers & vents. See Appendix A

3.2 Cavity Wall Insulation

100mm External Wall Insulation (EWI) EPS board, Soltherm External Thermal Insulation or similar with a thermal conductivity of 0.031 w/mk installed as per attached specification with a dry dash finish. Product to be NSAI Agrément certified. Include associated works such as, adjustment of rainwater goods, gullies, cill covers & vents. See Appendix B. The current SR 54 Code of Practice for Energy Efficiency Retrofit to Dwellings indicates a requirement for Agrément certification or equivalent for cavity wall insulation and its installer.
Pumped bead must also have a Thermal conductivity of 0.035 (λ) W/mK or better.

3.3 Dry-Lining

Internal wall insulation is a method which consists of the provision of a layer or layers of insulation on the internal face of the existing structure. The following systems are permissible following consultation with NWEA below:
— thermal laminated board;

— insulation between battens with thermal laminate board over; and

— insulation between independent stud.

External render should be in good condition prior to installing internal insulation. Remedial action should be taken to eliminate ingress of water to the wall fabric. Dry-lining should not be used to isolate dampness. The source of dampness should be rectified and the walls allowed to dry thoroughly.

3.4 Attic Insulation

Pitched roof attic insulation Earthwool Loft Roll 44 or similar with a thermal conductivity of 0.044w/mk installed as per attached specification. Product to be NSAI Agrément certified or BS EN ISO 13501-1 approved. See Appendix C
Contractors must ensure that there is a 450mm wide raised walkway to the MEV unit. The walkway shall be raised 150mm above the rafters and there must be continuous insulation below the walkway.
There is a lot of construction activity in attics from TV alterations, Electricians, MEV works, the contractor is responsible to ensure there is a complete 300mm insulation across the entire attic on completion of the works.

3.5 Pitched Roof Internal Insulation (extensions)

Remove existing plaster board and any existing insulation found between the rafters in the sloped areas of the ceilings. Supply and install 100mm rigid high density insulated between rafters in exposed sloped areas. Ensure insulation overlaps at existing wall and ceiling areas. Insulation to be Kingspan Kooltherm K7 or similar approved. Ensure that the insulation is cut to fit tightly between the rafters.

Supply and install 62.5mm rigid high density insulated plasterboard with breathable membrane (vapour barrier – NWEA to approve same) to underside of ceiling. (12.5mm plasterboard and 50mm rigid board insulation) thermal conductivity 0.022w/mk or better. Insulation to be Kingspan kooltherm K18 or similar approved. Contractor to allow for the taping of all joints and re-skimming of insulated plasterboard - sloped and standard ceilings. Allow for adjusting electrical roof fittings and plaster ceiling on completion.

If this cannot be achieved, the ceiling on the flat roof extension will require a 200mm rigid board (PIR or similar) over roof decking. New Trocal roof covering, eaves, soffit and rainwater goods to be supplied and fitted.

Floor areas must be fully protected at all times during works.

3.5.1 Proprietary Attic Hatch

Where required install a proprietary metal insulated attic trap door. Draught strip shall be fitted to all sides of the attic hatch /access door and attach rigid board to trap door (100mm)

Non-hinged attic hatch covers shall be fitted with a securing catch at each side (i.e. minimum of two catches), to achieve the required compression.

All hinged attic hatch covers/ vertical access doors shall have at least one securing latch fitted to the attic hatch framework on the opposite side to the hinges, to achieve the compression required.

3.5.2 Ventilation

In the cases where soffit ventilation is to be placed, Install continuous 10mm Upvc soffit strip ventilation to run parallel with wall of house complete with new treated s/w soffit timbers

Fresh Air Supply
Fresh air in dwellings is required for breathing, for the safe and efficient operation of combustion appliances and for the removal of pollutants. The fresh air requirements of an individual dwelling depend on the rate of production of these pollutants and the occupancy habits of the household.

Air vents must be acoustic type – Agrément certified, HETAS approved for use with solid fuels, independently tested, TGD Part J 2014 – Manufacturer: contractor’s choice.

Reference:

AAC125LP- Rytons Super Acoustic LookRyt Air Core or equivalent, Rytons Building Products Ltd, web: www.vents.co.uk, tel: +44(0)1536511874. Permanent ventilation Opening of free area of min. 6500mm² as per TGD Part J 2014, Table 1,
Core drilled, suitable for 320mm cavity wall, External grill and external baffle colour white, Internal: paint internal panel to match room colour, super acoustic lining reduces sound by 44 dB Dn,e,w, incl. all necessary ducting.

