

Best Available Technologies (BAT)

Mixlance has significant expertise in developing Best Available Techniques (BAT) in the Asphalt industry.

The European Asphalt Pavement Association (EAPA) has developed European-wide [recommendations](#) for Best Available Techniques (BAT) in the Asphalt industry.

Mixlance has developed new BAT techniques and technologies, which significantly improve upon those EAPA European-wide recommendations:

1. The Mixlance modular asphalt batch-heater has been designed and equipped in order to exceed all the EAPA European-wide recommended Best Available Techniques values.
2. Mixlance are developing an optimisation package for existing stationary asphalt plants to upgrade them to exceed all the EAPA European-wide recommended BAT values.
3. Mixlance process controllers optimise plant performance, thus reduce measurement frequency
4. Mixlance BAT reduces particulate emissions to lower than 10 mg/Nm^3 (*EAPA = 20-100 mg/Nm³*)
5. Mixlance BAT reduces SOx emissions to lower than 50 mg/Nm^3 (*EAPA = 500 mg/Nm³*).
6. Mixlance BAT reduces NOx emissions to lower than 50 mg/Nm^3 (*EAPA = 500 mg/Nm³*).
7. Mixlance BAT reduces CO and CO₂ emissions by reducing electricity usage by up to 75%, and reducing oil and gas usage by up to 30%.
8. Mixlance BAT reduces PAH¹ emissions, by optimising the burn temperature thus minimising incomplete combustion, when recycling tar-containing materials.
9. Mixlance BAT reduces the risk of offensive odour outside the plant boundary, by efficient combustion and effective filtration.
10. Mixlance BAT reduces dust emissions to lower than 10 mg/Nm^3 (*standard = 100 mg/Nm³*).
11. Mixlance BAT reduces operating noise levels to <40 dB(A) during working hours.
12. Mixlance BAT preventative measures prevent ground and ground water contamination.
13. Mixlance BAT increases the proportion of mixed recycled materials used to produce road-stone coating to 50% (*currently 10 %*).
14. Mixlance BAT reduces visual impact by reducing the plant height to 12 m (*currently 25 m*), and by reducing the site area required to 20 m^2 (*currently 120 m²*).

¹ PAHs are formed by incomplete combustion of carbon-containing fuels such as diesel, oil, tar, bitumen and coal. Many PAHs are known or suspected carcinogens. Polycyclic aromatic hydrocarbons (PAHs), are chemical compounds that consist of fused aromatic rings and that do not contain heteroatoms and do not carry substituents.

Best Available Technologies (BAT)

As part of European Commission's 5th Environmental Action Programme industries are encouraged to work to self-regulatory "Best Available Techniques" (BAT).

The asphalt industry (EAPA) has established agreed [BAT guidelines](#) for reference for environmental auditing and compliance reporting to licensing authorities and to give greater consistency throughout the industry between all European countries.

EAPA Recommendations

1. New stationary asphalt plants should be designed, equipped and operated to the guideline values set out below.
2. Existing stationary asphalt plants should be considered for phased upgrading where economically achievable to the levels appropriate for new plants.
3. Future standards should recognise that good process controls will not only optimise plant performance, but also reduce the frequency of measurements.
4. Stack particulate emissions should be 20-100 mg/Nm³ (according to CEN measure standard).
5. SOx emissions should be significantly less than 500 mg/Nm³.
6. NOx emissions should be significantly less than 500 mg/Nm³.
7. CO and CO₂ emissions vary according to the type of fuel used and the burner installation. However both can be optimised by good plant operation and by temperature control.
8. Exercise prudence to limit PAH² emissions when recycling tar-containing materials.
9. Stack height should provide sufficient dispersion of the emissions to keep emission levels within acceptable limits. All practical steps should be taken in plant operation to ensure that there is no offensive odour outside the plant boundary or at the nearest dwellings.
10. Plant design and operation should ensure that fugitive dust emissions do not cause nuisance outside the plant boundary or at the nearest dwelling.
11. Operating noise levels should not cause nuisance at the nearest dwellings. Values are 65 dB(A) during working hours, and 55 dB(A) at other times (expressed as Leq over 8 hours).
12. Preventative measures to prevent ground or ground water contamination.
13. All incidental wastes should be minimised, or recycled, stored and disposed of according to good practice.
14. Maximise visual amenity by appropriate landscaping, screening or enclosure of plant.
15. Communications with neighbours should be encouraged.

² PAHs are formed by incomplete combustion of carbon-containing fuels such as diesel, oil, tar, bitumen and coal. Many PAHs are known or suspected carcinogens. Polycyclic aromatic hydrocarbons (PAHs), are chemical compounds that consist of fused aromatic rings and that do not contain heteroatoms and do not carry substituents.