

Commission Implementing Decision (EU) 2016/1032 of 13 June 2016 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the non-ferrous metals industries (notified under document C(2016) 3563) (Text with EEA relevance)

- Article 1 The best available techniques (BAT) conclusions for the non-ferrous metals...
- Article 2 This Decision is addressed to the Member States.
Signature

ANNEX

BAT CONCLUSIONS FOR THE NON-FERROUS METALS INDUSTRIES

SCOPE

DEFINITIONS

GENERAL CONSIDERATIONS

- Best Available Techniques
- Emission levels to air associated with BAT
- Averaging periods for emissions to air
- Averaging periods for emissions to water

ACRONYMS

1.1. GENERAL BAT CONCLUSIONS

- 1.1.1. Environmental management systems (EMS)
 - BAT 1. In order to improve the overall environmental performance, BAT is...
Applicability
- 1.1.2. Energy management
 - BAT 2. In order to use energy efficiently, BAT is to use...
- 1.1.3. Process control
 - BAT 3. In order to improve overall environmental performance, BAT is to...
 - BAT 4. In order to reduce channelled dust and metal emissions to...
- 1.1.4. Diffuse emissions
 - 1.1.4.1. General approach for the prevention of diffuse emissions
 - BAT 5. In order to prevent or, where this is not practicable,...
 - BAT 6. In order to prevent or, where this is not practicable,...
 - 1.1.4.2. Diffuse emissions from the storage, handling and transport of raw...
 - BAT 7. In order to prevent diffuse emissions from the storage of...
Applicability
 - BAT 8. In order to prevent diffuse emissions from the handling and...
Applicability
 - 1.1.4.3. Diffuse emissions from metal production
 - BAT 9. In order to prevent or, where this is not practicable,...
- 1.1.5. Monitoring of emissions to air

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- BAT 10. BAT is to monitor the stack emissions to air with...
- 1.1.6. Mercury emissions
 - BAT 11. In order to reduce mercury emissions to air (other than...
- 1.1.7. Sulphur dioxide emissions
 - BAT 12. In order to reduce emissions of SO₂ from off-gases with...
Applicability
- 1.1.8. NOX emissions
 - BAT 13. In order to prevent NOX emissions to air from a...
- 1.1.9. Emissions to water, including their monitoring
 - BAT 14. In order to prevent or reduce the generation of waste...
 - BAT 15. In order to prevent the contamination of water and to...
Applicability
 - BAT 16. BAT is to use ISO 5667 for water sampling and...
 - BAT 17. In order to reduce emissions to water, BAT is to...
BAT-associated emission levels
- 1.1.10. Noise
 - BAT 18. In order to reduce noise emissions, BAT is to use...
- 1.1.11. Odour
 - BAT 19. In order to reduce odour emissions, BAT is to use...
- 1.2. BAT CONCLUSIONS FOR COPPER PRODUCTION
 - 1.2.1. Secondary materials
 - BAT 20. In order to increase the secondary materials' recovery yield from...
 - 1.2.2. Energy
 - BAT 21. In order to use energy efficiently in primary copper production,...
 - BAT 22. In order to use energy efficiently in secondary copper production,...
 - BAT 23. In order to use energy efficiently in electrorefining and electrowinning...
 - 1.2.3. Air emissions
 - BAT 24. In order to reduce secondary emissions to air from furnaces...
Description
Applicability
 - 1.2.3.1. Diffuse emissions
 - BAT 25. In order to prevent or reduce diffuse emissions from pretreatment...
 - BAT 26. In order to prevent or reduce diffuse emissions from charging,...
 - BAT 27. In order to reduce diffuse emissions from Peirce-Smith converter (PS)...
 - BAT 28. In order to reduce diffuse emissions from a Hoboken converter...
 - BAT 29. In order to reduce diffuse emissions from the matte conversion...
Applicability
 - BAT 30. In order to reduce diffuse emissions from a top-blown rotary...
 - BAT 31. In order to reduce diffuse emissions from copper recovery with...
 - BAT 32. In order to reduce diffuse emissions from copper-rich slag furnace...
 - BAT 33. In order to reduce diffuse emissions from anode casting in...
 - BAT 34. In order to reduce diffuse emissions from electrolysis cells, BAT...
 - BAT 35. In order to reduce diffuse emissions from the casting of...

