



Heat Network Technical Assurance Scheme

New Build Heat Networks

Technical Specification

Consumer Heat System

Phase 2: Design

HNTAS-NB-TS-CH-P2

Version History

Revision	Notes	Date
V0.4	Draft issue	05/12/25

Disclaimer

The following HNTAS Code document is published in draft format. This document is intended to give the sector early sight of HNTAS requirements in their current stage of development for the purpose of facilitating sector understanding of the scheme.

Draft Code documents, including Technical Specifications and Assessment Procedures, have been reviewed and consulted on through a series of technical workshops with participation from a range of experts from across the Heat Network industry. The content of this document is still in development and subject to change. Requirements should not be considered as fixed at this stage.

Changes which may be made to this document in future include those to:

- reflect learnings from the New Build and Existing network pilot programmes;
- align with aspects of HNTAS which are subject to public policy consultation;
- align with new requirements in TS1 and MMS;
- align the terminology of this document with that used in other HNTAS documentation;
- rectify errors in this draft version; and
- improve clarity of contents.

The Key Failures set out in the draft Code documents have been identified as a specific area for review, to ensure that:

- all Key Failures enable a binary assessment;
- Key Failures are only included for genuine issues presenting major risks to KPIs, and that moderate or lower risks are considered via non-conformity processes; and
- Key Failures do not duplicate Technical Requirements unless there is a clear justification to do so.

DESNZ will be welcoming feedback on the information in this document via a change management process. This process will run in parallel to the HNTAS policy consultation and DESNZ invites stakeholders to engage with both, once they are open. You can sign up to receive updates on future detailed draft technical documents as they are published by contacting: heatnetworks@energysecurity.gov.uk.

Please be advised that this document references other HNTAS draft Code documents which have not yet been published. References to other documents will also be subject to change following the publication of updated standards. The final version of this document will be released before the launch of HNTAS.

Note on Phase 4: Operation (initial) and Phase 5: Operation (ongoing)

The New Build Technical Specification and Assessment Procedures Overview (Phase 0) documents indicate that there are separate New Build Code Documents for Phase 4: Operation (initial) and Phase 5: Operation (ongoing).

These documents have since been consolidated to reduce the number of Code Documents, so the Phase 4: Operation documents cover requirements for New Build networks during both initial and ongoing operation.

This change does not impact the assessment of New Build networks in operation, which still occurs:

- after 1 year of operation; and
- after 2 years of operation.




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Foreword

This Technical Specification forms part of the UK Government's Heat Network Technical Assurance Scheme (HNTAS, The Scheme) delivered by the Department for Energy Security and Net Zero, in partnership with the Scottish Government and Ofgem. The Department for Energy Security and Net Zero appointed FairHeat as technical author for this document.

The Scheme has been designed and developed in consultation with a range of experts across the Heat Network industry in the form of Technical Sub-Working Groups, culminating in a series of Technical Specifications and Assessment Procedures to facilitate the validation and verification of performance outcomes of Elements within a Heat Network.

This document specifies HNTAS Requirements for a Consumer Heat System Element within a New Build Heat Network in Phase 2: Design.

This document sits within a series of Technical Specifications for a Consumer Heat System, which features within a wider Code documentation structure, as outlined in Table 1.

This Technical Specification has been issued in draft format and will be updated prior to scheme launch.

For further information on the use of this document within the Heat Network Technical Assurance Scheme, please refer to the Heat Network Technical Assurance Scheme – New Build Heat Networks – Scheme Rules – Assessment Regime (HNTAS-NB-SR-XX-AS) document.