3.5.3 Slate Ventilation

Tile and slate ventilation shall provide 20,000sqmm ait throughflow and installed at suitable elevation to provide cross ventilation in the attic space

3.5.4 Cold Water Storage Tanks

Correct support of the tank as per current Home bond guide installation of pipe work in the attic and hot press where required

Pipelines Installation:

1. Appearance: Install pipes straight, and parallel or perpendicular to walls, floors, ceilings, and other building elements.
2. Pipelines finish: Smooth, consistent bore, clean, free from defects, e.g. external scratching, tool marks, distortion, wrinkling, and cracks.
3. Concealment: Generally conceal pipelines within floor, ceiling and/ or roof voids.
4. Access: Locate runs to facilitate installation of equipment, accessories and insulation and allow access for maintenance.
5. Arrangement of hot and cold pipelines: Run hot pipelines above cold where routed together horizontally. Do not run cold water pipelines near to heating pipelines or through heated spaces.
6. Electrical equipment: Install pipelines clear of electrical equipment. Do not run pipelines through electrical enclosures or above switch gear distribution boards or the like.
7. Insulation allowance: Provide space around pipelines to fit insulation without compression – min 19mm wall thickness for pipe insulation

3.5.5 Insulation for water tanks

Installing Insulation to Cisterns

1. Standard: In accordance with BS 5970.
2. General: Fix securely to sides and top of cisterns. Leave no gaps.
3. Access cover: Fit removable pvc corrugated lid complete with 50mm high density insulation board.

4. Underside of cistern: Insulate where exposed in unheated spaces.
5. Fit proprietary lagging jacket to tank

6. Please ensure that before any insulation works are to be carried out to, any pipework or the storage tank or the hot water cylinder within any of the properties, that a check is done for any leaks.

3.5.6 Radon Monitors

The EPA provides a radon measurement service which is accredited by the Irish National Accreditation Board to ISO 17025 for homes and workplaces – further advice if needed can be sough here. Radon Monitors should be in the form of the "Standard Domestic Radon testing Kit" and should be supplied by the Radiological Protection Institute of Ireland (RPII) or similarly approved / registered body / supplier.

4. WINDOWS AND DOOR INSTALLATION

Remove and dispose of existing and install new approved triple glazed uPVC windows by Engineer to have the following specification and come with NSAI U-value certification for the entire window unit; to include all necessary air tightness sealants and tapes to perimeter as required; including all making good / redecoration at jambs and heads; including removal of existing window boards and replacement with new MDF window boards; with the following thermal performance factors:

Effective Air Leakage: 0.01W/m²K
Triple Glazed Unit: 0.6W/m²K
Solar Energy Transmittance: 0.64
Standard :Agrement Certified (IAB or BBA)
Colour / Texture :
Thermal Transmittance: 1.1 W/m²K
Solar factor: 0.40

Window frames must be insulated PVC frames, no uninsulated frames shall be accepted.
No ground floor windows shall have child proof locks.

Reinforcement: as required by window size and frame selection used.
Glazing Detail: triple glazed with dry drained system to give secure by design approval including warm edge space bars.
Ironmongery / Accessories: Manufacture standard. Opening lights which open out to be fitted with friction hinges with a built-in "child resistance" restrictor device which meets BS6375 Part 2:1987
Night Vents: Controllable Trickle Ventilators with inspect mesh protection and external canopies to be fitted into fixed light section of all bedroom and living room windows to provide min ventilation area required by the Building Regulations.
Fixing with Stainless steel cramp locks into window profile and plugged and screwed or shot fixed into masonry reveals.
U-Value of overall window unit (frame and glass): min 0.8W/msqK
Guarantee: uPVC window, workmanship and performance: 10 Years, Seal Glassed units:10 years lifespan, Expected lifespan min 60 Years. Window Energy Performance Certification: NSAI

4.1.1 Front and Rear Doors

New Doors to be certified U Value as follows, 1.4 W/msqK or better for back door and 1.4 W/msqK or better for front door, independently certified. Appropriate third part certification ie

NSAI Fenestration Certification. Triple Glassed, Low-E glass, Argon filled with warm edge spaced bar. Doors to have a minimum of five point locking system. Doors to have appropriate wheelchair accessible threshold and a minimum clear effective opening width of 900mm with thumb turn lock. The works include hacking off plaster around doors reveals, sealing with approved air tightness tape and flexible sealant to prevent air leakage. Bond and skim reveals, replace beads as necessary and paint. Doors to be uPVC frames white in colour. Allow for all reinstatement works.
Some front doors have large side panels, which are integrated to the door. Replacement doors will include similar side glass panels as existing, where applicable.
The door locking barrel shall be a single piece with no grub screw on the thumb turn.

