

PantoneLIVE Library Specifications



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PantoneLIVE Color Standards Fitness for Use Properties

All PantoneLIVE™ Dependent Standard Libraries have been created with consideration for specific packaging print applications and the related fitness for use criteria. Packaging specifiers, printers and their suppliers around the world can select and substitute commonly-available substrate and inks without risk to the achievability of the PantoneLIVE color standards in production. In general, unless otherwise stated in the library specification, PantoneLIVE Dependent Libraries have been created with materials that have the following properties which are important in packaging applications:

- The materials used are not prone to fade in most situations
- The use of Fanal pigments (of which several colors have limited light fastness) has been avoided except for the four waterbased paper packaging libraries:
 - FWCP - PantoneLIVE Paper Packaging Flexo (M) Water Coated
 - FYBK - PantoneLIVE Paper Packaging Flexo Water Brown Kraft
 - FYWK - PantoneLIVE Paper Packaging Flexo Water White Kraft
 - FYWT - PantoneLIVE Paper Packaging Flexo Water Wht Recycled Kraft
- The materials used can be laminated with heat or adhesive methods
- The materials used are suitable for indirect food packaging applications
- Offset materials used are coatable with an overprint varnish
- Offset materials are designed for a typical film weight of 1.3 GSM

As factors such as substrate white point, colorant availability and printing process variables, may be different between packaging jobs and across global markets, there is no guarantee that a perfect match to PantoneLIVE standards will be obtained; however, by aiming at a given PantoneLIVE dependent standard where materials and print parameters are typical of the application, good overall results should be realized consistently. For more exacting color standards, PantoneLIVE can create custom Brand Owner color libraries including unique colors, materials and processes. In some cases, it may be possible to achieve a closer match to PANTONE® Master Standard in a specific application than PantoneLIVE Dependent Standard indicates due to the use of higher-quality structures, different printing parameters, or specialized colorants. However, PantoneLIVE Dependent Standard Libraries are intended to provide typical results of each application with the goals of general achievability and repeatability. These are the characteristics that provide confidence in the use of a Dependent Standard. Note that simply matching the color of a PantoneLIVE Dependent Standard does not guarantee that the fitness for use attributes have also been met. There are many color mixtures and combinations that could potentially match a given PantoneLIVE color. It is the responsibility of the ink supplier to ensure the component materials meet the use criteria of each packaging application.

PantoneLIVE Dependent Standards

PantoneLIVE Dependent Standards are digitally characterized, representative examples of the PANTONE PLUS series colors (PANTONE MATCHING SYSTEM®.) reproduced using a given printing process and typical substrate. Dependent Standards are inherently specific because they contain precise spectral data and associated descriptive metadata. Dependent Standards are proven to be achievable because they are made from real materials and relevant processes. As a result, the process of predicting production results via softcopy- or hardcopy - proofing system based on Dependent Standards is accurate. Likewise, a color formulation from spectral data, while accounting for substrate and ink application variation, is fast and straightforward. Finally, on-press production set-up is streamlined because the targets are known and known to be feasible.

PantoneLIVE Dependent Standards are easy to integrate into your workflow and color vocabulary, as their names are immediately recognizable derivatives of current PANTONE Colors you use in your workflow today.

All other color names follow the same convention:

- The word PANTONE is replaced by a capital “P”
- All spaces are removed
- The “C” is retained to indicate the original PANTONE Coated substrate of the Master Standard
- A unique 4 letter alphabetic character code is appended after a space, which is indexed to a distinct set of Dependent Standard conditions, including such attributes as substrate, printing process, finish, etc.
- All Dependent Standard names are unique as shown in Figure 1