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Code Document Structure

Technical Specifications

Document Type	Element		Part/Phase				
			Overview	Phase 1: Feasibility	Phase 2: Design	Phase 3: Construction	Phase 4: Operation
			P0	P1	P2	P3	P4
Technical Specification	Energy Centre	EC	HNTAS-NB-TS-EC-P0	HNTAS-NB-TS-EC-P1	HNTAS-NB-TS-EC-P2	HNTAS-NB-TS-EC-P3	HNTAS-NB-TS-EC-P4
	District Distribution Network	DD	HNTAS-NB-TS-DD-P0	HNTAS-NB-TS-DD-P1	HNTAS-NB-TS-DD-P2	HNTAS-NB-TS-DD-P3	HNTAS-NB-TS-DD-P4
	Substation	SS	HNTAS-NB-TS-SS-P0	HNTAS-NB-TS-SS-P1	HNTAS-NB-TS-SS-P2	HNTAS-NB-TS-SS-P3	HNTAS-NB-TS-SS-P4
	Communal Distribution Network	CD	HNTAS-NB-TS-CD-P0	HNTAS-NB-TS-CD-P1	HNTAS-NB-TS-CD-P2	HNTAS-NB-TS-CD-P3	HNTAS-NB-TS-CD-P4
	Consumer Connection	CC	HNTAS-NB-TS-CC-P0	HNTAS-NB-TS-CC-P1	HNTAS-NB-TS-CC-P2	HNTAS-NB-TS-CC-P3	HNTAS-NB-TS-CC-P4
	Consumer Heat System	CH	HNTAS-NB-TS-CH-P0	HNTAS-NB-TS-CH-P1	HNTAS-NB-TS-CH-P2	HNTAS-NB-TS-CH-P3	N/A

Table 1: New Build Network Technical Specification structure

Scope

This document specifies the HNTAS Requirements for a Consumer Heat System within a New Build Heat Network in Phase 2: Design.

A Consumer Heat System is defined as the heating and/or cooling, and hot water systems on the consumer side of a Consumer Connection or Substation.

A detailed definition of the Consumer Heat System is contained within the Heat Network Technical Assurance Scheme – New Build Heat Networks – Technical Specification – Consumer Heat System – Overview (HNTAS-NB-TS-CH-P0) document.

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New Build Heat Networks

There are two stages within Phase 2: Design, which are Stage 2: Developed Design and Stage 3: Technical Design. This is outlined in Figure 1.

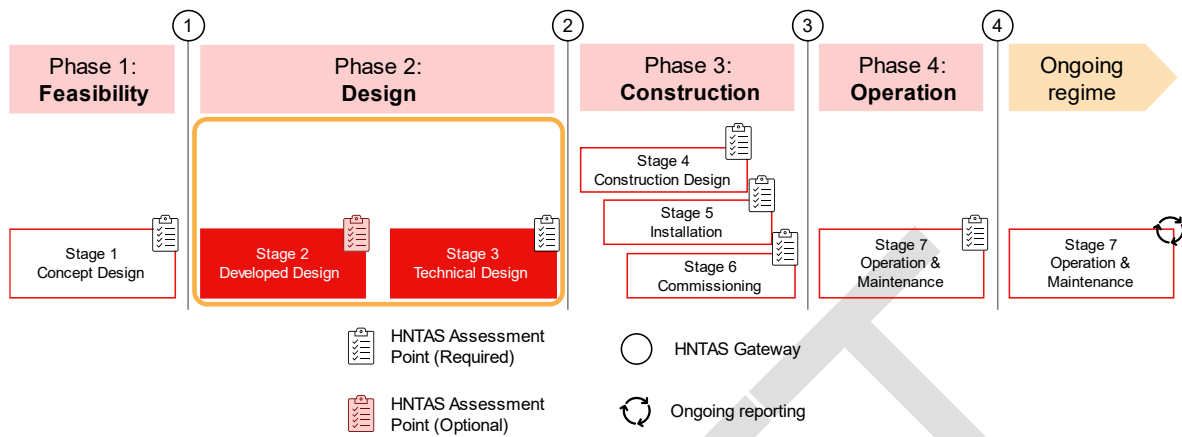


Figure 1: HNTAS New Build regime phases and stages

References

Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- Heat Network Technical Standard (TS1) (HNTAS, 2025)
- Heat Network Metering and Monitoring Standard (MMS) (HNTAS, 2025)
- Heat Network Technical Assurance Scheme – New Build Heat Networks – Scheme Rules – Assessment Regime (HNTAS-NB-SR-XX-AS)
- Heat Network Technical Assurance Scheme – New Build Heat Networks – Technical Specification – Consumer Heat System – Overview (HNTAS-NB-TS-CH-P0)

Informative references

The following informative references apply to this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- BSI (2019) BS 7593:2019: Code of practice for the preparation, commissioning and maintenance of domestic central heating and cooling water systems (London: British Standards Institute)
- RIBA Plan of Work (RIBA, 2020)

Terms and Definitions

For the purposes of this document, the terms and definitions given in the Heat Network Technical Assurance Scheme – Terms and Definitions (HNTAS-XX-TD) document apply.

