ISO 22043:2020 (E)

Ice-cream freezers — Classification, requirements and test conditions

Contents

	Forew	vord	
1	Scope		
2	Norma	ative references	
3	Terms and definitions		
	3.1	General	
	3.2	Parts of ice-cream freezers	
	3.3	Physical aspects and dimensions	
	3.4	Performance characteristics	
	3.5	Test environment	
4	Symb	ols and abbreviated terms	
5	Class	ification and requirements	
	5.1	Classification	
	5.2	Requirements	
	5.2.1	Construction	
	5.2.1.1	Strength and rigidity	
	5.2.1.2	Pipes and connections	
	5.2.1.3	Lids	
	5.2.1.4	Joints and seams	
	5.2.2	Materials	
	5.2.2.1	General	
	5.2.2.2	Corrosion resistance	
	5.2.2.3	Thermal insulation	
	5.2.3	Refrigerating system	
	5.2.3.1	Design and construction	
	5.2.3.2	Condensation	
	5.2.3.3	System protection	
	5.2.3.4	Refrigerant	
	5.2.4 5.2.4.1	Electrical components General	
	5.2.4.1		
	5.2.4.2	Temperature display Temperature-measuring instrument	
	5.2.4.4	Temperature sensor location	
	5.2.5	Operating characteristics	
	5.2.5.1	Water vapour condensation	
	5.2.5.2	Energy consumption	
	5.2.5.3	Specific energy consumption	
6	Tests		
	6.1	General	
	6.2	Tests outside test room	
	6.2.1	General	
	6.2.2	Seal test for lids	
	6.2.3	Test on durability of lid	
	6.2.3.1	General	
	6.2.3.2	Opening sequence	
	6.2.3.3	Closing sequence	
	6.2.4	Linear dimensions, areas and volumes	
	6.2.5	Net volume calculation	
	6.3	Tests inside test room	
	6.3.1	General	

	6.3	.2 .2.1	Test room conditions Design walls floor and radiant heat
		.2.1	Design, walls, floor and radiant heat Thermal and air flow characteristics
		.2.3	Climate classes
	6.3	.3	Test packages and life-time
	6.3	.3.1	General
	6.3	.3.2	M-packages and life-time
		.3.3	Alternative for filling test packages
	6.3		Instruments, measuring equipment and measuring expanded measurement uncertainty
	6.3		Preparation of test ice-cream freezer
		.5.1 .5.2	Selection, installation and positioning within the test room Air movement
		.5.2 .5.3	Climate measuring point
		.5.4	Loading the ice-cream freezer
	6.3	.5.4.1	General
	6.3	.5.4.2	Loading heights
		.5.4.3	M-package locations
		.5.4.4	Longitudinal section
		.5.4.5	Cross-section
		.5.5 .5.6	Running in Stable conditions
		.5.7	Test period
		.5.8	Lighting and night-covers
		.5.9	Test on several ice-cream freezers in the same test room
	6.3	.6	Test on ice-cream freezers
	6.3	.6.1	Temperature test
		.6.1.1	General
		.6.1.2	Test conditions
		.6.1.3 .6.1.4	Temperature curves of M-packages Calculation of average mean temperature
		.6.1. 4 .6.2	Lid opening sequence
		.6.3	Power supply
		.6.4	Water vapour condensation test
	6.3	.6.5	Temperature rise time test for C1 ice-cream freezers
	6.3	.6.6	Electrical energy consumption test
		.6.6.1	Test conditions
		.6.6.2	Energy consumption measurement
		.6.6.3 .6.6.4	Calculation of TEC Calculation of specific energy consumption (SEC)
_			
7	•	Test r	•
	7.1		General
	7.2		Tests outside test room
	7.3		Tests inside test room
8	1	Markii	ng
	8.1		Load limit
	8.2		Marking plate
	8.3		Information to be supplied by the manufacturer
A	nnex A	(infor	mative) Ice-cream freezer families
A	nnex B	(norm	ative) Equivalent volume calculation
A	nnex C	(norm	ative) TDA calculation
	C.1		General
	C.2	2	Calculation of TDA
Δ	nnex D	•	mative) Test for absence of odour and taste
	D.1		Preparation and testing
	D.1		Ambient temperature
	D.1 D.1		Cleaning Thermostat setting
	D.1 D.1		Thermostat setting Samples
	٠.١		- Campios

D.1.	5 Test period		
D.2	Examination of samples		
D.2.	1 Conditions		
D.2.	2 Evaluation		
Annex E (normative) Performance and energy rating of ice-cream freezers			
E.1	General		
E.2	Standard rating conditions for ice-cream freezers		
E.3	Specific energy consumption (SEC) for ice-cream freezers		

Page count: 44