CONTRACOR MUST ENSURE THAT MANUFACTURES/PROVIDER OF WINDOWS AND DOORS CAN PROVIDE INDEPENDENT CERTIFICATION PRIOR TO INSTALLATION ON SITE. CONTRACTOR TO CONFIRM SAME WITH NWEA ENGINEER PRIOR TO INSTALLATION.

4.1.2 Alu-clad windows and doors

- **Regulatory Compliance:** Units must be fully compliant with **TGD Part L (2021/2022 nZEB)** and hold valid CE/UKCA marking to **I.S. EN 14351-1**.
- **Thermal Performance:** The maximum allowable whole-unit U-value for any window or door set must be ≤ 0.80 W/m²K (calculated to EN ISO 10077-1).
- **Airtightness:** Certified to Class 4 (EN 12207) to assist in achieving overall building air permeability targets of < 1.5 m³/(h·m²) @50Pa.
- **Configuration:** Low-E triple-glazed insulating glass units (IGU), typically **48mm overall thickness** (e.g., 4mm Float Low-E / 18mm Argon / 4mm Float / 18mm Argon / 4mm Float Low-E).
- **Timber Core:** Factory-selected, laminated engineered softwood (Scandinavian Pine or equivalent) with a minimum 90% heartwood content. Moisture content must be controlled to 12% (± 2%). Timber must be **FSC or PEFC certified** with fully documented chain of custody.
- **Aluminium Cladding:** Marine-grade extruded aluminium external skin, mechanically clip-fixed to the timber core to allow for independent thermal expansion and a continuous ventilated drainage cavity.

4.1.3 Window and Door Installation

Numbers and sizes of windows vary per property; there are bungalows, two stories of varying sizes, types and some with extensions. The Contractors shall include all windows in the houses and extensions but not in any outhouses or sheds for replacement.

Window frames must be insulated PVC frames, no uninsulated frames shall be accepted.
New windows to be certified U Value 0.8 W/msqK or better, independently certified. **The entire window unit must be a minimum of 0.8w/m2k.** Appropriate third part certification ie NSAI Fenestration Certification. Triple Glassed, Low-E
glass, Argon filled with warm edge spaced bar.

Prior to fitting all windows and doors, contractor to allow for checking and taking photographic condition survey of all d.p.c's. and obtaining the NWEA approval prior to fitting of all windows and doors. Contractor to allow for the placing of all DPC's around windows if required.

All window and door frames have minimum 5mm cover on existing reveals.

Contractor to allow for cutting back concrete door plinths to in-line with inside of new door frames, fitting new d.p.c.'s and door plinths to in-line with outside of door frames. **(Contractor must ensure that any level access thresholds have full width concrete support along its length.)**
New PVC door is to be butted to the DPC and plaster repairs internally.

Replace any damaged or defective concrete windowsills.

Ensure windows have non-lockable handles.

Seal around all windows internally with Calk or Silicon to prevent drafts and seal around external doors with silicon.

Contractor to allow for making good to any window reveals, both internally and externally damaged in the course of the works. No Gypsum plasters to be used externally.

Contractor to ensure that; were necessary, any window frames fit tightly to the external reveal and allow for replacing all sill boards, With new ¾ MDF. Moisture resistant MDF board to be installed in bathrooms.

The Contractor shall carefully remove all existing blinds, curtains, tracks, brackets, fixings and associated accessories prior to commencement of the window replacement works.
All removed items shall be carefully stored and protected by the Contractor for the duration of the works. Following completion of the new window installations, the Contractor shall reinstate and securely refit the existing blinds, curtains, tracks, brackets, fixings and associated accessories to the new windows/openings.
The Contractor shall ensure that all reinstated items are securely fixed, fully operational and suitably aligned. Any damage to existing blinds or associated fittings arising from their removal, storage or reinstatement shall be made good or replaced by the Contractor at no additional cost to the Employer.

Fire escape windows on first floor to Building Regulations specification. Window restrictors on all first-floor windows.