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2. Requirements for Stage 2: Developed Design and Stage 3: Technical Design

2.1. Technical Requirements

The applicable HNTAS Technical Requirements in Table 2 shall be fulfilled.

Technical Requirement		Applicable technical standard(s)		Evidence Requirement(s)
		Stage 2	Stage 3	
2.1.1.	Peak heat demands and annual heat consumption shall be calculated in accordance with the applicable technical standard(s).	TS1 2.1.1 TS1 2.1.2 TS1 2.1.3 TS1 2.1.4 TS1 2.1.5 TS1 2.1.6 TS1 2.1.7 TS1 2.1.8 TS1 2.1.9 TS1 2.1.10 TS1 2.1.11 TS1 2.1.12 TS1 2.1.14 TS1 2.1.17 TS1 2.7.3	TS1 3.1.1 TS1 3.1.2 TS1 3.1.3 TS1 3.1.4 TS1 3.1.5 TS1 3.1.6 TS1 3.1.7 TS1 3.1.8 TS1 3.1.9 TS1 3.1.10 TS1 3.1.11 TS1 3.1.12 TS1 3.1.14 TS1 3.1.17 TS1 3.7.3	CH-S2-E01
2.1.2.	The temperature of the domestic hot water: <ul style="list-style-type: none"> generated by the domestic hot water system; and delivered to individual domestic hot water outlets, shall be determined in accordance with the applicable technical standard(s).	TS1 2.2.1 TS1 2.2.7 TS1 2.2.8 TS1 2.2.9 TS1 2.2.11 TS1 2.4.3	TS1 3.2.1 TS1 3.2.7 TS1 3.2.8 TS1 3.2.9 TS1 3.2.11 TS1 3.4.3	CH-S2-E06
2.1.3.	The domestic hot water system design shall ensure domestic hot water delivery times can be achieved in accordance with the applicable technical standard(s).	TS1 2.2.11 TS1 2.2.12	TS1 3.2.11 TS1 3.2.12	CH-S2-E04 CH-S2-E05 CH-S2-E06 CH-S2-E11

Technical Requirement		Applicable technical standard(s)		Evidence Requirement(s)
		Stage 2	Stage 3	
2.1.4.	<p>Space heating operating temperatures shall be determined in accordance with:</p> <ul style="list-style-type: none"> • peak-demand and part-load conditions; • the incoming Distribution Network temperatures; • the approach temperatures at the Consumer Connections (where applicable) and return temperature requirements to the Distribution Network; • any future changes in the Distribution Network temperature or weather compensation; • heat emitter design considerations; and • the applicable technical standard(s). 	TS1 2.2.2 TS1 2.4.3 TS1 2.4.5 TS1 2.4.9 TS1 2.4.10	TS1 3.2.2 TS1 3.4.3 TS1 3.4.5 TS1 3.4.9 TS1 3.4.10	CH-S2-E02
2.1.5.	<p>Space heating emitters shall be sized to provide the required output for the area served at peak demand design conditions with the specified operating temperatures.</p>	TS1 2.1.9	TS1 3.1.9	CH-S2-E07

