

Appendix AQ9

criteria for assessing offensive or objectionable dispersal or deposition of smoke particles

AQ9.1 Nelson City Council enforcement officers, for the purposes of assessing compliance with permitted activity conditions, resource consent conditions, or sections 17(3)(a), 314(1)(a)(ii) or 322(1)(a)(ii) of the RMA, will consider the following matters when determining whether or not a discharge of smoke particles from a combustion source has caused an objectionable or offensive effect:

- i) the **frequency** of smoke nuisance events, and
- ii) the **intensity** of events, as indicated by quantity of smoke produced and the degree of nuisance, and
- iii) the **duration** of each smoke nuisance event, and
- iv) the **offensiveness** of the discharge, having regard to the nature of the smoke, including soiling of materials and structures, any health effects, and odour, and
- v) the **location** of the smoke nuisance, having regard to the sensitivity (including reverse sensitivity) of the receiving environment.

AQ9.2 Note: odour may be associated with the smoke discharge and should also be considered in terms of Appendix AQ10. For a description of reverse sensitivity, also refer to AQ10.1.2.

AQ9.3 Assessment will be based on the combined impact (i) to (v) above, determined by some or all of the following sources. (It will not be necessary to consider all the listed matters in items (a) to (h) in every case).

- a) Other validated smoke complaints or events relating to excessive smoke discharges from the same site, including previous validated complaints from one location. Whether Council enforcement officers have previously given advice on addressing excessive smoke production to the site owner or operator of the combustion source will also be taken into account.
- b) Weather conditions at the time of the smoke nuisance event, particularly wind direction.
- c) Information regarding operational conditions that may have caused the excessive smoke discharge. The effectiveness of control measures used to minimise smoke emissions will be taken into account. Consideration will be given to the extent to which good practice guidance was followed, including:
 - i) outdoor burning:
 - a) the Guide to Outdoor Burning, Appendix AQ8

- ii) large scale fuel burning appliances:
 - a) operation according to manufacturer's instructions and any relevant codes of practice (such as the CRL Environmental Code of Practice for Coal Fired Boilers under 5 MW Capacity), and
 - b) compliance with minimum fuel quality specifications, including: moisture content of wood; ash and fines content of coal; sulphur content (relating to odour and potential health effects), and
 - c) frequency of equipment maintenance, including ash removal, adjustment of the fuel to air ratio and testing of combustion gases or compression ratio/power output (as appropriate), and
 - d) the results of any measurements of the concentration of suspended particulate in the combustion gas, and
 - e) compliance with minimum stack height and design requirements.
- iii) small scale fuel burning devices:
 - a) compliance with any minimum fuel quality specifications, where relevant, including: moisture content of wood; ash and fines content of coal; sulphur content (relating to odour and potential health effects). For wood, regard will be had to where and how the wood is stored, and whether the method of storage is considered capable of yielding wood of the moisture content specified in the plan rules, and
 - b) compliance with minimum chimney height and design requirements, and
 - c) compliance with any minimum suspended particulate emission criteria for the fuel burning device (as specified in Appendix AQ2), and
 - d) operation of solid fuel burning appliances for extended periods at 'low burn' such that the fire smoulders (this is not regarded as good practice and can result in excessive smoke emissions), and
 - e) the age and capability of the fuel burning device, and level of smoke production that might be reasonably expected from such a device if appropriately operated, and
 - f) the requirement to take all reasonable steps to minimise the production of 'excess smoke'.
- d) The duration of observed smoke emissions from the chimney or fire, having regard to the following guidelines:
 - i) large scale fuel burning equipment:
 - a) solid fuel burning – dark smoke (darker than Ringelmann Shade No.1) for more than 30 minutes in the case of a cold start and more than two minutes during each succeeding hour of operation.
 - b) gas and oil burning equipment - dark smoke (darker than Ringelmann Shade No.1) for more than two minutes during each hour of operation.
 - ii) small scale fuel burning devices:
 - a) dark smoke (darker than Ringelmann Shade No.1) for more than 15 minutes in the case of a cold start and more than five minutes during each succeeding hour of operation.

- e) Is a complaints register held at the site? In the case of large scale fuel burning equipment or frequent outdoor burning, the Council may require the discharger to keep such a register and identify any cause of an alleged smoke nuisance, including remedial action taken. Some existing consents include conditions requiring that such a register be kept.
- f) Contents of smoke diaries held by people living and working in the affected area. If significant ongoing nuisance occurs, people may be requested to keep such a diary. The diaries would record details of any smoke nuisance event, including the date and time of the event, weather conditions (wind speed and direction) at that time, a description of the effect detected, and the duration of the smoke event.
- g) Results of a public survey or field investigation commissioned by Nelson City Council or the discharger. In this case it is critical that the survey or investigation is professionally designed to ensure that credible and reliable information is gathered.
- h) Collection of deposited particle samples and analysis to identify source (where necessary and appropriate).

AQ9.4 Explanatory Note

The extent of smoke nuisance should be determined from all available evidence relating to one or more events. In most cases the information specified in items (e) to (h) (complaints register, diaries, surveys and analysis of samples) will not be necessary. Ideally, good practice control measures will be implemented by the discharger to remedy objectionable or offensive effects without the need for expensive investigation. However, for ongoing discharges with potential for significant nuisance or where enforcement action is likely to be required, some or all of the techniques discussed in items (e) to (h) may be required.