SAP 10 Technical Paper

S10TP-03

Treatment of heat losses from heat interface units

Issue 1.0

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DOCUMENT REVISION LOG

DATE	VERSION NO.	AMENDMENT DETAILS	APPROVED BY
02/02/22	1.0	First issue	John Henderson

TABLE OF CONTENTS

1. INTRODUCTION

A Heat Interface unit (HIU) is used to transfer heat from a heat network to a dwelling's heating and/or hot water system. Heat is lost through the HIU's internal components (heat exchangers, pipework, and other components). This paper explains the default HIU standing heat losses figures used in SAP 10.2.

2. SCOPE

A HIU test regime developed by industry was published in October 2018[1]. As of November 2020, a data set for 30 HIU products (representing the majority of the market), with testing against two flow/return temperature regimes was collated (see Appendix A). The standing loss data used are from '*Test 4a: Keep-warm, DH 70 °C flow'*.

There are no mandated minimum standards for HIU heat losses, but the primary industry guidance for heat losses from HIU's can be found in CIBSE/ADE Heat Networks Code of Practice[2] (CP1) which states a minimum requirement for HIU heat loss not exceeding 1.00kWh/day. An analysis of the dataset in Appendix A indicates that the average heat loss under test conditions is 1.04kWh/day, the 75th percentile heat loss is 1.10kWh/day and the 90th percentile heat loss is 1.44kWh/day. For SAP10.2, the 90th percentile of the dataset, i.e. 1.44 kWh/day, is to be used as a conservative default value held in the Product Characteristics Database (PCDB), encouraging the use of more accurate measured data. This approach reflects that the majority of products within this data set have performance equal to or better than the 90th percentile value, with a small number indicating a materially worse performance than the 90th percentile.

Provision has been added to allow the standing losses for individual HIU's to be taken from the PCDB, based on a recognised testing methodology (e.g. BESA test). The default data will also be stored in the PCDB. Assessors should select a default entry where a particular HIU cannot be located in the PCDB.

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[1] https://www.thebesa.com/ukhiu

[2] https://www.cibse.org/knowledge/knowledge-items/detail?id=a0q3Y00000IMrmGQAT

Appendix A Standing loss data from lab test

HIU	Standing loss, W	Standing loss, kWh/day *(not on testing report)*
1	22.0	0.53
2	26.0	0.62
3	27.0	0.65
4	28.0	0.67
5	28.0	0.67
6	30.6	0.73
7	31.0	0.74
8	31.0	0.74
9	31.6	0.76
10	33.0	0.79
11	34.0	0.82
12	35.0	0.84
13	36.0	0.86
14	36.1	0.87
15	37.0	0.89
16	38.0	0.91
17	40.9	0.98
18	42.0	1.01
19	42.0	1.01
20	42.0	1.01
21	43.6	1.05
22	46.0	1.10
23	48.0	1.15
24	52.0	1.25
25	59.0	1.42
26	60.0	1.44
27	61.0	1.46
28	86.3	2.07
29	124.0	2.98