

DIN EN 14750-1:2006-08 (E)

Railway applications - Air conditioning for urban and suburban rolling stock - Part 1: Comfort parameters

Contents	Page
Foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Vehicle classification	10
5 Comfort parameters	10
6 Exterior conditions	10
6.1 Normal exterior operating conditions	10
6.2 Extreme exterior operating conditions	11
7 Performance of the heating and cooling installations	11
7.1 Heating	11
7.2 Preheating	11
7.3 Cooling	11
7.4 Precooling	11
7.5 Stand by operation	12
8 Control	12
8.1 General	12
8.2 Interior temperature setting (Tic)	12
8.3 Interior temperature setting (Tic) for vehicles without cooling	12
9 Comfort condition requirements	12
9.1 Temperatures in the comfort envelope	12
9.1.1 Range of the mean interior temperature (Tim) with the respect to the interior temperature setting (Tic)	12
9.1.2 Range of the interior air temperatures measured 1,10 m from the floor	12
9.1.3 Range of the interior air temperatures in a vertical section	12
9.2 Temperatures in the local annexes	12
9.2.1 Temperature in the vestibules	12
9.2.2 Temperature in the washrooms, WC's, other annex areas	13
9.3 Relative humidity of air conditioned vehicles	13
9.4 Temperatures of the surfaces surrounding the comfort envelope of a stationary vehicle in heating mode	13
9.4.1 Walls and ceilings	13
9.4.2 Windows and doors	13
9.4.3 Minimum surface temperatures	13
9.5 Temperature at the supply air outlets and surface temperature at active heating element grille	13
9.6 Air speed	14
9.7 Air quantities	14
9.7.1 Outside air or fresh air	14
9.7.2 Recirculated air	14

9.7.3	Local annex ventilation	14
10	Complementary requirements	14
10.1	Heat transfer coefficient (k)	14
10.1.1	General	14
10.1.2	Coefficient k of the vehicle	14
10.1.3	Coefficient k for vestibules	15
10.2	Door opening/closing cycles	15
10.3	Overall transmission factor of the windows	15
10.4	Particle air filtration	15
10.5	Noise emission	15
10.6	Vibration generation	15
10.7	Safety devices	16
10.7.1	Heating	16
10.7.2	Cooling	16
10.7.3	Emergency ventilation	16
10.8	Sealing against water, snow and dust	16
10.9	Reliability, maintainability	16
10.9.1	Reliability	16
10.9.2	Maintainability	16
Annex A (normative) Regulation curves for the interior temperature setting		17
Annex B (normative) Acceptable air speed		18
Annex C (normative) Relative humidity in the comfort envelope		20
Annex D (normative) Heat emitted by a seated person dressed normally		21
Annex E (normative) Definition of climatic zones		22
Annex F (informative) Grouping of countries in climatic zones		23
Annex G (normative) Fresh air flow rate		24
G.1	General	24
G.2	Air conditioned vehicles	24
G.2.1	Category A	24
G.2.2	Category B	24
G.3	Heated/ventilated vehicles	24