There are a small number of windows that have broadband supplies going through the window. Please ensure the broadband service is still active following the works.

4.1.3.1 Air Tightness Tape

The Windows shall be fitted and sealed with fireproof and airtight expanding foam. Install 50mm double sided air tightness tape to connect the window frame to the internal wall. Include a 50mm white PVC trim internally.

4.1.3.2 Window Cills

Replace any damaged or defective window cills on the project. Certification required for new cills

4.1.3.3 Window Boards.

Replace all internal window board on any property receiving new windows, all new window boards shall be ¾ MDF, ensure they are securely fixed to the window board and plastered below finished with a silicon seal. Window boards to extend 50mm beyond reveals. All bathrooms to receive moisture resistant MDF.

5. FIREPLACES/RANGES/STOVES

5.1.1 Removal of Chimneys

Clean and sweep all chimney flues thoroughly and remove all soot. Clean out fire grate, solid fuel grating and ash box. The Range and Livingroom chimney will be decommissioned and removed to ceiling joist level.

Contractor shall drop chimney below ceiling joist level and shall allow for the following:

- Security of the site whilst the works are ongoing.
- Ensuring the property is kept weather tight while the works are ongoing.
- Any safety requirements for completion of the works, in accordance with safety requisitions.
- The disposal of any waste resulting from the works and Proof that the waste is disposed of in an approved EPA waste licence facility.
- Due to the year of construction, the roof covering may contain asbestos. Prior to removing the covering, the contractor should satisfy themselves regarding the presents therein of asbestos and use the appropriate procedures to remove and dispose of in compliance with regulations.
- To ensure that the site and surrounding area are kept clean and free from debris at all times.
- Include the installation of breathable membrane.
- Install new rafter support where required.
- Re-felt, re-batten and re-tile stripped section of the roof.
- Install tile to match the existing tiles and match the colour, minimize the visual impact at the front of the house.
- Microfilm the chimney flue.
- Concrete seal the top of the flues
- **Concrete Roof tiles to match existing:** Quinn Roof tiles, Range: **Western Slate**, Colour: **Graphite** (or equally approved) on new 50 x 36mm new replacement pressure treated softwood battens, fixed with alloy ring shank nails min. size 65 x 3.35mm, laid on new replacement underlay Laydex Corotop Red strong (or equally approved), all the above are to be fitted in accordance with all the appropriate standards, manufactures guidelines and building regulations.
- Install new ridge tile where the chimney has been removed.
- Fire bridging is maintained between adjoining properties following the works in compliance with the Building Regulations.

A number of bungalows and two-story properties have combined chimneys with adjacent properties. When both properties are owned by the local authority the chimney shall be dropped as detailed above. Contractor must ensure fire bridging between properties is in compliance with the Building regulations on completion. Where the adjoining property is privately owned then the chimney shall be closed off with an earthen wire cap.

5.1.2 Stoves /Ranges (including Back Boilers)

Carefully remove existing Range/Stove with back boiler and make good; transport any agreed stove to Local Authority Yard; following decommission clean chimney and build up the opening with blocks,; ensure flue is weather tight and air tight include for all, plastering, skim, lead capping to top of existing flue/place earthen ware chimney capping, vermiculite infill, all necessary flooring/ceiling repairs, leveling compound, skirting, sealant and the like.
Each property will be examined individually, some tenants have replaced the stoves and these stoves belong to the tenant, they will be decommissioned but returned to the tenant.

5.1.3 Fireplaces for Disposal (including Back Boilers)

Carefully remove existing fireplace with or without back boiler in the Sitting room and dispose of, including the hearth and back boiler or fire back.
Following decommissioning, clean chimney and build up the opening with blocks, seal the flue, plaster and skim wall. Ensure flue is weather tight and airtight include for all plstering, skim, lead capping to top of existing flue/place earthen ware chimney capping, vermiculite infill, all necessary flooring/ceiling repairs, leveling compound, skirting, sealant and the like
Install black nonslip R11 tiles, certification to be provided to NWEA. Tile and trim to tie into existing floor cover level.
There are several properties that have fitted modern fireplaces which do not want the fireplace removed. Contractor to carry out all works necessary to block up the fireplace and skim following decommissioning as detailed above.
Following the deactivation of back boiler remove copper pipes and plaster any holes.

