

Focus on IFA's work

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Tracer gas measurements for the assessment of HVAC measures

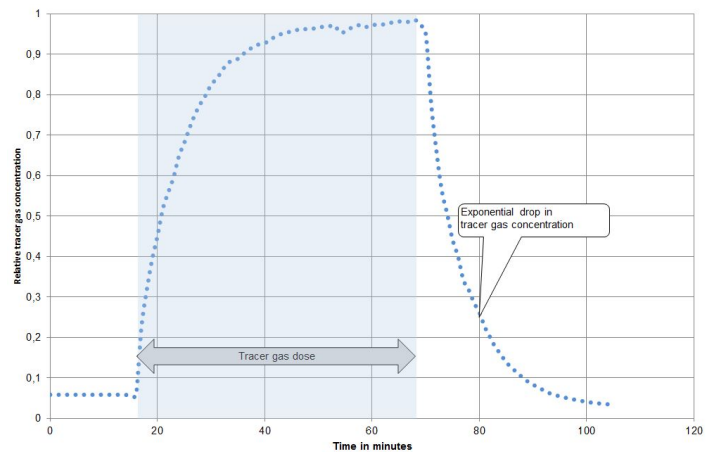
Problem

Employees are exposed at many workplaces to hazardous substances in the atmosphere. HVAC measures (exhaust, room ventilation) are required in order to reduce the hazards. The effectiveness of these measures must be assessed.

The transport of hazardous substances through the air can be simulated by the addition of indicator gases (tracer gas measurement). Based upon parameters obtained from concentration characteristics, the HVAC arrangement can be assessed, and selective measures for improvement taken if necessary.

Activities

The tracer gas measurement system, comprising up to six analysers for sulphur hexafluoride and a central metering and data recording station, is suitable for mobile use. The concentrations measured on the analysers are supplied to the central station by wireless data transmission. The system is therefore suitable for use in a harsh industrial environment.



Concentration characteristic of a tracer gas measurement

Results and Application

The system can be used for assessment and evaluation of room ventilation systems, and for studies of the dissipation of hazardous substances and the effectiveness of hazardous substance capture facilities.

The characteristic shown in the illustration enables parameters for the effectiveness of the HVAC measures to be calculated and assessed. Any necessary improvements to the HVAC measures can then be undertaken selectively.

Area of Application

German Statutory Accident Insurance Institutions

Additional Information

- Eickmann, U.; Böckler, M.; Dahmann, D.; Fehlauer, M.; Fries, H.-G.; Goergens, U.; Kleine, H.; Küter, B.; Pfeiffer, W.; Polanz, O.; Seitz, M.; Stockmann, R.; Waldinger, C.; Werner, W.; Wilms, V.; Zier, B.: Berechnungsverfahren und Modellbildung in der Arbeitsbereichsanalyse. BIA-Report 3/2001. Hrsg.: Hauptverband der gewerblichen Berufsgenossenschaften (HVBG), Sankt Augustin 2001
www.dguv.de/webcode/d6550
- Raatschen, W.: Tracergasmessungen in der Gebäudetechnik: Luftaustausch – Messung und Simulation. gi – Gesundheitsingenieur 116 (1995) Nr. 2, S. 78-87 und 3, S. 129-138

Expert Assistance

IFA, Division 3: Hazardous substances: handling – protective measures

Literature Requests

IFA, Central Division