Adding Durability to Your Card Program

Best Practice Guide

ENTRUST

SECURING A WORLD IN MOTION

Protecting cards against life's harsh realities

Consumers handle their cards in many different ways. Some carry them in their wallet and use them every day. Others may stick them in a pocket or leave them laying loose in a bag or purse. Still others like to put their cards to the test and use them for unintended purposes, such as scraping a window. In any case, these various uses have different impacts on the lifespan of a card, and the more durability you can add to the card, the lower the replacement costs will be. This is especially important with costly EMV smart cards that are used to create more secure card portfolios. Card durability and longevity become vitally important in reducing overall program costs.

Usage is just one factor that impacts card durability. The following factors all contribute to card lifespan:

Usage and Construction:

Card Substrate	**Personalization Technology**	**Storage**
The card's construction	Supplies and hardware used, machine settings	Wallet, purse, pouch, dashboard, etc.

Environmental Factors:

Chemical Resistance	**Adhesion**	**Abrasion Resistance**	**Moisture Resistance**	**UV Resistance**
Image degradation, embrittlement	Overlay and card delamination, image degradation and removal	Overlay and personalization removal, image degradation	Card delamination, bubbling, image degradation	Card and image fading, card embrittlement

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LOW - Card Functionality/Exposure

Rarely used in transactions such as a mag stripe or smart card reader. Infrequent handling, exposure to sunlight or finger oils.

Rarely carried on a person on a daily basis. Often stored in an additional storage product (such as a Tyvek card pouch).

Documents that have low exposure are typically only used a few times per year.

Cards can still be accepted even if the printing has significantly deteriorated.

MEDIUM - Card Functionality/Exposure

Average exposure to sunlight, finger oils, and transaction contact (such as a mag stripe or smart card reader).

May be carried on a person, but stored in a protected environment, such as a wallet.

Used occasionally (weekly).

Cards can still be accepted even if some of the printing has deteriorated.

HIGH - Card Functionality/Exposure

Frequent contact with transaction terminals or regularly exposed to finger oils, sunlight, or abrasion from items stored nearby (such as coins or keys).

Often carried on a person and ready for immediate use or stored loosely in a pocket with coins, keys, or other items.

Used frequently (daily).

The need for the personalized card print detail is a critical factor for authentication.

A closer look at card lifespan

To get an idea of the average lifespan for your card program, you need to consider the typical usage, the level of required functionality for transaction capability, and exposure levels that your card will face on a regular basis. We recommend considering all of the elements that impact your card program and selecting the appropriate level of protection based on your specific needs.

Based on the types of usage and exposure a card may experience, the chart on page three can help you determine the durability options that best suit your card program.

Durability Solution	Card Life at Varying Functionality/Exposure										Highlights
	1	2	3	4	5	6	7	8	9	10	
Direct-to-Card Print Technology with Sigma DS, CD, and SD Series Desktop Card Printers											
BLACK MONOCHROME PRINTING Applicable for black as the most common color choice for monochrome printing (without a topcoat) of text, logos, or branding information. Durability of white, metallics, and other colors (without a topcoat) will be lower.	LOW to 3, MEDIUM to 2, HIGH to 1										Performance tested as per ANSI INCITS 322-2015
BLACK MONOCHROME PRINTING + T-PANEL (KT Ribbon) Near edge-to-edge clear topcoat film in single layer coverage over monochrome printing of text, logos, or branding information Durability of other panel ribbon colors such as silver or gold will be lower.	LOW to 3, MEDIUM to 3, HIGH to 2										Performance tested as per ANSI INCITS 322-2015
BLACK + T-PANEL x2 PRINTING (KTT Ribbon) Near edge-to-edge clear film in double layer coverage over black monochrome printing for printing of text, logos, or branding information. Durability of white will be lower.	LOW to 6, MEDIUM to 4, HIGH to 3										Performance tested as per ANSI INCITS 322-2015
FULL COLOR PRINTING + T-PANEL (YMCKT Ribbon) Near edge-to-edge topcoat in a single layer coverage over dye color and black resin printing.	LOW to 3, MEDIUM to 3, HIGH to 2										Performance tested as per ANSI INCITS 322-2015
FULL COLOR PRINTING + TOPCOAT (YMCK Ribbon + LAMINATOR TOPCOAT) Near edge-to-edge topcoat in a single layer coverage over dye color and black resin printing.	LOW to 3, MEDIUM to 3, HIGH to 2										Performance tested as per ANSI INCITS 322-2015
FULL COLOR + T-PANEL + BLACK + T-PANEL DUPLEX PRINTING (YMCKT-KT) Near edge-to-edge topcoat in a single layer coverage over dye color and black resin printing of front card and single layer topcoat over black resin printing for the back card.	LOW to 3, MEDIUM to 3, HIGH to 2										Performance tested as per ANSI INCITS 322-2015
FULL COLOR + T-PANEL + T-PANEL (YMCKT-KT) Applying YMCKTT frontside & K backside Near edge-to-edge topcoat in a double layer coverage over dye color and black resin printing of front card and black resin printing for the back card. Table references frontside card life.	LOW to 6, MEDIUM to 4, HIGH to 3										Performance tested as per ANSI INCITS 322-2015
FULL COLOR PRINTING (YMCKT) + CLEAR DURASHIELD OVERLAY True edge-to-edge overlay fim coverage applied over color dye panel printing. (Requires application of T-panel).	LOW to 7, MEDIUM to 6, HIGH to 4										Performance tested as per ANSI INCITS 322-2015
FULL COLOR PRINTING (YMCK) + DURAGARD LAMINATE 0.5 MIL OR 1.0 MIL Available in clear or secure holographic designs for near edge-to-edge patch coverage over color dye panel printing.	LOW to 10, MEDIUM to 10, HIGH to 10										Performance tested to ANSI INCITS 322-2015 & ISO 24789. Meets ISO/IEC 2489-1: 2012 Requirements; Annex B3:10 Year Driver's License.