5.1.4 Hit & Miss vent

Replace the existing permanent (125mm AC7LP –Rytons Baffled LookRyt® AirCore®) wall vent on the external wall with a new proprietary 100mm wall vents in the living room, fresh 90’s or similar approved, allow for all associated works.

6. MECHANICAL VENTILATION.

6.1 Mechanical Ventilation.

Approved Demand Control Ventilation System; Aereco or equivalent; comprising all system components including fresh air inlets, extract units and central electric constant pressure fan; air inlets to achieve an air inlet flow rate of minimum 5m3/hr and maximum 35-40m3/hr at 10 Pa with a wind damping device to control draughts in windy conditions, silent operation, an internal grille which disperses the air without draughts and an external grille or slot with an insect screen; extract units to achieve an air flow rate of min 12m3/hr and max 70m3/hr @100Pa, bathrooms and en suites with WC's shall be humidity sensitive and shall also incorporate a boost function that opens the extract unit to maximum on activation of a sensor incorporated in the extract unit; centralised extract fan to be a constant pressure / variable volume central extract fan that uses no more than 0.50 W/I/sec of specific fan power, have a proven long service life and be quiet in operation generating no more than 30 dB within 1m at full power.

A MEV unit shall be installed centrally as possible and situated away from the trap door so its not interfered with people accessing the attic and brought through appropriate ducting in compliance with all relevant codes, regulations and manufacturer's recommendations; contractors to allow for fitting warning light / alarm device to indicate if DCV system is broken or malfunctioning; contractor to include for all remedial works and items associated with retrofitting Mechanical Demand Control Ventilation System house / apartment including making good around vents both internally and externally; installed in accordance with manufacturer’s instructions and as per Retrofit Specification for Existing Domestic Dwellings and SR54.

Contractor to ensure the MEV isolator is securely fixed to a timber fixing on a rafter in the attic and easily accessible from trapdoor.

MEV pipes in the attic must be adequately insulated as there is cold air discharge which will condensate and create moisture issues.

Ventilation systems and strategies outside those outlined in TGD F should have NSAI Agrément Certification to demonstrate compliance with Building Regulations.

6.1.1 Two stories

Duct shall connect direct from MEV unit in attic, through ducts to vent covers in the downstairs kitchen and Bathroom, if possible. If not, the system can be both centralized and decentralized, centralized in the upstairs and entrance hall and decentralized in the kitchen, bathroom and utility where necessary. To ensure cross ventilation, all doors should have a minimum of 10mm gap from threshold to under door.

Automatic controls should be set to switch to boost when relative humidity within the wet room reaches 70 %, and that the boost remains on until the relative humidity reduces to 50 %.

6.1.2 Bungalows

A center mounted MEV system with ducts to the kitchen, utilities and bathroom in the attic. All ducts shall be insulated to prevent condensation in pipework.. To ensure cross ventilation, all doors should have a minimum of 10mm gap from threshold to under door.

Automatic controls should be set to switch to boost relative humidity within the wet room reaches 70 %, and that the boost remains on until the relative humidity reduces to 50 %.

6.1.3 Ventilation within Properties

Contractor shall ensure there's a minimum of 10mm air flow under each internal door in the property. If this is not achieved the doors shall be trimmed accordingly or an equivalent air vent is cored at low level near each door to allow for air circulation, include baffled vent covers.

6.1.4 NSAI Ventilation Verification.

The following verification is required from an approved NSAI certified ventilation assessor where a ventilation system is being installed.

- a post-works air permeability of less than 5 m3/hr.m2 is demonstrated.
- demonstration of validation by an independent competent person from NSAI Ventilation Validation Scheme.

7. DISPOSAL OF EXISTING OIL BURNERS SYSTEM

7.1.1 Oil Tanks

Thoroughly washout, clean, and check existing oil tank, oil pipes. Where the tenant hasn't emptied the oil from the tank, remove any remaining waste and put into drums for the homeowner. Homeowner to return drums to the contractor within 4 weeks.

7.1.2 Oil Burners

Contractor to remove and safely dispose of oil burner unless otherwise agreed by the homeowner.

7.1.3 Decommissioning and Disposal of Oil Tank Bases & Oil Burner Base.

The existing concrete oil tank and oil burner bases and oil lines located in back gardens shall all be removed from the gardens and the area shall be soiled out, raked level and grass seed sowed. Any oil tank in concreted areas shall be left flush concrete finish, so there is no trip hazard. All old oil lines shall be removed. Remove any potential trip hazards.

