

# 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

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