Durability Solution	Card Life at Varying Functionality/Exposure										Highlights
	1	2	3	4	5	6	7	8	9	10	

Retransfer Pigment Ink Print Technology with Artista CR805 Desktop Printers

Durability Solution	Card Life (bars)	Highlights
FULL COLOR + FILM x1 PRINTING CMYKP + 1 FILM) True edge-to-edge retransfer film single layer coverage over color pigment panel printing.	LOW: ~5 / MEDIUM: ~2.5 / HIGH: ~1.5	Performance tested as per ANSI INCITS 322-2015
FULL COLOR PRIMERLESS + FILM x1 PRINTING (CMYK + 1 FILM) True edge-to-edge retransfer film single layer coverage over color pigment panel printing.	LOW: ~5.5 / MEDIUM: ~2.5 / HIGH: ~1.5	Performance tested as per ANSI INCITS 322-2015
FULL COLOR + FILM x2 (CMYKP + 2-FILM) True edge-to-edge retransfer film two layer coverage over color pigment panel printing.	LOW: ~6 / MEDIUM: ~4.5 / HIGH: ~2	Performance tested as per ANSI INCITS 322-2015
FULL COLOR PRIMERLESS + FILM x2 (CMYK + 2-FILM) True edge-to-edge retransfer film two layer coverage over color pigment panel printing.	LOW: ~6 / MEDIUM: ~4.5 / HIGH: ~2.5	Performance tested as per ANSI INCITS 322-2015
FULL COLOR + FILM + DURAGARD LAMINATE 1.0 MIL (CMYKP + 1 FILM + LAMINATE Near edge-to-edge clear or custom holographic 1.0 mil patch coverage over single layer RTM and color pigment panel printing.	LOW: ~10 / MEDIUM: ~10 / HIGH: ~10	Performance tested to ANSI INCITS 322-2015 & ISO 24789. Meets ISO/IEC 2489-1: 2012 Requirements; Annex B3:10 Year Driver's License.

ANSI INCITS 322-2015: Industry standard guidance on performance test methods for card durability

ISO 24879: Industry standard guidance on performance test methods for card service life

Estimated card life based on the following:

- PVC substrate with polish finish
- Direct-to-card printing consists of preprinted card substrate with variable personalization
- Retransfer printing consists of blank white substrate/or mimimal preprinted substrate and card personalized with full-color printing. Some card edgewear is considered market acceptable
- Card life assumptions are based on combination of laboratory testing and real-life experiences

Adding durability pays off

Issuing durable cards that stand up to life's demands has always been a crucial component of any card program. But with increased issuance costs due to the rise of EMV smart cards, issuing long-lasting cards is more important than ever. With Entrust solutions and our industry expertise on your side, you can produce, print, and personalize vibrant, durable cards that build consumer loyalty and ensure successful, secure transactions.

For more information, contact your Entrust sales representative.

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ABOUT ENTRUST CORPORATION

Entrust keeps the world moving safely by enabling trusted identities, payments, and data protection. Today more than ever, people demand seamless, secure experiences, whether they're crossing borders, making a purchase, accessing e-government services, or logging into corporate networks. Entrust offers an unmatched breadth of digital security and credential issuance solutions at the very heart of all these interactions. With more than 2,500 colleagues, a network of global partners, and customers in over 150 countries, it's no wonder the world's most entrusted organizations trust us.

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