Technical Requirement		Applicable technical standard(s)		Evidence Requirement(s)
		Stage 2	Stage 3	
2.1.6.	<p>Radiators and associated valves shall be designed and specified:</p> <ul style="list-style-type: none"> with the flow connection (inlet) at the top of the radiator and return connection (outlet) at the bottom of the radiator, unless there are specific technical constraints which would make bottom-bottom-opposite entry connections preferable; to not have a TRV installed on the radiator in the same room or 'heating zone' (known as a reference radiator), but still with a pressure-independent valve to limit the flow rate; and in accordance with the applicable technical standard(s). 	<p>TS1 2.2.1 TS1 2.2.2 TS1 2.2.3 TS1 2.2.4 TS1 2.2.5 TS1 2.10.2</p> <p>Building Regulations Part L Volume 1 5.22 (2023)</p> <p>Building Regulations Part L Volume 2 5.16 (2023)</p>	<p>TS1 3.2.1 TS1 3.2.2 TS1 3.2.3 TS1 3.2.4 TS1 3.2.5 TS1 3.10.2</p> <p>Building Regulations Part L Volume 1 5.22 (2023)</p> <p>Building Regulations Part L Volume 2 5.16 (2023)</p>	<p>CH-S2-E06 CH-S2-E07</p>

Technical Requirement		Applicable technical standard(s)		Evidence Requirement(s)
		Stage 2	Stage 3	
2.1.7.	<p>The differential pressure across the space heating circuit shall be calculated. This shall include the differential pressure due to the frictional resistance of the Consumer Connection technology, heat emitters, fixtures, and fittings.</p> <p>For indirect space heating systems, the differential pressure across the space heating circuit shall be used to inform the sizing of the space heating circuit distribution pump contained within the Consumer Connection.</p>	TS1 2.2.3	TS1 3.2.3	CH-S2-E08 CH-S2-E09
2.1.8.	<p>Wet towel rails should be avoided; electrical towel rails should be used instead.</p> <p>Where specifying a wet towel rail cannot be avoided, it shall be designed with a lockable return temperature limiting (RTL) valve with a return temperature setting not exceeding 35 °C. The risk of increased return temperatures from dual-fuel towel rails shall be considered and managed (e.g. through appropriate use of an RTL, or an alternative equally effective method).</p>			CH-S2-E04 CH-S2-E05 CH-S2-E06 CH-S2-E10

Technical Requirement		Applicable technical standard(s)		Evidence Requirement(s)
		Stage 2	Stage 3	
2.1.9.	<p>Space heating pipework shall be sized to achieve the required output at peak demand.</p> <p>The pipework shall be sized in accordance with:</p> <ul style="list-style-type: none"> the velocity limits of the pipework material selected; differential pressure requirements of the space heating circuit distribution pump (where used); and, the applicable technical standard(s). 	TS1 2.2.3 TS1 2.5.5	TS1 3.2.3 TS1 3.5.5	CH-S2-E04 CH-S2-E05 CH-S2-E08
2.1.10.	<p>For direct space heating systems, working pressures shall be assessed in accordance with the applicable technical standard(s).</p> <p><i>Note: it is expected that this assessment is undertaken with consideration of the other Elements present in the Heat Network.</i></p>	TS1 2.6.1 TS1 2.6.2 TS1 2.6.3 TS1 2.6.4	TS1 3.6.1 TS1 3.6.2 TS1 3.6.3 TS1 3.6.4	CH-S2-E03
2.1.11.	<p>For direct space heating systems, a Water Quality Strategy shall be developed in accordance with the applicable technical standard(s).</p> <p><i>Note: it is expected that this is undertaken with consideration for the other Elements present in the Heat Network.</i></p>	TS1 2.11.1 TS1 2.11.2 TS1 2.11.3 TS1 2.11.5	TS1 3.11.1 TS1 3.11.2 TS1 3.11.3 TS1 3.11.5	CH-S2-E04 CH-S2-E06 CH-S2-E12
2.1.12.	<p>For indirect space heating systems, a Water Quality Strategy shall be developed in accordance with the applicable technical standard(s).</p>	BS 7593	BS 7593	CH-S2-E04 CH-S2-E06 CH-S2-E12

