



EURO STANDARDS

- Euro standards, European emission standards or Euro norms, are a series of regulations and standards set by the European Union (EU) to control the emissions of pollutants from vehicles. These standards are aimed at reducing air pollution and improving air quality, particularly in urban areas.
- Euro standards specify the maximum allowable limits for various pollutants emitted by vehicles, such as carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM), and hydrocarbons (HC). Here's an overview of the Euro standards and their evolution:
 1. **Euro 1 (1992):** The Euro 1 standard was the first set of emission regulations for new cars and light commercial vehicles in the European Union. It primarily targeted carbon monoxide (CO) and hydrocarbon (HC) emissions. It marked a significant step in reducing pollution from vehicles.
 2. **Euro 2 (1996):** Euro 2 introduced stricter limits for CO, HC, and NO_x emissions, further reducing vehicle emissions. It also set standards for diesel engine particulate matter (PM) emissions.
 3. **Euro 3 (2000):** Euro 3 further tightened emissions limits for CO, HC, and NO_x, and it introduced more stringent PM limits for diesel vehicles. It also required the use of on-board diagnostics (OBD) systems to monitor and report emissions-related issues.
 4. **Euro 4 (2005):** Euro 4 imposed even stricter limits on CO, HC, NO_x, and PM emissions. It required the widespread use of advanced technologies like common rail fuel injection for diesel engines and three-way catalytic converters for gasoline engines.
 5. **Euro 5 (2009):** Euro 5 introduced lower NO_x limits for diesel engines, making selective catalytic reduction (SCR) and other advanced exhaust after treatment technologies more common. It also set stricter limits for PM emissions.
 6. **Euro 6 (2014):** Euro 6 standards are the most stringent emission regulations for vehicles in Europe. They significantly reduced NO_x and PM emissions from both gasoline and diesel engines. Euro 6 also introduced Real Driving Emissions (RDE) testing to measure emissions under real-world driving conditions, rather than just in laboratory tests.

7. **Euro 6d-TEMP (2017):** This interim standard required vehicles to meet Euro 6 emissions limits under a wider range of real-world driving conditions, addressing concerns about emissions cheating and discrepancies between laboratory and real-world emissions.
 8. **Euro 6d (2020):** Euro 6d standards represent the latest and strictest emission limits for vehicles. They continue to focus on reducing NO_x and PM emissions, particularly for diesel vehicles. Euro 6d also includes RDE testing and on-road emissions monitoring.
 9. **Euro 7 (expected in the future):** As of my last knowledge update in September 2021, Euro 7 was under development. Euro 7 is expected to further lower emissions limits, particularly for NO_x and greenhouse gases, as part of efforts to combat climate change and improve air quality.
- Euro standards have played a crucial role in reducing vehicle emissions and improving air quality in Europe. They have also driven advancements in automotive technology, leading to cleaner and more efficient vehicles.
 - It's important to note that while the Euro standards apply to Europe, other regions, such as North America and Asia, have their own sets of emission standards (e.g., EPA standards in the United States).