- BAT 36. In order to reduce diffuse emissions from non-acid and acid...
- 1.2.3.2. Channelled dust emissions
 - BAT 37. In order to reduce dust and metal emissions to air...
 - BAT 38. In order to reduce dust and metal emissions to air...
Applicability
 - BAT 39. In order to reduce dust and metal emissions to air...
 - BAT 40. In order to reduce dust and metal emissions to air...
 - BAT 41. In order to reduce dust and metal emissions to air...
 - BAT 42. In order to reduce dust and metal emissions to air...
 - BAT 43. In order to reduce dust and metal emissions to air...
 - BAT 44. In order to reduce dust and metal emissions to air...
 - BAT 45. In order to reduce dust and metal emissions to air...
- 1.2.3.3. Organic compound emissions
 - BAT 46. In order to reduce organic compound emissions to air from...
 - BAT 47. In order to reduce organic compound emissions to air from...
 - BAT 48. In order to reduce PCDD/F emissions to air from the...
- 1.2.3.4. Sulphur dioxide emissions
 - BAT 49. In order to reduce SO₂ emissions (other than those that...
- 1.2.3.5. Acid emissions
 - BAT 50. In order to reduce acid gas emissions to air from...
- 1.2.4. Soil and groundwater
 - BAT 51. In order to prevent soil and groundwater contamination from copper...
 - BAT 52. In order to prevent soil and groundwater contamination from the...
- 1.2.5. Waste water generation
 - BAT 53. In order to prevent the generation of waste water from...
- 1.2.6. Waste
 - BAT 54. In order to reduce the quantities of waste sent for...
- 1.3. BAT CONCLUSIONS FOR ALUMINIUM PRODUCTION INCLUDING ALUMINA AND ANODE PRODUCTION...
 - 1.3.1. Alumina production
 - 1.3.1.1. Energy
 - BAT 55. In order to use energy efficiently during the production of...
 - 1.3.1.2. Air emissions
 - BAT 56. In order to reduce dust and metal emissions from alumina...
 - 1.3.1.3. Waste
 - BAT 57. In order to reduce the quantities of waste sent for...
 - 1.3.2. Anode production
 - 1.3.2.1. Air emissions
 - 1.3.2.1.1. Dust, PAH and fluoride emissions from the paste plant
 - BAT 58. In order to reduce dust emissions to air from a...
 - BAT 59. In order to reduce dust and PAH emissions to air...
 - 1.3.2.1.2. Dust, sulphur dioxide, PAH and fluoride emissions from the baking...
 - BAT 60. In order to reduce dust, sulphur dioxide, PAH and fluoride...
 - BAT 61. In order to reduce dust, PAH and fluoride emissions to...
 - 1.3.2.2. Waste water generation
 - BAT 62. In order to prevent the generation of waste water from...
Applicability
 - 1.3.2.3. Waste
 - BAT 63. In order to reduce the quantities of waste sent for...

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- Applicability
- 1.3.3. Primary aluminium production
- 1.3.3.1. Air emissions
- BAT 64. In order to prevent or collect diffuse emissions from electrolytic...
- Description
- BAT 65. In order to prevent or collect diffuse emissions from electrolytic...
- Applicability
- 1.3.3.1.1. Channelled dust and fluoride emissions
- BAT 66. In order to reduce dust emissions from the storage, handling...
- BAT 67. In order to reduce dust, metal and fluoride emissions to...
- 1.3.3.1.2. Total emissions of dust and fluorides
- BAT 68. In order to prevent or reduce dust and metal emissions...
- 1.3.3.1.3. Sulphur dioxide emissions
- BAT 69. In order to reduce emissions to air from electrolytic cells,...
- Description
- 1.3.3.1.4. Perfluorocarbon emissions
- BAT 70. In order to reduce perfluorocarbon emissions to air from primary...
- Description
- 1.3.3.1.5. PAH and CO emissions
- BAT 71. In order to reduce CO and PAH emissions to air...
- 1.3.3.2. Waste water generation
- BAT 72. In order to prevent the generation of waste water, BAT...
- Applicability
- 1.3.3.3. Waste
- BAT 73. In order to reduce the disposal of spent pot lining,...
- 1.3.4. Secondary aluminium production
- 1.3.4.1. Secondary materials
- BAT 74. In order to increase the raw materials' yield, BAT is...
- 1.3.4.2. Energy
- BAT 75. In order to use energy efficiently, BAT is to use...
- 1.3.4.3. Air emissions
- BAT 76. In order to prevent or reduce emissions to air, BAT...
- Applicability
- 1.3.4.3.1. Diffuse emissions
- BAT 77. In order to prevent or reduce diffuse emissions from the...
- BAT 78. In order to prevent or reduce diffuse emissions from the...
- Description
- BAT 79. In order to reduce emissions from skimmings/dross treatment, BAT is...
- 1.3.4.3.2. Channelled dust emissions
- BAT 80. In order to reduce dust and metal emissions from the...
- BAT 81. In order to reduce dust and metal emissions to air...
- BAT 82. In order to reduce dust and metal emissions to air...
- 1.3.4.3.3. Organic compound emissions

