

VibeArch - ASHRAE Standard 140 Section 7 Acceptance Criteria Verification

Basis: ANSI/ASHRAE/IBPSA Addendum a to ANSI/ASHRAE Standard 140-2023 (approved 2025-08-29), Normative Annex A3

Test group	Annual & sensitivity in range	Annual & sensitivity count	Hourly in range	Hourly count	Total in range	Total range cases	Minimum to pass (Normative Annex A3)	Result
Low mass	21	21	13	13	34	34	30	PASS
High mass	18	19	9	9	27	28	25	PASS

Reference: original 140-2023 (before Addendum a) - annual/sensitivity only

Test group	In range	Range cases	Minimum to pass	Result
Low mass	21	21	18	PASS
High mass	18	19	17	PASS

Out-of-range items (with tolerance)

Case 900 Cooling (High mass)

Note: Under 2025 Addendum a, the Thermal Fabric test-group requirements are 30 of 34 range cases for Low Mass and 25 of 28 for High Mass.

Note: The original Standard 140-2023 annual/sensitivity-only requirements were 18 of 21 for Low Mass and 17 of 19 for High Mass.

Acceptance parameters

Parameter	Value	Source
Relative tolerance	0.01	Annex B12, Section B12.2(a)
Absolute tolerance	0.0001	Annex B12, Section B12.2(b)
Min Pearson correlation (all hourly cases)	0.879	Normative Annex A3, Tables A3-3 and A3-6
Hours per curve	24	Addendum a hourly load time-series tests (Feb 1 / Jul 14)

Standard: ANSI/ASHRAE/IBPSA Standard 140-2023 + Addendum a (approved 29-Aug-2025),
Normative Annex A3
Source data: Std140_TF_Results-VibeArch_YourData_filled.xlsx, sheet 'YourData'

Hourly load time-series verification — 2025 Addendum a, Normative Annex A3

Group	Case	Day	Pearson	Min Pearson	Max RMSE	RMSE	Pearson OK	RMSE OK	Result
Low mass	Case 600	Feb 1	0.9998	0.8790	0.4194	0.1109	PASS	PASS	PASS
Low mass	Case 640	Feb 1	0.9982	0.8790	0.6559	0.1690	PASS	PASS	PASS
Low mass	Case 660	Feb 1	0.9989	0.8790	0.3087	0.0727	PASS	PASS	PASS
Low mass	Case 670	Feb 1	0.9991	0.8790	0.7881	0.2248	PASS	PASS	PASS
Low mass	Case 680	Feb 1	0.9994	0.8790	0.3990	0.1094	PASS	PASS	PASS
Low mass	Case 685	Feb 1	0.9997	0.8790	0.4643	0.1356	PASS	PASS	PASS
Low mass	Case 695	Feb 1	0.9997	0.8790	0.2069	0.1168	PASS	PASS	PASS
Low mass	Case 600	Jul 14	0.9997	0.8790	0.1921	0.0472	PASS	PASS	PASS
Low mass	Case 660	Jul 14	0.9996	0.8790	0.1697	0.0535	PASS	PASS	PASS
Low mass	Case 670	Jul 14	0.9996	0.8790	0.3018	0.0695	PASS	PASS	PASS
Low mass	Case 680	Jul 14	0.9995	0.8790	0.2097	0.0600	PASS	PASS	PASS
Low mass	Case 685	Jul 14	0.9997	0.8790	0.3218	0.0461	PASS	PASS	PASS
Low mass	Case 695	Jul 14	0.9994	0.8790	0.2001	0.0634	PASS	PASS	PASS
High mass	Case 900	Feb 1	0.9892	0.8790	0.3716	0.1019	PASS	PASS	PASS
High mass	Case 940	Feb 1	0.9335	0.8790	0.4298	0.1897	PASS	PASS	PASS
High mass	Case 980	Feb 1	0.9861	0.8790	0.2969	0.1060	PASS	PASS	PASS
High mass	Case 985	Feb 1	0.9989	0.8790	0.4166	0.1193	PASS	PASS	PASS
High mass	Case 995	Feb 1	0.9991	0.8790	0.2944	0.0978	PASS	PASS	PASS
High mass	Case 900	Jul 14	0.9981	0.8790	0.0967	0.0539	PASS	PASS	PASS
High mass	Case 980	Jul 14	0.9987	0.8790	0.0986	0.0529	PASS	PASS	PASS
High mass	Case 985	Jul 14	0.9982	0.8790	0.2053	0.0423	PASS	PASS	PASS
High mass	Case 995	Jul 14	0.9982	0.8790	0.2468	0.0409	PASS	PASS	PASS

Pass rule: Pearson correlation coefficient > 0.879 AND RMSE below the case-specific limit. Case 640 and Case 940 use Feb 1 only.