

DIN EN 13725:2022-06 (E)

Stationary source emissions - Determination of odour concentration by dynamic olfactometry and odour emission rate

Contents		Page
European foreword		4
1	Scope	5
2	Normative references	6
3	Terms and definitions	6
3.1	Terms and definitions for olfactometry	7
3.2	Terms and definitions for sampling	13
3.3	Terms and definitions for metrology and statistics	16
4	Symbols and abbreviated terms	22
5	Principle of method	24
5.1	Odour measurement: odorant gas sampling and odour analysis	24
5.2	Odorant gas sampling	24
5.3	Determination of odour concentration	25
6	Apparatus and materials	28
6.1	General properties of materials	28
6.2	Sampling equipment	28
6.3	Sample container	29
6.4	Gases	30
6.5	Dilution apparatus	31
6.6	Environment for observations by assessors	33
6.7	Panel	34
7	Performance characteristics and criteria	36
7.1	General	36
7.2	Accuracy - statistical model	37
7.3	Overall sensory quality requirements	37
7.4	Quality requirements for dilution apparatus	40
8	Measurement objective and measurement plan	44
8.1	General	44
8.2	Preliminary investigation	44
8.3	Measurement plan	44
9	Measurement procedure	45
9.1	Sampling	45
9.2	Sampling of a point source	50
9.3	Sampling of area sources	50
9.4	Olfactometric analysis	55
9.5	Occupational safety for sampling personnel, assessors and olfactometry operators	57
9.6	Validation and calculation of results	60
10	Quality assurance and quality control procedures	62
10.1	Field blank	62
10.2	Measurement uncertainty	63
10.3	Determination of the limit of detection (LoD) and the limit of quantification (LoQ)	69

11	Measurement records and report	71
11.1	General	71
11.2	Records and reporting for emission sampling	71
11.3	Records and reporting for odour concentration measurement	72
Annex A (informative)	Physiological principles	74
Annex B (informative)	Example of calculation of instrumental accuracy and instability	78
Annex C (informative)	Example of calculation of odour measurements within one laboratory	81
Annex D (informative)	Example of calculations for panel selection	83
Annex E (informative)	Example of the calculation of the odour concentration from a set of panel member responses	85
Annex F (informative)	Example of the calculation used to determine the number of odour concentration measurements required to achieve a defined precision	89
Annex G (informative)	Example of the calculation used to determine the number of odour concentration measurements required to determine a difference between two means	91
Annex H (informative)	Example of the calculation of the odour flow rate (standard conditions) for a wet emission	94
Annex I (informative)	Example of the calculation of an SROM value for a new defined odorant from an EROM comparison	95
Annex J (informative)	Example of the calculation of measurement uncertainty	105
Annex K (informative)	Dynamic dilution apparatus for sampling	113
Annex L (informative)	Considerations for the interpretation of the odour concentration concept for air quality management	116
Annex M (informative)	Sampling of passive area sources	117
Annex N (informative)	Significant technical changes	119
Bibliography		123