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- BAT 83. In order to reduce emissions to air of organic compounds...
- 1.3.4.3.4. Acid emissions
 - BAT 84. In order to reduce emissions to air of HCl, Cl₂...
Description
- 1.3.4.4. Waste
 - BAT 85. In order to reduce the quantities of waste sent for...
 - BAT 86. In order to reduce the quantities of salt slag produced...
- 1.3.5. Salt slag recycling process
 - 1.3.5.1. Diffuse emissions
 - BAT 87. In order to prevent or reduce diffuse emissions from the...
 - 1.3.5.2. Channelled dust emissions
 - BAT 88. In order to reduce dust and metal emissions to air...
 - 1.3.5.3. Gaseous compounds
 - BAT 89. In order to reduce gaseous emissions to air from wet...
- 1.4. BAT CONCLUSIONS FOR LEAD AND/OR TIN PRODUCTION
 - 1.4.1. Air emissions
 - 1.4.1.1. Diffuse emissions
 - BAT 90. In order to prevent or reduce diffuse emissions from preparation...
 - BAT 91. In order to prevent or reduce diffuse emissions from material...
 - BAT 92. In order to prevent or reduce diffuse emissions from charging,...
 - BAT 93. In order to prevent or reduce diffuse emissions from remelting,...
 - 1.4.1.2. Channelled dust emissions
 - BAT 94. In order to reduce dust and metal emissions to air...
 - BAT 95. In order to reduce dust and metal emissions to air...
 - BAT 96. In order to reduce dust and metal emissions to air...
 - BAT 97. In order to reduce dust and metal emissions to air...
 - 1.4.1.3. Organic compound emissions
 - BAT 98. In order to reduce emissions of organic compounds to air...
 - BAT 99. In order to reduce PCDD/F emissions to air from the...
 - 1.4.1.4. Sulphur dioxide emissions
 - BAT 100. In order to prevent or reduce SO₂ emissions to air...
Description
 - 1.4.2. Soil and groundwater protection
 - BAT 101. In order to prevent the contamination of soil and groundwater...
 - 1.4.3. Waste water generation and treatment
 - BAT 102. In order to prevent the generation of waste water from...
 - BAT 103. In order to reduce emissions to water from battery preparation...
 - 1.4.4. Waste
 - BAT 104. In order to reduce the quantities of waste sent for...
 - BAT 105. In order to allow the recovery of the polypropylene and...
Applicability
 - BAT 106. In order to reuse or recover the sulphuric acid collected...
 - BAT 107. In order to reduce the quantities of waste sent for...
- 1.5. BAT CONCLUSIONS FOR ZINC AND/OR CADMIUM PRODUCTION
 - 1.5.1. Primary zinc production
 - 1.5.1.1. Hydrometallurgical zinc production
 - 1.5.1.1.1. Energy

