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MAZDA ADOPTS MORE ECO-FRIENDLY PAINTING PROCESS



MAZDA'S NEW E-COATING TECHNOLOGY
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- Mazda's new base coating paint process, co-developed with Nippon Paint Co, substantially reduces both volatile organic compounds and carbon dioxide emissions.
- Combined with a reduction in the overall amount of paint necessary to coat each vehicle, VOC emissions in the painting process are reduced.
- CO2 emissions created during the paint manufacture are reduced.

In collaboration with the Nippon Paint Company, Mazda Motor Corporation has developed a new electrodeposition basecoat, known as e-coating that substantially reduces both volatile organic compounds (VOC) and carbon dioxide (CO2) emissions. Raising Mazda's painting process to a new world standard, e-coating efficiently adheres paint to metal surfaces and raises the rust protection quality of Mazda vehicles.

The launch of this new painting technology began in May 2005 at the Ujina No.2 Plant at Mazda's global headquarters in Hiroshima, and will be extended to all of its main production facilities in Japan by the end of 2005.

Mazda has already completed the introduction of its world-first "Three Layer Wet Paint System" to all of its plants in Japan. The Mazda Three Layer method combines the primer, base and clear coats into one painting process, significantly reducing the burden on the environment. Mazda is aiming to be greener in its manufacturing policies and also improve the rust protection quality of its vehicles with the Three Layer painting system and the new e coating process. By employing these two technologies, Mazda's painting process has advanced to a new level of eco-friendliness.



The introduction of this e-coating technology results in several advantages:

- Lowers VOC emissions that occur during basecoat painting at Mazda's plants in Japan by 32 tons per year, a reduction of 50 per cent.
- Reduces CO2 emissions during paint manufacture by 8.8 tons per year.
- Reduces by 10 per cent the volume of basecoat materials that are necessary compared to previously utilised painting methods.
- Improves rust protection through a more uniform thickness of paint film on the vehicle inner bodies.

Outline of the new e-coating technology

The electrodeposition painting process involves vehicle bodies being immersed in a paint tank, with an electrical current passing through the steel parts causing the paint to adhere to the metal surfaces.

Using an electrical charge facilitates an excellent paint-to-metal bond, and is generally used to help prevent corrosion on all body surfaces. However, with conventional paints, discrepancies in paint film thickness can result between the inside and outside body surfaces because it is difficult for electrical currents to reach all interior parts and form an even paint film on interior surfaces.

The newly developed e-coating has modified paint characteristics that raise the paint's electrical resistance, enabling the electrical current to reach inner surfaces more easily and reducing the amount of electricity used during painting. This provides sufficient paint thickness on inside surfaces and increases rust protection.

Optimal paint thickness is usually achieved on vehicle body outer surfaces because the electrical current flows more easily to exteriors than to internal areas. Prior to the introduction of the new e-coating system, excess paint accumulated on outer surfaces during conventional painting. With e-coating, the thickness is better regulated, allowing for a reduction in the total amount of paint necessary.