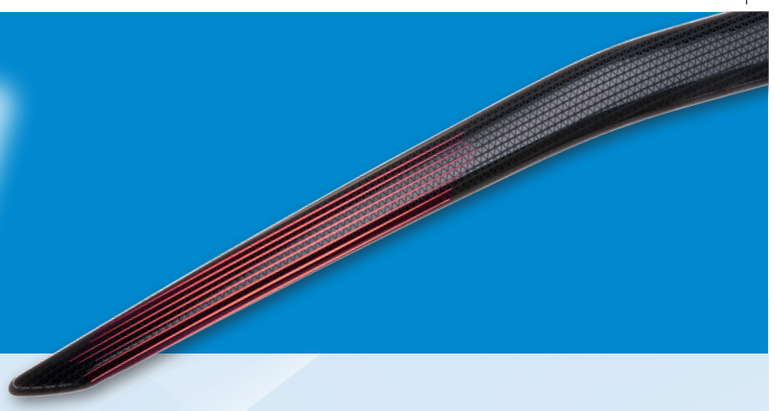
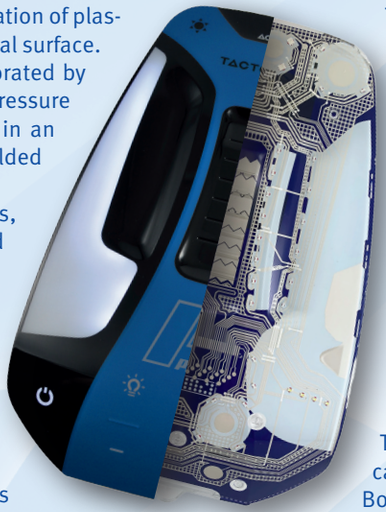
Innovative Inks & Functional Lacquers

Proell, Inc.



IMD/FIM Technology

Film insert molding enables one-step fabrication of plastic components with a decorated or functional surface. In this process, a polycarbonate film, decorated by screen printing on the reverse side, is high pressure formed and trimmed before being placed in an injection mold and back-injected or over-molded with a thermoplastic resin.
Many radio bezels, climate control panels, displays and touch pads are manufactured in film insert molding technology.
Now, the produced automotive interior parts are getting bigger, formed deeper and designed more individually.
Center stacks, dash boards and door trims of many new cars are produced by using the IMD/FIM process.
Due to the development of highly resistant and formable dual cure lacquers, such as **Norilux® DC**, an abrasion and chemical resistant first surface decoration even with haptic structures is possible.

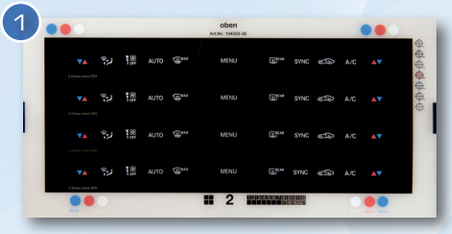


The new BMW 1 Series contains new door trims showing fascinating 3D-optic designs and haptic surface finishes realized by screen printing.

Non-conductive black color shades for printed electronic applications

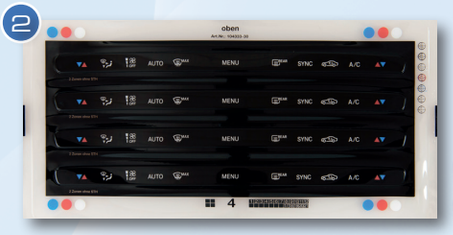
The back-moldable NORIPHAN® IMD/FIM ink systems are perfectly suited for the manufacture of functional parts with integrated printed electronics.
The newly developed one-component color shade **NORIPHAN® HTR N 990/011 NC** has a deep black appearance and is non-conductive due to its formulation without carbon black.
The deep black and opaquely formulated color shade **NORIPHAN® N2K 953** is processed as two-component system. This screen printing ink shows high electrical resistance in capacitive applications.
Both black color shades can be used for overprinting of metallic and polymeric conductive pastes and resist the increased requirements regarding thermal resistance, interlayer cohesion and the demanding hydrolysis test in the automotive industry.

1



screen printed film

2



formed film

3

trimmed film

4

back molded part

Mercedes-Benz C + E-Class HVAC panel

Ink System:	Adhesion Promoter:	Substrate:	Injection Resin:
NORIPHAN® HTR N		Makrofol®/Bayfol® films	PC/ABS/PMMA
NORIPHAN® PCI N		Makrofol®/Bayfol® films	PC/ABS/PMMA
NORIPHAN® N2K		PC (<125µm) and PET films	PC/ABS
NORIPHAN® XWR	NORIPHAN® HTR N	PC and PET films	PC/ABS
NORIPHAN® XMR	NORIPHAN® HTR N	PC and PET films	PC/ABS
NoriAmid®	NoriAmid® APM	PA films	PA/PMMA/PC/ABS
Noricryl®		PLEXIGLAS® films	PMMA/ABS
NoriPET®		PET films	ABS
NORIPHAN® XWR	NoriPress® PP	PP films	PP
NoriCure® IMS (UV)	AquaPress® or NORIPHAN® XMR + HTR N	PC films	PC

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