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- BAT 108 In order to use energy efficiently, BAT is to recover...
- 1.5.1.1.2 Air emissions
 - 1.5.1.1.2.1 Diffuse emissions
 - BAT 109 In order to reduce diffuse dust emissions to air from...
 - BAT 110 In order to reduce diffuse dust emissions to air from...
 - BAT 111 In order to reduce diffuse emissions to air from leaching,...
 - BAT 112 In order to reduce diffuse emissions to air from electrowinning,...
 - 1.5.1.1.2.2 Channelled emissions
 - BAT 113 In order to reduce dust and metal emissions to air...
 - BAT 114 In order to reduce zinc and sulphuric acid emissions to...
- 1.5.1.1.3 Soil and groundwater protection
 - BAT 115 In order to prevent soil and groundwater contamination, BAT is...
- 1.5.1.1.4 Waste water generation
 - BAT 116 In order to reduce fresh water consumption and prevent the...
- 1.5.1.1.5 Waste
 - BAT 117 In order to reduce the quantities of waste sent for...
 - BAT 118 In order to make the leaching waste suitable for final...
Description
- 1.5.1.2. Pyrometallurgical zinc production
 - 1.5.1.2.1 Air emissions
 - 1.5.1.2.1.1 Channelled dust emissions
 - BAT 119 In order to reduce dust and metal emissions to air...
 - Applicability
 - BAT 120 In order to reduce SO₂ emissions to air (other than...
- 1.5.2. Secondary zinc production
 - 1.5.2.1. Air emissions
 - 1.5.2.1.1 Channelled dust emissions
 - BAT 121 In order to reduce dust and metal emissions to air...
 - BAT 122 In order to reduce dust and metal emissions to air...
 - Applicability
 - 1.5.2.1.2 Organic compound emissions
 - BAT 123 In order to reduce emissions of organic compounds to air...
 - 1.5.2.1.3 Acid emissions
 - BAT 124 In order to reduce emissions of HCl and HF to...
 - 1.5.2.2. Waste water generation and treatment
 - BAT 125 In order to reduce the consumption of fresh water in...
Description
 - BAT 126 In order to prevent or reduce halide emissions to water...
- 1.5.3. Melting, alloying and casting of zinc ingots and zinc powder...
 - 1.5.3.1. Air emissions
 - 1.5.3.1.1 Diffuse dust emissions
 - BAT 127 In order to reduce diffuse dust emissions to air from...

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- 1.5.3.1. Channelled dust emissions
BAT 128 in order to reduce dust and metal emissions to air...
 - 1.5.3.2. Waste water
BAT 129 in order to prevent the generation of waste water from...
 - 1.5.3.3. Waste
BAT 130 in order to reduce the quantities of waste sent for...
 - 1.5.4. Cadmium production
 - 1.5.4.1. Air emissions
 - 1.5.4.1.1. Diffuse emissions
BAT 131 in order to reduce diffuse emissions to air, BAT is...
 - 1.5.4.1.2. Channelled dust emissions
BAT 132 in order to reduce dust and metal emissions to air...
 - 1.5.4.2. Waste
BAT 133 in order to reduce the quantities of waste sent for...
 - 1.6. BAT CONCLUSIONS FOR PRECIOUS METALS PRODUCTION
 - 1.6.1. Air emissions
 - 1.6.1.1. Diffuse emissions
BAT 134 in order to reduce diffuse emissions to air from a...
BAT 135 in order to reduce diffuse emissions to air from smelting...
BAT 136 in order to reduce diffuse emissions to air from leaching...
BAT 137 in order to reduce diffuse emissions from a hydrometallurgical operation,...
 - BAT 138 in order to reduce diffuse emissions to air from incineration,...
 - BAT 139 in order to reduce diffuse emissions to air from the...
 - 1.6.1.2. Channelled dust emissions
BAT 140 in order to reduce dust and metal emissions to air...
 - 1.6.1.3. NOX emissions
BAT 141 in order to reduce NOX emissions to air from a...
 - 1.6.1.4. Sulphur dioxide emissions
BAT 142 in order to reduce SO2 emissions to air (other than...
BAT 143 in order to reduce SO2 emissions to air from a...
 - 1.6.1.5. HCl and Cl2 emissions
BAT 144 in order to reduce HCl and Cl2 emissions to air...
 - 1.6.1.6. NH3 emissions
BAT 145 in order to reduce NH3 emissions to air from a...
 - 1.6.1.7. PCDD/F emissions
BAT 146 in order to reduce PCDD/F emissions to air from a...
 - 1.6.2. Soil and groundwater protection
BAT 147 in order to prevent soil and groundwater contamination, BAT is...
 - 1.6.3. Waste water generation
BAT 148 in order to prevent the generation of waste water, BAT...
 - 1.6.4. Waste
BAT 149 in order to reduce the quantities of waste sent for...
- 1.7. BAT CONCLUSIONS FOR FERRO-ALLOYS PRODUCTION
 - 1.7.1. Energy
BAT 150 in order to use energy efficiently, BAT is to recover...
BAT 151 in order to use energy efficiently, BAT is to recover...
BAT 152 in order to use energy efficiently, BAT is to recover...
Applicability
 - 1.7.2. Air emissions
 - 1.7.2.1. Diffuse dust emissions

