

ISO 13348:2025-06 (E)

Fans - Tolerances, methods of conversion and technical data presentation

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	Symbols and abbreviated terms	10
5	Performance tolerances for purpose-designed fans and series-produced non-certified fans ...	13
5.1	Information to be provided by the purchaser	13
5.1.1	Operational	13
5.1.2	Tolerance grade	13
5.2	Information to be provided by the fan supplier	13
5.2.1	Essential information	13
5.2.2	Optional parameters	14
5.3	Tolerances	14
5.3.1	Tolerance grades	14
5.4	Purchasing arrangements	16
5.5	Contractual testing	16
5.5.1	Tolerance magnitude near optimum efficiency	16
5.5.2	Operation at other than optimum efficiency	20
5.5.3	Performance acceptance testing	21
6	Performance tolerances for series-produced fans in certified ratings programmes	28
6.1	General	28
6.2	Fan laws	28
6.3	Check-tests	28
6.4	Air performance tolerances	29
6.4.1	Check-test tolerances	29
6.4.2	Airflow Tolerance	29
6.4.3	Power tolerance (TH)	31
31	6.4.4 Efficiency tolerance	33
6.4.5	Other efficiency metrics	33
6.4.6	Application of tolerances	33
6.5	Sound Tolerances	33
6.5.1	Check-Test tolerances	33
6.5.2	Sound tolerances in octave bands	33
6.5.3	Sone value tolerance	33
6.5.4	A-weighted sound power level	33
7	Performance tolerances for Category E fans (free inlet and free outlet without a partition)	34
7.1	General	34
7.2	Performance tolerances for Jet fans	34
7.3	Performance tolerances for circulating fans	35
7.4	Performance tolerances for air curtains	35

8	Methods of conversion	36
8.1	Conversion of air performance test data	36
8.1.1	General	36
8.1.2	Similarity	36
8.1.3	Conversion rules and the fan laws	36
8.1.4	Conversion rules for series-produced fans	37
8.1.5	Conversion rules for extrapolation	37
8.1.6	Interpolation for fans incorporating one systematic geometrical change	49
8.1.7	Other identities	50
8.2	Conversion of sound power test data	51
8.2.1	General	51
8.2.2	Conditions and limits for application of conversion rules to total sound power level	51
8.2.3	Generalized methods for sound power level prediction	51
9	Technical data presentation	58
9.1	General	58
9.2	Essential information	58
9.3	Fan performance chart	58
9.4	Additional information	60
9.4.1	Sound data	60
9.4.2	Electrical data	61
9.4.3	Mechanical data	61
9.4.4	Air performance	61
9.4.5	Same fan used for different installations	61
	Annex A (normative) Documentation	64
	Annex B (normative) Marking	65
	Annex C (informative) System resistance as a function of flow rate	66
	Annex D (informative) Scaling method	69
	Bibliography	76