Technical Requirement		Applicable technical standard(s)		Evidence Requirement(s)
		Stage 2	Stage 3	
2.1.13.	For direct space heating systems, the Consumer Heat System shall be designed to minimise the entry of oxygen into the system.	TS1 2.11.20 TS1 2.11.24 TS1 2.11.28 TS1 2.11.29	TS1 3.11.20 TS1 3.11.24 TS1 3.11.28 TS1 3.11.29	CH-S2-E04
2.1.14.	For direct space heating systems, the design of the Consumer Heat System shall mitigate the risk posed by stagnation in the system.	TS1 2.11.25	TS1 3.11.25	CH-S2-E04 CH-S2-E05 CH-S2-E06 CH-S2-E12
2.1.15.	For direct space heating systems, water quality equipment shall be specified in accordance with the applicable technical standard(s).	TS1 2.11.14 TS1 2.11.15 TS1 2.11.18 TS1 2.11.23	TS1 3.11.14 TS1 3.11.15 TS1 3.11.18 TS1 3.11.23	CH-S2-E04 CH-S2-E05 CH-S2-E06 CH-S2-E12
2.1.16.	An outline commissioning plan for the Consumer Heat System shall be developed in accordance with the applicable technical standard(s). This requirement is only applicable at Stage 3.	N/A	TS1 3.8.2 TS1 3.17.5	CH-S2-E13
2.1.17.	The required items to be demonstrated, the performance criteria and methodology for Acceptance Testing shall be identified in accordance with the [HNTAS Acceptance Testing Standard]. The Consumer Heat System design shall be able to facilitate the Acceptance Testing methodology. This requirement is only applicable at Stage 3.	N/A		CH-S2-E14

Technical Requirement		Applicable technical standard(s)		Evidence Requirement(s)
		Stage 2	Stage 3	
2.1.18.	<p>Specialist Heat Network design items to be completed at the Construction Design stage shall be identified.</p> <p>A design specification for the specialist design items to be undertaken during the Construction Design stage shall be produced, which shall indicate the design and performance requirements of the item. The specification shall also outline any applicable HNTAS Technical Design standard(s).</p> <p>This requirement is only applicable at Stage 3.</p>	N/A		CH-S2-E15
2.1.19.	<p>Drawings and schematics shall be produced in accordance with the applicable technical standard(s).</p>	TS1 2.17.3 TS1 2.17.4	TS1 3.17.3 TS1 3.17.4	CH-S2-E04 CH-S2-E05
2.1.20.	<p>The Technical Parameters Schedule shall be completed with accurate information and references to relevant documentation.</p>			CH-S2-E16

Table 2: Technical Requirements for the Consumer Heat System at Stage 2: Developed Design and Stage 3: Technical Design

2.2. Performance Monitoring Requirements

The applicable Performance Monitoring Requirements in Table 3 shall be fulfilled.

Performance Monitoring Requirement	Applicable technical standard(s)		Evidence Requirement(s)
	Stage 2	Stage 3	
2.2.1. The KPI Schedule shall be updated. The KPI Schedule shall contain: 1. the identified applicable KPIs at the Commissioning Stage; 2. the thresholds for each KPI at the Commissioning Stage (based on the level of information available at this stage); and, 3. the location for measuring each KPI.			CH-S2-E17

Table 3: Performance Monitoring Requirements for the Consumer Heat System at Stage 2: Developed Design and Stage 3: Technical Design

2.3. Key Failures

The applicable Key Failures listed in Table 4 shall not be present.

Key Failure		Outcome to avoid	Evidence Requirement(s)
2.3.1.	Inappropriate selection of space heating and/or DHW temperature profiles.	High DHW and space heating temperatures increase the required temperature from the Distribution Network, which increases heat losses and reduces heat generation efficiency of the Heat Network. High DHW temperatures also generate scalding risks.	CH-S2-E02
2.3.2.	Incorrect sizing of heat emitters.	Overheating or underheating of consumer spaces, leading to reduced consumer comfort.	CH-S2-E01 CH-S2-E06
2.3.3.	Architectural consideration not given to DHW delivery design (for example, distance between DHW generation point and DHW outlets), to ensure acceptable DHW delivery times can be achieved.	Extended DHW delivery times due to long pipework distances between DHW generation point and DHW outlets, resulting in poor consumer outcomes.	CH-S2-E03 CH-S2-E04 CH-S2-E10
2.3.4.	Oversizing of DHW generation pipework between DHW generation point (e.g. HIU) and DHW outlets.	Extended DHW delivery times due to oversized pipework between HIU and DHW outlets, resulting in poor consumer outcomes. Additionally, will result in increased heat losses.	CH-S2-E10
2.3.5.	System working pressures not considered when specifying the Consumer Heat System equipment, specifically in the case where direct heating systems are used.	The Consumer Heat System equipment pressure rating or differential pressure rating not sufficient given the system working pressures. This can result in equipment failure, void warranties and health and safety risks.	CH-S2-E03

