Energy Technology List

Department for Energy Security & Net Zero

Product application checklist

Please complete in BLOCK CAPITALS

Pipework Insulation

Manufacturer/supplier name: .....

Applicant's name: .....

Telephone number: .....

Product information

Product name: .....

Model number: .....

Please complete each section of this form based on your product's characteristics. Incomplete or incorrect data could affect the processing of your product application.

Each product application should be made on a separate form unless a product's design characteristics are common to all the products. In this instance a single application can be made for multiple products.

1. Product testing and certification	No	Yes
Where type testing has been used to demonstrate product performance please ensure that the information supplied is sufficient to demonstrate the performance of all products for which applications are being made.		
1.1 **Does the product have an appropriate Conformity Assessment mark?**	☐	☐
1.2 **Manufacturers shall provide a Declaration of Performance (DoP) to declare the thermal conductivity used to calculate pipework thickness. Standardised assumptions used to calculate the heat loss according to EN ISO 12241:2008 are to be submitted for categories 4, 5 & 6. This shall include ambient air temperature, surface emissivity, operating temperature and orientation.**	☐	☐
1.3 **Have the following standards been used for measuring and calculating product performance (where applicable)?**		
a) BS 5422:2009 Method for specifying thermal insulating materials for pipes, tanks, vessels, ductwork and equipment operating within the temperature range -40°C to +700°C	☐	☐
b) BS EN ISO 12241:2008 Thermal insulation for building equipment and industrial Installations.	☐	☐
c) BS 5970:2012 Thermal insulation of pipework, ductwork, associated equipment and other industrial installations in the temperature range of -100°C to +870°C. Code of practice	☐	☐
d) NES Y-50 (2011)	☐	☐

1.	Product testing and certification (continued)	No	Yes

1.4 **How was the product(s) performance tested?** *(Please select one)*

a) In-house testing – Self-certified ☐ ☐

b) Tested in the manufacturer's in-house laboratory, in accordance with a registered Quality Management System and a representative sample of the test data has been cross-checked and verified by an independent body (i.e. 'self-tested and verified or cross-checked by an independent body') ☐ ☐

c) Tested by a laboratory either in house or on-site, witnessed by an independent body (i.e. 'witnessed testing') ☐ ☐

d) Tested by an independent laboratory (i.e. 'independent testing') ☐ ☐

e) Representative testing ☐ ☐

Please refer to the ETL Testing Framework for details of the requirements that must be satisfied for each of these product testing options

1.5 **Where product testing has been done in accordance with a registered Quality Management System, what is its registration number?**

.....

1.6 **Where a representative sample of the test data has been cross-checked and verified by an independent body:**

a) What is the name of the independent laboratory?

.....

b) What is the laboratory's registration number (where accredited)?

.....

1.7 **Where product testing has been witnessed by an independent body, what was the name of the witness?** *(Please include contact details).*

.....

1.8 **Where products have been tested by an independent laboratory:**

a) What is the name of the independent laboratory?

.....

b) What is the laboratory's registration number (where accredited)?

.....

1.9 **If representative testing has been used what are the 'representative models'?**

ETL Product ID number	Product name and model number
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

Where applications are being made for products of the same constructional design to be included on the Energy Technology Product List (ETPL), test data may be submitted for a single representative model provided that the maximum rated output of the products being applied for is not more than three times, or less than one third, the maximum rated output of the product tested. Where the range of rated outputs exceeds these limits, products should be grouped into size ranges that comply with these rules, and test data submitted for one representative model for each group.