8. ELECTRICAL UPGRADE

All works completed must comply with the current Electric IS10101:2020 regulation standards.

Contractor shall inspect and include upgrading of tails/cable from ESM meter cabinet to fuse board and the upgrade of the fuse board where required.

On completion provide the required electrical certification as per the requirements of Safe Electric Ireland, for any new and for all existing electrical wiring etc within each property.

Install a new green boxed earth rod, earth spike and ensure the earth is bonded from earth spike, through meter and fuse board and back to the hot press.
Any metal switches identified in the properties must be earthed where located.
NWEA require No.3 Certificate for each property and a Periodic inspection report (PIR).

Illegally installed showers by the tenants shall be noted, where the shower is not fitted to Electric standards; the contract shall issue NWEA a hazard notice.

9. Photovoltaic Supply, Installation & Commisioning.

The supply, installation & commissioning of the Photovoltaic systems will be in accordance with the **DOMESTIC SOLAR PHOTOVOLTAIC CODE OF PRACTICE FOR INSTALLERS guidance document issued by SEAI.** SPV Code of Practice

10. Air Tightness Test

The list of NSAI registered NSAI independent competent persons are available at:
https://www.nsai.ie/certification/agrement-certification/air-tightness-testing/

https://www.nsai.ie/certification/agrement-certification/ventilation-validation-registration-scheme/

Certificate numbers must be provided when recouping funding for the following elements.

[1] Must only be included if necessary to facilitate EWI, where single glazed or poorly performing double glazed windows exist (i.e. U Value >2.0 W/m$_2$K and more than 15 years old) and to facilitate Heat Loss Indicator (HLI) for heat pumps.

[2] When installing heat pumps the HLI for the dwelling should be in accordance with the SEAI Heat Pump Grant Scheme requirements and the assessment should be carried out by a competent person such as a technical advisor registered for SEAI Heat Pump grant scheme.

The list of SEAI Registered Technical Advisors is available at:
https://www.seai.ie/grants/find-a-registered-professional/SEAI-Registered-Technical-Advisors.pdf

[3] Allocation also provides for upgrades to electrical wiring required for heat pump installation including upgrade of consumer panel.

[4] Mechanical ventilation can be included where a post-works air permeability of less than 5 m3/hr.m2 is demonstrated

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See Appendix A

Cl/SfB 41 Rq2

@NSAI
Agrement

IRISH AGRÉMENT BOARD
CERTIFICATE NO. 12/0371
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Soltherm
External Thermal Insulation Composite Systems

NSAI Agrement {Irish Agrement Board) is designated by Government to issue European Technical Approvals.

NSAI Agrement Certificates establish proof that the certified products are 'proper materials' suitable for their intended use under Irish site conditions, and in accordance with the Building Regulations 1997 to 2019.



PRODUCT DESCRIPTION:
This Certificate relates to the Solthermlll P and **MW** Systemlls. The systemlls collprise of:

- Su,face preparation of 177aso111y or concrete substrate;
- Full systemll beads and render only beads;
- Insulation boards
  - **P System:** Expanded Polystyrene and Graphite Enhanced Polystyrene
  - **MW System:** Mineral Wool
- Celllentitious base coat with reinforcement;
- Decorative finish (ac,ylic, llline,·al, silicone, silicone/acrylic, silicate, dash)
- Mechanical fixings;
- Adhesive fixings;
- Weather tight joints;
- Movelllent joints;
- Provision **for** lillliting cold bridging at external wall/floor junctions in compliance with Acceptable Constrnction Details published by DHPLG.
- Provision for fi1·e stopping at external compartment walls and floors.

Soltherm External Insulations Ltd is responsible for the design, manufacture and supply of all components to approved specifications.

The list of Solthermlll Agents/Distributors in Ireland is available at www.e-soltherm.com/en/Official%20distributors.

The ETICS system is designed on a project specific basis by trained Soltherm External Insulations Ltd or their approved Agents/Distributors in accordance with an approved design process.

The installation of the system is carried out by installers who have been trained by Soltherm Agents/Distributors and are approved by Solthermlll External Insulations Ltd and NSAI Agrement to install the system. Applicators must adhere to strict installation guidelines as specified by Soltherm External Insulations Ltd.

Readers r1re advised to check thc1t this Certificate has not been withdrawn or superseded by o later issue by contacting NSAI Agr€:ment, NSAI, Santry, Dublin 9 or online at http://www.nsai.ie