Key Failure		Outcome to avoid	Evidence Requirement(s)
2.3.6.	Lack of consideration to pipework routing and coordination, as well as lack of specification of air vents on all high points of pipework.	Air locks within heating systems, leading to reduced heat delivery, as a result of lack of air vents within heating system.	CH-S2-E03
2.3.7.	All radiators specified with thermostatic radiator valve head, which results in no reference radiator.	No reference radiator installed, which can result in bypasses at the Consumer Connection if the consumer only operates space heating via the thermostatic head and not the thermostat.	CH-S2-E05
2.3.8.	Heat emitter sizing not considered in spatial and architectural planning in dwellings.	Due to lower temperature heating systems required for Heat Networks in comparison to generic gas boiler heating systems, heat emitters (typically radiators) need to be larger. This is frequently not considered within the spatial planning of the consumer building, which can result in temperatures having to be increased as there is not sufficient space for the size of emitters required for lower temperatures.	CH-S2-E04 CH-S2-E06

Table 4: Key Failures for the Consumer Heat System at Stage 2: Developed Design and Stage 3: Technical Design

2.4. Evidence Requirements

The applicable Evidence Items listed in Table 5 shall be provided to demonstrate fulfilment with the Technical Requirements, Performance Monitoring Requirements, and avoidance of Key Failures.

Evidence Item		Detailed description and requirements
CH-S2-E01	Peak and annual heat demand calculations and schedule	<p>Methodology, calculations, data, and assumptions used to estimate peak and annual heat demands shall be provided. This shall also contain calculated heat losses.</p> <p>Shall include a schedule outlining the expected peak and annual heat demand for the Consumer Heat System or Consumer Heat System type.</p> <p>Detail shall include Consumer ID (e.g. dwelling type), type of consumer and expected use, size (floor area). For residential dwellings shall also include the number of occupants and number of bathrooms.</p>
CH-S2-E02	Operating temperature assessment	<p>Evidence shall contain the selected operating temperatures for the space heating and/or DHW system. Where there is a DHW system, the temperature at each outlet type shall be outlined.</p> <p>Rationale for the selected flow and return temperatures shall be provided. This shall consider the requirements of the network, heat emitters and occupants.</p> <p>When looking at existing buildings this shall contain the information as described within TS1 3.4.5.</p> <p>Any health and safety risks and mitigations shall also be outlined.</p>
CH-S2-E03	System pressure assessment	<p>Assessment of working pressures in the system.</p> <p>Shall include:</p> <ul style="list-style-type: none"> • calculation of the System Maximum Working Pressure; • calculation of the Local Maximum Working Pressure; • identification of the risks that arise as a result of calculated working pressures; • assessment of the likelihood and impact of the identified risk; • mitigation of the risks posed by working pressures (where appropriate).
CH-S2-E04	Consumer Heat System Schematic(s)	<p>Schematic(s) to the detail as required by the applicable RIBA stage (RIBA, 2020).</p>