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- BAT 153n order to prevent or reduce and collect diffuse emissions...
- 1.7.2.2. Channelled dust emissions
 - BAT 154n order to reduce dust and metal emissions to air...
 - BAT 155n order to reduce dust and metal emissions to air...
 - Applicability
 - BAT 156n order to reduce dust and metal emissions to air...
 - BAT 157n order to reduce dust and metal emissions to air...
 - BAT 158n order to reduce dust and metal emissions to air...
- 1.7.2.3. PCDD/F emissions
 - BAT 159n order to reduce PCDD/F emissions to air from a...
- 1.7.2.4. PAH and organic compound emissions
 - BAT 160n order to reduce PAH and organic compound emissions to...
- 1.7.3. Waste
 - BAT 161n order to reduce the quantities of slag sent for...
 - BAT 162n order to reduce the quantities of filter dust and...
- 1.8. BAT CONCLUSIONS FOR NICKEL AND/OR COBALT PRODUCTION
 - 1.8.1. Energy
 - BAT 163n order to use energy efficiently, BAT is to use...
 - 1.8.2. Air emissions
 - 1.8.2.1. Diffuse emissions
 - BAT 164n order to reduce diffuse dust emissions to air from...
 - BAT 165n order to reduce diffuse dust emissions to air from...
 - BAT 166n order to reduce diffuse dust emissions from converting processes,...
 - BAT 167n order to reduce diffuse emissions from atmospheric and pressure...
 - BAT 168n order to reduce diffuse emissions from solvent extraction refining,...
 - BAT 169n order to reduce diffuse emissions from electrowinning, BAT is...
 - BAT 170n order to reduce diffuse emissions from the hydrogen reduction...
 - 1.8.2.2. Channelled dust emissions
 - BAT 171n When processing sulphidic ores, in order to reduce dust and...
 - 1.8.2.3. Nickel and chlorine emissions
 - BAT 172n order to reduce nickel and chlorine emissions to air...
 - BAT 173n order to reduce nickel emissions to air from the...
 - 1.8.2.4. Sulphur dioxide emissions
 - BAT 174n When processing sulphidic ores, in order to reduce SO2 emissions...
 - 1.8.2.5. NH3 emissions
 - BAT 175n order to reduce NH3 emissions to air from nickel...
 - 1.8.3. Waste
 - BAT 176n order to reduce the quantities of waste sent for...
- 1.9. BAT CONCLUSIONS FOR CARBON AND/OR GRAPHITE PRODUCTION
 - 1.9.1. Air emissions
 - 1.9.1.1. Diffuse emissions
 - BAT 177n order to reduce diffuse PAH emissions to air from...
 - 1.9.1.2. Dust and PAH emissions
 - BAT 178n order to reduce dust emissions to air from the...
 - BAT 179n order to reduce dust and PAH emissions to air...

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- BAT 180n order to reduce dust and PAH emissions to air...
- BAT 181n order to reduce dust and PAH emissions to air...
- 1.9.1.3. Sulphur dioxide emissions
 - BAT 182n order to reduce SO2 emissions to air when there...
- 1.9.1.4. Organic compound emissions
 - BAT 183n order to reduce emissions of organic compounds to air,...
- 1.9.2. Waste
 - BAT 184n order to reduce the quantities of waste sent for...
- 1.10. DESCRIPTION OF TECHNIQUES
 - 1.10.1. Air emissions
 - 1.10.1.1Dust emissions
 - 1.10.1.2NOX emissions
 - 1.10.1.3SO2, HCl, and HF emissions
 - 1.10.1.4Mercury emissions
 - 1.10.1.5VOC, PAH, and PCDD/F emissions
 - 1.10.2. Water emissions
 - 1.10.3. Other

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- (1) [OJ L 334, 17.12.2010, p. 17.](#)
- (2) [OJ C 146, 17.5.2011, p. 3.](#)

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Changes and effects yet to be applied to :

- Art. 2 substituted by [S.I. 2018/1407 reg. 18\(2\)](#)