2. Product type

		No	Yes
2.1	**What category of pipework and pipework fitting is your product(s)?** *(Please select one)*		
	1) Refrigeration pipework and fittings	☐	☐
	2) Chilled water pipework and fittings	☐	☐
	3) Process pipework and fittings	☐	☐
	4) 'Domestic' space heating & hot water services and fittings (excluding insulation within individual dwellings)	☐	☐
	5) Non-domestic hot water services and fittings	☐	☐
	6) Non-domestic space heating services and fittings	☐	☐

3. Product performance

		No	Yes
3.1	**For categories 1 and 2, in 2.1 above, does the product:**		
	a) comply with clause 28.4 of BS 5970:2012 (applicable to hot pipework fittings)	☐	☐
	b) comply with the relevant clauses, tables and annexes of BS 5422: 2009 as set out in Table 1.1 below.	☐	☐
3.2	**For category 3, in 2.1 above, does the product:**		
	a) comply with clause 28.4 (applicable to cold pipework fittings) or clause 8.4 of BS 5970:2012 (applicable to hot pipework fittings)	☐	☐
	b) comply with the relevant clauses, tables and annexes of BS 5422:2009 as set out in Table 1.1 below.	☐	☐

Table 1.1 *Relevant clause, table(s) and annex(es) of BS 5422 (2009) used to determine the minimum required thickness for pipework insulation and fittings categories 1, 2 and 3.*

Product category		Relevant Clause	Relevant Table(s)	Relevant Annex
1	Refrigeration pipework	6	None	F
2	Chilled water pipework	7	10 & 11	A
3	Process pipework	10	21	A

3.3	**For categories 4, 5 and 6, in 2.1 above, does the product:**		
	a) comply with clause 29.2.10 BS 5970:2012 (applicable to hot pipework fittings)	☐	☐
	b) comply with the maximum permissible heat loss criteria found within **Table 1.2**, **Table 1.3** & **Table 1.4** below, which duly form the basis for determining the minimum required thickness of pipework insulation for each category for an eligible installation.	☐	☐

Table 1.2 *Maximum Permissible Heat Losses for Domestic Space Heating & Hot Water*

Domestic Space Heating & Hot Water	
Temperature 60°C	
Outside pipe diameter (mm)	Permitted heat loss (W/m)
8	≤ 5.82
10	≤ 6.20
12	≤ 6.52
15	≤ 7.03
22	≤ 8.02
28	≤ 8.87
35	≤ 9.63
42	≤ 10.58
54	≤ 11.83

'≤' means 'less than or equal to'

Tables reproduced with kind permission from 'ECA enhanced tables of NES Y-50 (2011).

Table 1.3 *Maximum Permissible Heat Losses for Non-Domestic Hot Water Supply*

Non-Domestic Hot Water Supply	
Temperature 60°C	
Outside pipe diameter (mm)	Permitted Heat loss (W/m)
17.2	≤ 6.04
21.3	≤ 6.45
26.9	≤ 7.00
33.7	≤ 7.71
42.4	≤ 8.46
48.3	≤ 9.01
60.3	≤ 9.94
76.1	≤ 11.25
88.9	≤ 12.17
114.3	≤ 14.29
139.7	≤ 16.09
168.3	≤ 18.24
219.1	≤ 22.06
273 and above	≤ 25.95

'≤' means 'less than or equal to'

Tables reproduced with kind permission from 'ECA enhanced tables of NES Y-50 (2011).

Table 1.4 *Maximum Permissible Heat Losses for Non-Domestic Heating Supplies*

Non-Domestic Heating Installations Maximum permitted heat loss (W/m)			
Temperature	**Low**	**Medium**	**High**
	≤ 95°C	96-120°C	121-150°C
Outside pipe diameter (mm)	**Permitted Heat loss (W/m)**	**Permitted Heat loss (W/m)**	**Permitted Heat loss (W/m)**
17.2	≤ 7.78	≤ 10.57	≤ 13.27
21.3	≤ 8.42	≤ 11.25	≤ 14.06
26.9	≤ 9.05	≤ 12.06	≤ 15.02
33.7	≤ 9.86	≤ 13.04	≤ 16.07
42.4	≤ 10.83	≤ 14.12	≤ 17.34
48.3	≤ 11.42	≤ 14.80	≤ 18.09
60.3	≤ 12.61	≤ 16.22	≤ 19.62
76.1	≤ 14.12	≤ 17.88	≤ 21.41
88.9	≤ 15.28	≤ 19.20	≤ 22.87
114.3	≤ 17.51	≤ 21.66	≤ 25.53
139.7	≤ 19.72	≤ 23.99	≤ 27.98
168.3	≤ 22.34	≤ 26.63	≤ 30.69
219.1	≤ 26.61	≤ 31.15	≤ 35.25
273 and above	≤ 30.91	≤ 35.83	≤ 40.05

'≤' means 'less than or equal to'

Tables reproduced with kind permission from 'ECA enhanced tables of NES Y-50 (2011).