Evidence Item	Detailed description and requirements
	<p>Schematic(s) shall outline the hot water services and heating services.</p> <p>Schematic(s) shall be present for all the Consumer Heat System types.</p> <p>Schematic shall state the pipework size, velocity, flow rate and pressure drop for each section of pipework.</p>
CH-S2-E05 Consumer Heat System Drawing(s)	<p>Drawing(s) to the detail as required by the applicable RIBA stage (RIBA, 2020). Drawing(s) shall include layout and section drawings.</p> <p>Drawing(s) to be provided for all the Consumer Heat System types.</p> <p>Drawings shall indicate pipework routing for both hot water services and space heating services, and outline coordination with other services and infrastructure where required (walls, ceiling voids etc.)</p>
CH-S2-E06 Consumer Heat System specification(s)	<p>Shall contain the specification for the Consumer Heat System.</p> <p>Specification shall provide a description of the intended system operation, the products to be used and the performance requirements.</p> <p>Expected specifications for the Consumer Heat System include:</p> <ol style="list-style-type: none"> 1. Space heating system, emitters, and associated equipment (e.g. radiator valves); 2. Hot water system.
CH-S2-E07 Space heating emitter schedule, specification and sizing calculations	<p>Shall contain a schedule of heat emitters, which shall contain:</p> <ul style="list-style-type: none"> • the emitter type(s); • the design required output; • the actual output at the operating temperatures; • emitter connection arrangement; • method of room temperature control; • presence and type of towel rails. <p>Where there are associated radiator valves, which are required to be set, shall contain:</p> <ul style="list-style-type: none"> • type of radiator valves; • the valve settings; • location and orientation of radiator valves.

Evidence Item		Detailed description and requirements
		Shall also contain inputs, assumptions, methodology and calculations used to calculate the heat emitter size.
CH-S2-E08	Space heating distribution pipework sizing calculations	Shall contain calculations used to size the space heating distribution pipework. Calculations shall contain the inputs, assumptions and methodology used.
CH-S2-E09	Space heating distribution circuit pressure drop calculations	Shall contain calculations used to determine the pressure drop and the required differential pressure from the space heating circuit distribution pump. Calculations shall contain the inputs, assumptions and methodology used.
CH-S2-E10	Wet towel rail assessment	Where wet towel rails are used, shall document the justification for use of wet towel rails and outline the intended wet towel rail design to prevent impact on return temperatures.
CH-S2-E11	DHW delivery time calculations	Shall contain calculations demonstrating time to deliver DHW to kitchen, or other nominated, outlet. Calculations shall outline all inputs, assumptions and methodology used. This shall include the DHW generation time at the Consumer Connection.
CH-S2-E12	Water Quality Strategy	Documentation produced for each hydraulic system which includes information regarding the management of water quality in the system. Shall include: <ul style="list-style-type: none"> the type of water quality system to be followed (e.g. Chemically Treated System or Depleted Water System); the selection of the fill water source; the selection of the material of plant, equipment, and distribution pipework (which, for retrofit scenarios, should include consideration of its compatibility with the current existing system); the specification for water treatment and conditioning (e.g. filtration, softening, demineralisation, chemical dosing etc.); the presence of hydraulic breaks between distribution pipework and space heating circuits on the Consumer Heat Systems; initial specification of the flushing methodology (e.g. closed loop pre-treatment cleaning (CPC) or flush-to-drain).
CH-S2-E13	Commissioning plan	Outline commissioning plan containing: <ol style="list-style-type: none"> a list of required commissioning activities;

Evidence Item		Detailed description and requirements
		<ol style="list-style-type: none"> the key criteria to be achieved during commissioning; the time order of commissioning activities and interdependencies; specific requirements that the construction commissioning plan has to adhere to.
CH-S2-E14	Acceptance Testing methodology and criteria	<p>Shall outline:</p> <ol style="list-style-type: none"> a list of required parameters for testing; the outline methodology to enable demonstration of required parameters; any specific requirements for Construction Phase Acceptance Testing methodology and criteria.
CH-S2-E15	Specialist Construction Design Items Specification	<p>Specification for the specialist Construction Design items.</p> <p>Shall include performance requirements and identify applicable HNTAS requirements based on the type of design item.</p>
CH-S2-E16	Technical Parameters Schedule	Schedule which outlines all technical parameters in one location, with reference to applicable documents.
CH-S2-E17	KPI Schedule	<p>A schedule of all KPIs required to be measured at the Commissioning Stage for the Consumer Heat System.</p> <p>The KPI Schedule shall contain:</p> <ol style="list-style-type: none"> the identified applicable KPIs at the Commissioning Stage; the thresholds for each KPI at the Commissioning Stage (based on the level of information available at this stage); and, the location for measuring each KPI.

Table 5: Evidence Requirements for the Consumer Heat System at Stage 2: Developed Design and Stage 3: Technical Design