

DIN EN 15316-2-1:2007-10 (E)

Heating systems in buildings - Method for calculation of system energy requirements and system efficiencies - Part 2-1: Space heating emission systems

Contents		Page
Foreword		4
Introduction		6
1 Scope		7
2 Normative references		7
3 Terms and definitions, symbols and units		7
3.1 Terms and definitions		7
3.2 Symbols and units		9
4 Relation to other EPBD-standards		10
5 Principle of the method		12
5.1 Energy calculation		12
5.2 Thermal energy required for heat emission		12
5.3 Auxiliary energy $W_{em,aux}$		13
5.4 Recoverable system thermal losses $Q_{em,ls,rbl}$ and non-recoverable system thermal losses $Q_{em,ls,nrbl}$		13
5.5 Heat demand for space heating, building heat requirement Q_H		13
5.6 System thermal losses $Q_{em,ls}$		14
5.7 Calculation periods		14
5.8 Splitting or branching of the space heating system		14
6 Energy calculation for a heat emission system		14
6.1 General		14
6.2 Heat loss due to non-uniform temperature distribution		15
6.3 Heat loss due to embedded surface heating devices		16
6.4 Heat loss due to control of the indoor temperature		16
6.5 Auxiliary energy, $W_{em,aux}$		17
7 Recommended calculation methods		17
7.1 General		17
7.2 Method using efficiencies		18
7.3 Method using equivalent increase in internal temperature		18
Annex A (informative) Energy losses of the heat emission system, adapted from German regulation DIN 18599		20
A.1 Heat emission		20
A.2 Efficiencies for free heating surfaces (radiators); room heights 4 m		22
A.3 Efficiencies for component integrated heating surfaces (panel heaters) (room heights 4 m)		24
A.4 Efficiencies for electrical heating (room heights 4 m)		26
A.5 Efficiencies air heating (non-domestic ventilation systems) (room heights 4 m)		27
A.6 Efficiencies for room spaces with heights 4 m (large indoor space buildings)		28
A.7 Efficiencies for room spaces with heights > 10 m		29
Annex B (informative) Equivalent increase in internal temperature - adapted from the French regulation RT2005		31

B.1	General	31
B.2	Zones	31
B.3	Spatial variation of temperature due to stratification	31
B.4	Variation of temperature due to control	32
Annex C (informative) Auxiliary energy		34
C.1	General	34
C.2	Large indoor space buildings (h > 4 m)	35
Bibliography		38