

APPLICATION PROFILE

SYMBIOSIS OF PROVIDING HIGHER EFFICIENCY AND ENERGY CONSERVATION

Balancing energy conservation goals with increased economic activity is a duty every company must meet.



Stator of the new Hitachi alternator insulated with Nomex® brand paper.

If you ignore these goals, you are bound to leave the market.

Japanese car electric equipment OEMs recently adopted Nomex® brand paper and achieved the symbiosis of providing higher efficiency and energy conservation.

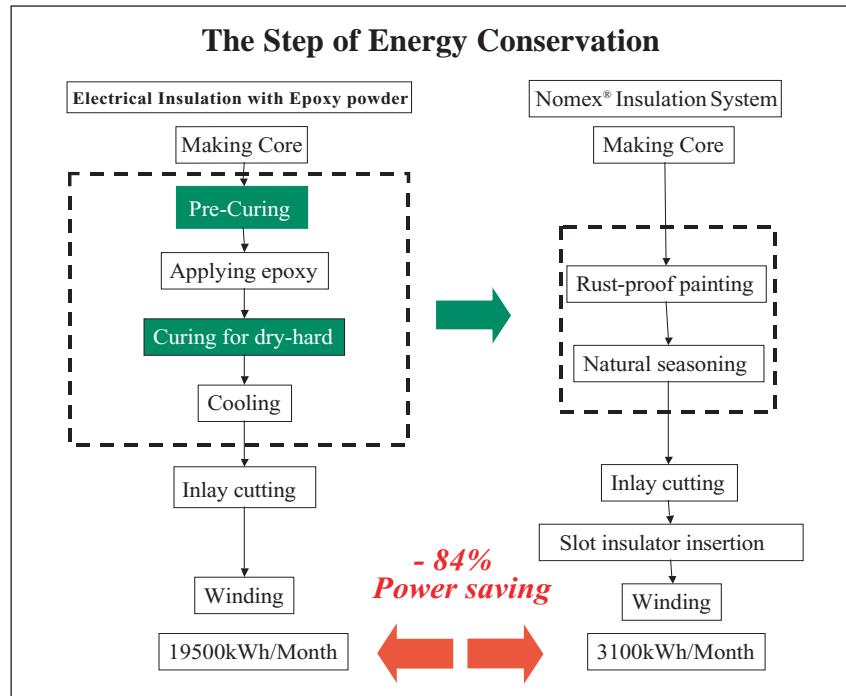
Until recently, epoxy powder coating has been widely used as electrical insulation for automotive electrical components including alternator stator insulation. Epoxy coating of stators is not the only solution; on the contrary it requires a lot of process energy due to the thermoset nature of the epoxies.

Hitachi Ltd. Automotive Products Division succeeded in reducing energy consumption required for alternator production through changing their manufacturing process completely. They decided

to use Nomex® instead of epoxy powder coating, allowing them to avoid the curing process of epoxy stator coating. As a result, they reduced their electric consumption to one-seventh of their old levels (16% of original).

Other benefits were also seen due to this conversion to Nomex® thermal insulation technology, including better insulation uniformity and higher productivity by reducing process time & increasing material yield. Finally, by eliminating the epoxy powder coating, their work area has become dust-free.

In the 21st century, reducing emission greenhouse gases and improving fuel-efficiency is the duty of car industry in order to coexist with the society. In the above case, Hitachi has cut electric consumption corresponding to 52.1kl of petroleum per year. This activity also thus contributed toward reducing CO2



emissions as a company. As a result of this work, "The Energy Conservation Center, Japan", incorporated foundation, recognized Hitachi as a Center Chairman Prize winner in 2000 fiscal year. This reduction will also be very beneficial as Hitachi works towards ISO 14000 compliance.

Hitachi's activity has expanded to Starter motors, smaller and higher power model was released. And the technology is also applied to traction motor of Electric Vehicles. In this symbiosis of seeking higher efficiency and energy conservation, the way the car industry should go drive forward seems clear.

Du Pont de Nemours International S. A.
Advanced Fibres Systems
P. O. Box 50
CH-1218 Le Grand-Saconnex
Geneva, Switzerland
Tel: +41-22-717-5111
Fax: +41-22-717-6218
e-mail: info.nomex@che.dupont.com



Hitachi, Ltd
Automotive Products Division
4-6 Surugadai, Kanda
Chiyoda-ku
Tokyo, Japan
Tel: 81-3-3258-1111
Fax: 81-3-3258-5496
e-mail: info@jiji@hitachi.co.jp

Product safety information is available upon request.

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