If the pipe diameter differs from the parameters used to generate these tables, then linear interpolation methods may be used to calculate the maximum permissible heat flows and, in combination with information on the thermal conductivity of the chosen product at the relevant mean temperature, the minimum required thickness of insulation.

If the parameters of the specific installation are outside the scope of these tables (e.g. different ambient air temperature, or linear interpolation is not possible) then the minimum required thickness of insulation shall be calculated using BS EN ISO 12241:2008.

BS EN ISO 12241:2008 shall be used to calculate the pipework heat gains for refrigeration pipework insulation needed to comply with clause 6.3.2 of BS 5422:2009.

4. Summary of documents to be included

No	Yes

Please send ONE copy of each of the following documents:

If the relevant information in support of the questions above is contained within a larger document, please indicate the location of the relevant information. Note that all documentation submitted must directly refer to the model numbers for which you are making this application. Documentation should be added to your online application.

a) A technical sales brochure or leaflet for the product clearly summarising:

- i) The key features of the product (ideally including photographs of the product's exterior). ☐
- ii) The product's operation (i.e. in-built functionality) and intended applications (i.e. usage). ☐
- iii) Any product selection options (including optional extras, alternative configurations etc.). ☐

This documentation should contain sufficient detail to enable the assessor to confirm that the proposed entry on the Energy Technology Product List (ETPL) is correct, and uniquely represents a single product of fixed design (as defined by the rules of the ETL). If the model names contain any 'wildcards' in respect of cosmetic variations please check with ETL Questions that this is permitted before submitting your application.

b) A technical specification for the product, including:

- i) Details of the model numbers covered (including individual features of each model). ☐
- ii) The product's design ratings (electrical, mechanical, thermal, flow rates, energy use etc.). ☐
- iii) A description of how to install the product including connection/wiring diagrams. Where the product must be assembled, configured and/or commissioned on site before use, please include instructions. ☐

This documentation should contain sufficient detail to enable the assessor to confirm that each product entry on the ETPL has the design features specified in the eligibility criteria for that category of product. Please indicate on the checklist where information on specific design features is located in the documentation.

c) Evidence that the product meets the performance criteria, including:

- i) Manufacturers shall provide a Declaration of Performance (DoP) to declare the thermal conductivity used to calculate pipework thickness. Standardised assumptions used to calculate the heat loss according to EN ISO 12241:2008 are to be submitted for product types 4, 5 and 6. This shall include ambient air temperature, surface emissivity, operating temperature and orientation. ☐

Please note that summary test reports will only be accepted, where the accuracy of the test reports has been certified by a recognised independent body, or where one detailed test report has been submitted per product range and per laboratory used.

Please refer to the ETL Testing Framework for further guidance on the submission of test results, and minimum information requirements.

d) A Declaration of Conformity with UK/EU Directives on product safety, including: ☐

- i) An appropriate Conformity Assessment mark.

e) Evidence that a quality assurance system/procedures is/are in place to: ☐

- i) Control the specification, design, manufacturing and testing of the products. ☐

f) Signed application checklist.

Please note that all product documentation provided must be written in, or translated into, English.

5. Declaration

I confirm that the information given above is correct to the best of my knowledge and that I have read and agree to the terms and conditions governing the management of the Energy Technology List.
A copy of the terms and conditions can be found **here**.

Signature: ..... Date: .....

For more information:

Web:
etl.energysecurity.gov.uk

Phone:
+44 20 3096 4800

Email:
info@etl.energysecurity.gov.uk

Post:
Energy Technology List Coordinator
ICF
1st Floor, 62 Threadneedle Street
London
EC2R 8HP

ETL811 v4