

Check list for the air quality forecast

Title:

Version No.:

Author:

Date:

Check list completed by:

Check list date:

Section of VDI 3783 Part 13	Check point	Not appli- cable	Exists	Section/ page of the expert report
4.1	Task			
4.1.1	General details given		<input type="checkbox"/>	
	Project described		<input type="checkbox"/>	
	Purpose of air quality forecast discussed		<input type="checkbox"/>	
	Utilised programmes and versions listed		<input type="checkbox"/>	
4.1.2	Assessment principles presented		<input type="checkbox"/>	
4.2	Local conditions			
	Site visit documented		<input type="checkbox"/>	
4.2.1	Site map available		<input type="checkbox"/>	
	Terrain structure (orography) described		<input type="checkbox"/>	
4.2.2	Pattern of utilisation described (including any particularities)		<input type="checkbox"/>	
	Relevant locations of air pollution identified by subjects of protection (e.g. human, vegetation, soil)		<input type="checkbox"/>	
4.3	Description of the plant			
	Plant described		<input type="checkbox"/>	
	Emission source plan included		<input type="checkbox"/>	
4.4	Determination of the stack height			
4.4.1	When constructing new stacks, when modifying existing stacks, when combining emissions of adjacent stacks: determination of stack height according to TA Luft documented, including determination of emissions for nomogram	<input type="checkbox"/>	<input type="checkbox"/>	
	If stack height determined: surrounding build- ings, vegetation and unevenness of terrain con- sidered	<input type="checkbox"/>	<input type="checkbox"/>	
4.4.3	For odours: stack height determined by disper- sion calculation	<input type="checkbox"/>	<input type="checkbox"/>	
4.5	Sources and emissions			
4.5.1	Source structure (point, line, area, volume sources) described		<input type="checkbox"/>	
	Coordinates, extent and orientation as well as height (lower edge) of sources listed in tabular form		<input type="checkbox"/>	
4.5.2	When combining sources to form substitute source: suitability of approach justified	<input type="checkbox"/>	<input type="checkbox"/>	
4.5.3	Emissions described		<input type="checkbox"/>	
	Emission parameters evaluated with respect to their suitability		<input type="checkbox"/>	
	Emission parameters listed in tabular form		<input type="checkbox"/>	
4.5.3.1	For deployment of temporally varying emis- sions: temporal characteristics of the emission parameters explained	<input type="checkbox"/>	<input type="checkbox"/>	
	For deployment of wind-induced sources: ap- proach justified	<input type="checkbox"/>	<input type="checkbox"/>	

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4.5.3.2	For deployment of plume rise: conditions for consideration of plume rise checked (source height, speed of exhaust air, environment, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	
4.5.3.3	When considering dusts: distribution of particle size class indicated	<input type="checkbox"/>	<input type="checkbox"/>	
4.5.3.4	When considering nitrogen oxides: breakdown in nitrogen monoxide and nitrogen dioxide emissions carried out	<input type="checkbox"/>	<input type="checkbox"/>	
	If nitrogen monoxide is specified: conversion to nitrogen dioxide considered	<input type="checkbox"/>	<input type="checkbox"/>	
4.5.4	Summarising table of all emissions available		<input type="checkbox"/>	
4.6	Deposition			
	Explained whether deposition calculation is required or not		<input type="checkbox"/>	
	If deposition calculation is required: legal requirements (e.g. TA Luft) listed	<input type="checkbox"/>	<input type="checkbox"/>	
	When considering deposition: deposition velocities documented	<input type="checkbox"/>	<input type="checkbox"/>	
4.7	Meteorological data			
	Meteorological database described		<input type="checkbox"/>	
	When using transferred data: station name, height above mean sea level (MSL), anemometer height, coordinates and height above ground of the utilised anemometer position, measurement period indicated	<input type="checkbox"/>	<input type="checkbox"/>	
	For on-site measurements: coordinates and height above ground, type of instrument, measurement period, data acquisition and evaluation described	<input type="checkbox"/>	<input type="checkbox"/>	
	For on-site measurements: map and photos of location provided	<input type="checkbox"/>	<input type="checkbox"/>	
	Frequency distribution of wind directions (wind rose) graphically represented		<input type="checkbox"/>	
	For dispersion class statistics (DCS): annual mean of the wind speed and frequency distribution relating to TA Luft stages and fraction of hours indicated with $< 1,0 \text{ m} \cdot \text{s}^{-1}$	<input type="checkbox"/>	<input type="checkbox"/>	
4.7.1	Spatial representativeness of measurements justified for computational domain		<input type="checkbox"/>	
	For transfer check: method indicated and described, if necessary	<input type="checkbox"/>	<input type="checkbox"/>	
4.7.2	For DCS: temporal representativeness justified	<input type="checkbox"/>	<input type="checkbox"/>	
	For annual time series: selection of year of time series justified	<input type="checkbox"/>	<input type="checkbox"/>	
4.7.3	Effects of local wind systems (mountain/valley breezes, land/sea breezes, cold air drainage) discussed		<input type="checkbox"/>	
	If there is considerable impact from local wind systems: impact taken into account	<input type="checkbox"/>	<input type="checkbox"/>	
4.8	Computational domain			
4.8.1	For stacks: TA Luft computational domain: radius at least $50 \times$ the maximum stack construction height	<input type="checkbox"/>	<input type="checkbox"/>	
	For odours: size adapted to relevant use (residential/mixed-use/commercial area, outskirt area)	<input type="checkbox"/>	<input type="checkbox"/>	

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	For stacks: horizontal mesh size of the computational domain not exceeding stack construction height (according to TA Luft)	<input type="checkbox"/>	<input type="checkbox"/>	
4.8.2	For roughness length from CORINE Land Cover Inventory: suitability of value checked	<input type="checkbox"/>	<input type="checkbox"/>	
	For roughness length from own specification: suitability justified	<input type="checkbox"/>	<input type="checkbox"/>	
4.9	Complex terrain			
4.9.2	Check for existing or planned buildings whose distance from the source is less than six times the building height: necessity for consideration of effects of buildings derived from this		<input type="checkbox"/>	
	When considering buildings: approach documented in detail	<input type="checkbox"/>	<input type="checkbox"/>	
	When using a wind field model: location of calculation grids and gridded base areas of buildings represented	<input type="checkbox"/>	<input type="checkbox"/>	
4.9.3	Given uneven terrain: terrain gradient and differences in height with respect to emission location checked and documented	<input type="checkbox"/>	<input type="checkbox"/>	
	Necessity for consideration of unevenness of terrain derived from terrain gradient and differences in height	<input type="checkbox"/>	<input type="checkbox"/>	
	When considering unevenness of terrain: approach described in detail	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Statistical certainty			
	Statistical uncertainty of the given ambient air characteristics indicated		<input type="checkbox"/>	
4.11	Representation of the results			
4.11.1	Results cartographically represented, scale bar, legend, north direction identified		<input type="checkbox"/>	
	Ambient air quality relevant for assessment contained in map section	<input type="checkbox"/>	<input type="checkbox"/>	
	Suitably scaled representation of results available		<input type="checkbox"/>	
4.11.2	For appropriate task: results for the relevant locations of air pollution listed in tabular form	<input type="checkbox"/>	<input type="checkbox"/>	
4.11.3	Results of calculations described verbally		<input type="checkbox"/>	
4.11.4	Records of computational runs attached		<input type="checkbox"/>	
4.11.5	Measurement reports used, technical rules, ordinances and literature and external expert reports, input data, quotations from other documents fully indicated		<input type="checkbox"/>	