

Permanent

Process integrates the image into the base resin of any KYDEX® material

Maintains Properties

Mechanical properties, formability, durability, and longevity

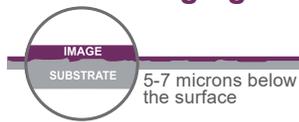
Design Benefits

Possibilities are virtually limitless



Introduction

What is Infused Imaging™?

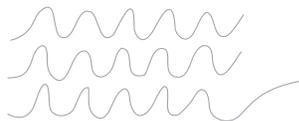


Design in the product, not on it.

Traditionally, images or patterns are achieved on thermoplastic sheet by adding material to the sheet surface or by printing on the surface.

Our proprietary technology integrates custom design into our KYDEX® Thermoplastic sheet, resulting in the ultimate in customization without the compromise of printed solutions, which can chip over time.

Where do I begin with design?



Contact us to get started.

Our on-staff Graphic Artists will be there to assist you throughout the design process. To get started, please consider the following to help you select the right design.

- Do you have a design in mind?
- Is there a physical sample for inspiration?
- Can our design collection help you get started?
- Do you have copyright permission on an existing design?
- Does the design have a specific orientation and scale?

We take it from here.

Our Graphic Artists will select a base colour that compliments your colour palette, design choice, and application. The substrate colour will be the lightest colour of the design.

Things to consider

Preparation is key.

With any decorative material, there are several steps to consider, from selecting the right design for your application, to best practices when thermoforming.

Infused Imaging™ design collections

What are design collections? How can they help?

We have several design collections, including designs inspired by woodgrains, textural elements, and natural elements plus dimensional designs. We created them to help start the design process, to show the capabilities of Infused Imaging™, and to act as catalysts for new ideas.



Ask your KYDEX® representative to see our **Woodgrain Collection Guide**

Questions?

Infused Imaging™
Phone: 800.325.3133 x656
Outside US: +1.570.387.6997
Email: infused@kydex.com

appLab™
Phone: 800.682.8758
Outside US: +1.570.387.6997
Email: applab@kydex.com

kydex.com

Permanent

Process integrates the image into the base resin of any KYDEX[®] material

Maintains Properties

Mechanical properties, formability, durability, and longevity

Design Benefits

Possibilities are virtually limitless



Forming Recommendations

Preventing Distortion

Avoid distortion when forming

We will help you find a solution that will work for your application.

With any decorative material that will be thermoformed, there is the potential for designs to stretch. We also understand that material in service for several years will be subjected to the abuse of flight such as blows from luggage and bumps by the food cart. For this reason, we will recommend design choices and best practices to support the aircraft environment, and keep final parts looking newer for longer.

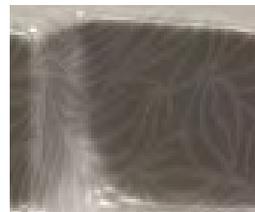
How the design affects the outcome

We recommend non-linear designs.

Our Graphic Artists will propose non-linear designs and tonal colours that complement the application.



Grid showing distortion

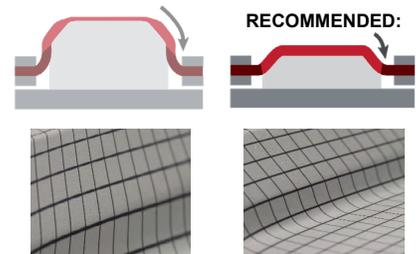


Non-linear design

Tooling height

The taller the tooling, the more susceptible it is to stretching.

As the material is pulled down the sides of the part, the design will also pull. Use care when developing tooling to pull as little as possible. Building gradation steps around the tool's outer edge will help avoid stretching when a deep draw is necessary.



Questions?

Infused Imaging[™]
Phone: 800.325.3133 x656
Outside US: +1.570.387.6997 x656
Email: infused@kydex.com

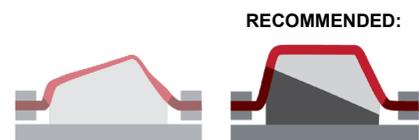
appLab[™]
Phone: 800.682.8758
Outside US: +1.570.387.6997
Email: applab@kydex.com

kydex.com

Tooling symmetry

Create tooling that is symmetrical to ensure even distortion

Material that touches the elevated portion of the tool causes uneven stretching between the elevated section and lower section of the tool. Creating a symmetrical tool allows the material to stretch evenly during the forming process.



Permanent

Process integrates the image into the base resin of any KYDEX® material

Maintains Properties

Mechanical properties, formability, durability, and longevity

Design Benefits

Possibilities are virtually limitless



Durability

Scratch and impact resistance

Durability of Infused Imaging™

Infused Imaging™ does not affect the durability of the product.

KYDEX® sheet will retain its original beauty with reasonable handling and care. Like all other products, KYDEX® sheet with Infused Imaging™ technology will maintain the same durability during the cleaning process.

Scratch resistance

Selecting the right substrate colour will disguise scratching.

Our Graphic Artists will work with you to choose a substrate that best fits the overall design and tone. It's important to choose designs and substrates that are more tonal for the success of the final part.

