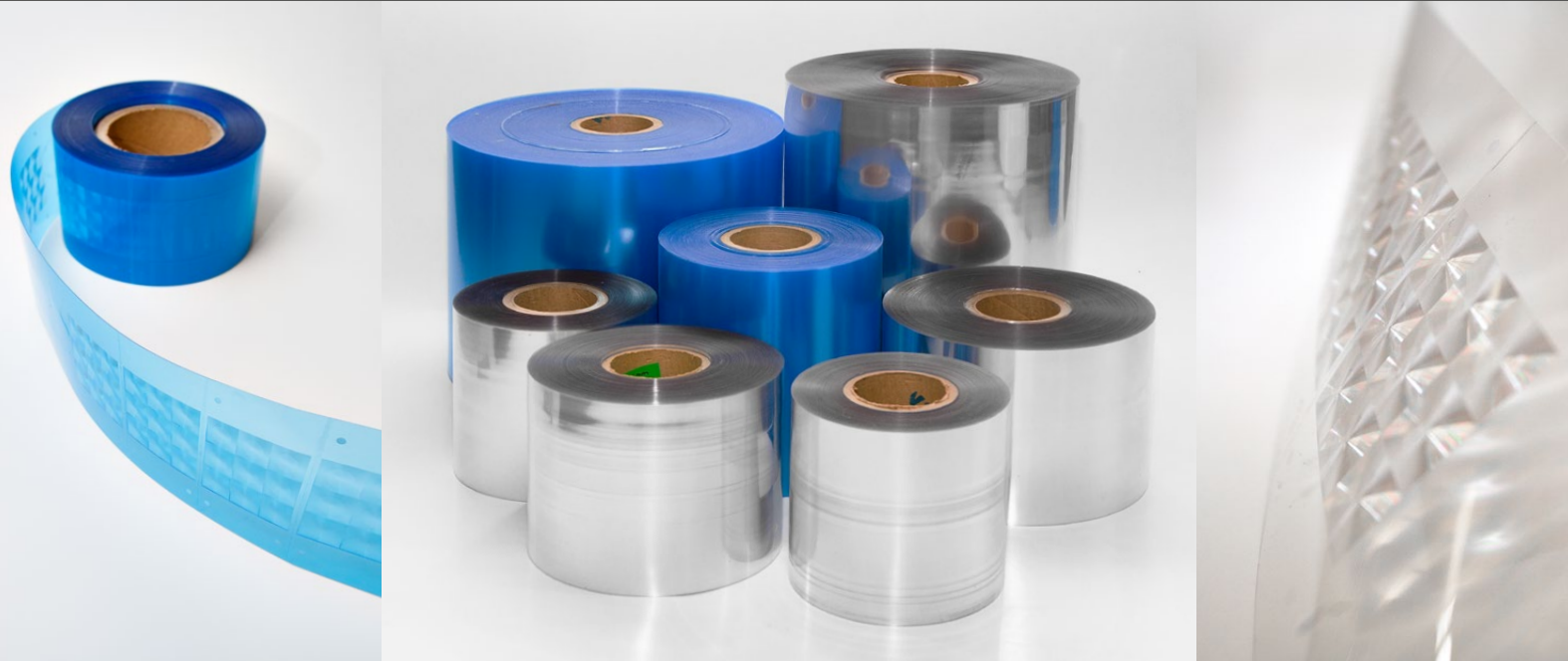


NANOCOMP

MATERIALS FOR ROLL TO ROLL PRODUCTION



MATERIAL STRUCTURE OF PRODUCTION ROLL

Nanocomp uses commercial thin plastic foils together with in-house developed UV-curable lacquers. This enables production of unique products for optical applications by UV-R2R embossing technology. Substrate materials are available in standard thicknesses and customized web widths. Material performance in varying environmental and weather conditions is ensured by extensive testing.

Removable protective film

Embossed microstructured coating (< 20 μm)

Substrate film PET / PC / PMMA / TPU
thickness 12–600 μm

Removable protective film

Nanocomp Ltd is a high-tech company with 20 years of experience in the field of diffractive optics. Nanocomp provides versatile solutions for global customers focusing on design, tooling and mass production of thin foil optics.

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KEY FEATURES

Substrate film	Features
PC	<ul style="list-style-type: none"> • standard thicknesses 75, 125, 175, 250, 375 and 500 µm • high optical transparency • high heat resistance
PMMA	<ul style="list-style-type: none"> • standard thicknesses 75, 125, 175, 250, 375 and 500 µm • high optical transparency • good weathering and UV resistance • very good scratch resistance
PET	<ul style="list-style-type: none"> • standard thicknesses 23, 50, 75, 175 and 250 µm • high optical transparency • outstanding heat resistance
TPU	<ul style="list-style-type: none"> • standard thicknesses 180 and 200 µm • elastic • very good UV resistance and outdoor properties

RELIABILITY TESTS

ITEM	Unit	Name	Spec.	Test method	Test instrument/conditions
Adhesion of lacquer to basefilm		A0-A5	A0-A1=good, A2-A3=fair, A4-A5=poor	Adhesion test for coated/painted surfaces (ISO 2409)	Cross-cut grid method
Dashboard test		85°C↔30°C / 20%RH, 3 Cycles, 1 hr ramp up, 6hr dwell, 1hr ramp down	Meet dimensional and adhesion specification after test	Air blowing across module face	Cross-cut grid method
Heat soak		60 °C / 90% RH, 72 hours		Air blowing across module face	Temperature & Humidity Chamber
Low temperature resistance		-40 °C, 120 hours		Air blowing across module face	Temperature & Humidity Chamber
Thermal cycling (hot/cold)		-40°C/85°C (3 hour cycle, 33 cycles)		Air blowing across module face	Temperature & Humidity Chamber
Heat resistance		85°C/ 20% RH, 500 hours		Air blowing across module face	Temperature & Humidity Chamber

ADHESION

	PC	PMMA	PET
Dashboard	excellent	excellent	excellent
Heat soak	excellent	excellent	excellent
Low temperature resistance	excellent	excellent	excellent
Thermal cycling	excellent	excellent	excellent
Heat resistance 100	excellent	excellent	excellent
Heat resistance 200	excellent	excellent	excellent
Heat resistance 300	excellent	excellent	excellent
Heat resistance 400	excellent	excellent	excellent
Heat resistance 500	excellent	excellent	excellent

■ excellent
■ fair
■ poor

DIMENSIONAL STABILITY

	PC	PMMA	PET
Dashboard	excellent	excellent	excellent
Heat soak	excellent	excellent	excellent
Low temperature resistance	excellent	excellent	excellent
Thermal cycling	excellent	excellent	excellent
Heat resistance 100	excellent	excellent	excellent
Heat resistance 200	excellent	excellent	excellent
Heat resistance 300	excellent	excellent	excellent
Heat resistance 400	excellent	fair	excellent
Heat resistance 500	excellent	fair	excellent