Forming also increases durability.

The forming process heats up the material, creating a slightly smoother texture that will increase durability with everyday wear-and-tear.

Impact resistance



Brittle VS ductile break - we got this.

Geometries for HIC zones are stronger than ever. KYDEX® 6565HI, KYDEX® 6523HI and KYDEX® 5555HI absorb energy for a ductile versus brittle failure so materials in HIC zones don't shatter.

SEKISUI KYDEX appLab™ performed Gardner Drop Dart and Instrumented Impact Testing on various samples of KYDEX® Thermoplastic sheet, before and after the Infused Imaging™ process. The results in the table below demonstrate that the physical properties of the non-infused sheets were not affected by the Infused Imaging™ process.

BRITTLE
Non-HI Product



Dropped at 12.6 J

DUCTILE
KYDEX® 6565HI



Dropped at 12.6 J

	Thickness	Gardner Drop Dart ASTM D5420	Instrumented Impact ASTM D3763
KYDEX® T-II [Infused]	0.125"(3.18mm)	592 in-lbf 66.89 J (No Break)	435.7 in-lbf 49.23 J*
KYDEX® T	0.125"(3.18mm)	592 in-lbf 66.89 J (No Break)	442.5 in-lbf 50.01 J*
KYDEX® 6565HI-II [Infused]	0.125"(3.18mm)	320 in-lbf 36.15 J (No Break)	230.83 in-lbf 26.08 J*
KYDEX® 6565HI	0.125"(3.18mm)	320 in-lbf 36.15 J (No Break)	222.95 in-lbf 25.19 J*
KYDEX® 6503II [Infused]	0.125"(3.18mm)	42 in-lbf 4.75 J (No Break)	1.71 in-lbf .194 J*
KYDEX® 6503	0.125"(3.18mm)	42 in-lbf 4.75 J (No Break)	1.49 in-lbf .168 J*

*puncture energy

Questions?

Infused Imaging™
Phone: 800.325.3133 x656
Outside US: +1.570.387.6997 x656
Email: infused@kydex.com

appLab™
Phone: 800.682.8758
Outside US: +1.570.387.6997
Email: applab@kydex.com

kydex.com

Permanent

Process integrates the image into the base resin of any KYDEX® material

Maintains Properties

Mechanical properties, formability, durability, and longevity

Design Benefits

Possibilities are virtually limitless



Physical Properties

Flammability and other requirements

Physical properties of Infused Imaging™

Infused Imaging™ does not affect the physical properties of the base material. Infused Imaging™ technology does not affect the physical properties or flammability results of KYDEX® aviation grade materials, because there is no change in the polymer formulation.

Flammability



Flammability tests conducted with Infused Imaging™ pass with flying colours.

SEKISUI KYDEX's applLab™ commissioned the testing of several sheets of KYDEX® Thermoplastic sheet by an accredited third party lab. The results in the table below illustrate that the flammability results of the non-infused sheets were not affected by the Infused Imaging™ process.

SEKISUI KYDEX encourages our partners and customers to conduct their own tests to determine the suitability of each product for their particular purposes.

	60 second Vertical Burn FAR 25.853(a)(i)			Ohio State Heat Release FAR25.853(d) Part IV		Smoke Density FAR 25.853(d) Part V		
	Burn Time (sec)	Burn Length (in)	Longest Burning Particle (sec)	2 min total	Peak HR	Ds@ 1.5m	Ds@ 4.0m	Ds Max
KYDEX® T-II [Infused]	0	1.7	None	N/A	N/A	N/A	N/A	N/A
KYDEX® T	0	1.8	None	N/A	N/A	N/A	N/A	N/A
KYDEX® 6565HI-II [Infused]	0	2.2	None	52	44	24	99	99
KYDEX® 6565HI	0	2.2	None	53	43	13	77	77
KYDEX® 6503II [Infused]	0	3.3	None	36	36	31	148	148
KYDEX® 6503	0	3.4	None	41	34	28	131	131
KYDEX® 6565II [Infused]	0	3.6	None	33	33	27	99	99
KYDEX® 6565	0	3.7	None	32	34	40	121	121

Cleanability and chemical resistance

Questions?

Infused Imaging™
Phone: 800.325.3133 x656
Outside US: +1.570.387.6997 x656
Email: infused@kydex.com



applab™
Phone: 800.682.8758
Outside US: +1.570.387.6997
Email: applab@kydex.com

kydex.com

	ArmorAll®		Goof-Off Professional®		Goof-Off Graffiti Remover®		Goo-Gone Spray Gel®		Fantastik Orange Action®	
	Smooth	P1 Deep	Smooth	P1 Deep	Smooth	P1 Deep	Smooth	P1 Deep	Smooth	P1 Deep
Pen Ink	No	No	Yes	Yes	Yes	Yes	Very Faded	Very Faded	Faded	No
Marker	Faded	No	Yes	Visible	Yes	Yes	Very Faded	No	Faded	No
Crayon	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Spray Paint	No	No	Yes	Yes	Yes	Yes	Some	No	No	No