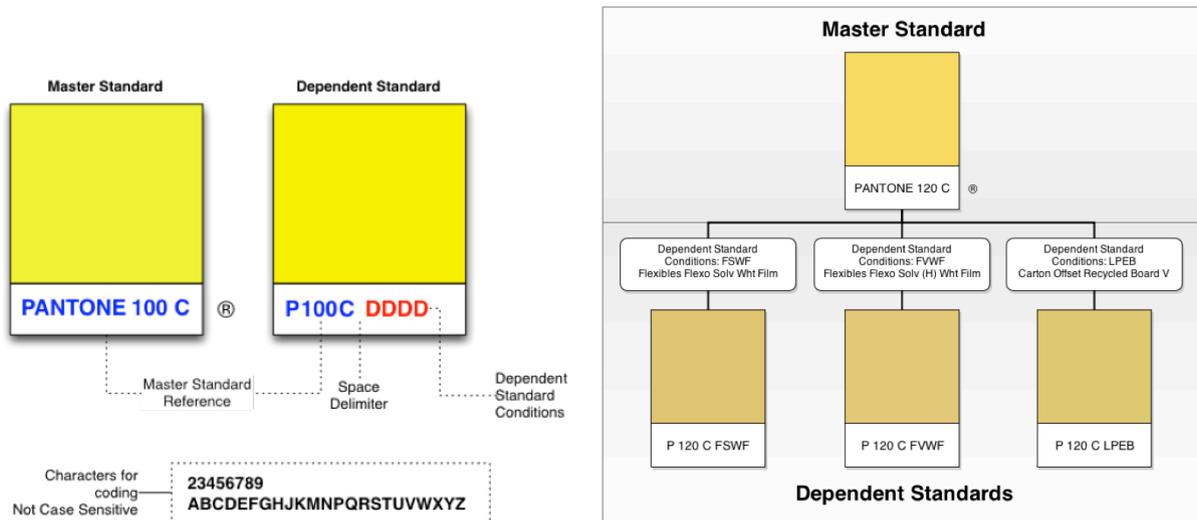


Figure 1: Dependent standard naming example for multiple dependent standard conditions.

For its standard print publications PANTONE uses the letter “C” to indicate a coated substrate and “U” to indicate uncoated. PANTONE Coated and Uncoated colors are created from the same ink recipe on different substrates, and should not be confused with Dependent Standards. PANTONE 120 C and PANTONE 120 U are two distinct colors from the same ink formula, so each would serve as unique PantoneLIVE Master Standards, and will have unique Dependent Standard versions.

When brand owners integrate PantoneLIVE Dependent Standards into their own designs, it is possible that they will use “alias” names in place of the traditional PantoneLIVE Dependent Standard Name. A brand owner may use PANTONE values without visible reference to the original name maintaining a clean identity to their own products. Regardless of use of original Dependent Standard name or a custom name, every color identity in the PantoneLIVE cloud will be unique, creating unambiguous reference in design documents and written communication of color requirements.

PantoneLIVE Codes for Dependent Standard Conditions

Associated with each dependent standard library is a four-letter code. Each letter represents a specific aspect of the printing process that was used to generate the library. The four letters correspond to printing process, ink system and volume, substrate and finishing respectively. The four-letter naming convention associated with each PantoneLIVE dependent standard library is shown in Table 1 and Table 2 below. For example, a dependent standard library generated using flexography with a medium UV/EB paste on recycled coated board with a clear lamination would be FUTY. Please note that Table 1 and Table 2 contain possible dependent standard naming conventions. *Some of the combinations listed are currently unavailable in PantoneLIVE.*

Table 1: Alphabetic representation of first two letters in four-letter code. Some codes are currently unavailable.

Print Processes	Ink System and Volume	Print Code
Offset Lithography	Conventional Paste Heavy	LP
	Conventional Paste Medium	LP
	UV/EB Paste Medium	LU
Flexography	Liquid Solvent Heavy	FV
	Liquid Solvent Medium	FS
	Liquid Water Heavy	FY
	Liquid Water Medium	FW
	UV/EB Paste Medium	FU
Gravure	Liquid Solvent Heavy	GV

Table 2: Alphabetic representation of last two letters in four-letter code. Some codes currently unavailable.

Base Substrate	Finishing	Sub Code
Aluminum (Can or Foil)	None	AL
	Varnish	AV
Aluminum (Can or Foil)/White Ink	Clear Lamination	AE
	None	AW
	Varnish	AH
Steel	Clear Lamination	SL
	None	ST
	Varnish	SV
Steel/White Ink	Clear Lamination	SE
	None	SW
	Varnish	SH
Pigment Coated Recycled Carton Board	Clear Lamination	YB
	None	RB
	Varnish	EB
Pigment Coated Virgin Carton Board	Clear Lamination	NB
	None	VB
	Varnish	GB
Recycled Coated Board	Clear Lamination	YT
	None	RT
	Varnish	ET
Recycled Uncoated Board	Clear Lamination	YU
	None	RU
	Varnish	EU
Virgin Coated Board	Clear Lamination	NT
	None	VT
	Varnish	GT
Virgin Uncoated Board	Clear Lamination	NU
	None	VU
	Varnish	GU
Cast-Coated Virgin Paper	Clear Lamination	CL
	None	CP
	Varnish	CV
Clear Film	Clear Lamination	CC
	None	CE (Clear Film)
		CT (Rev/Clr Film/Wht Ink)
		RC (Rev/Clr Film)
		CA (Clr Film V)
	Varnish	RV (Rev/Clr Film V)
White Film	Clear Lamination	CW
	None	WF
	Varnish	WW
Brown Kraft Paper	Clear Lamination	BL
	None	BK
	Varnish	BV
White Kraft Paper	Clear Lamination	WL
	None	WK
	Varnish	WR
White Recycled Kraft	Clear Lamination	TL
	None	WT
	Varnish	TV

PantoneLIVE Tints

PantoneLIVE offers an innovative solution for working with tonal (tint) data. PantoneLIVE Dependent Standard data contain tonal information. PantoneLIVE savvy applications make use of this data and provide more accurate predictions for design elements such as gradients and vignettes.

Before you start working with PantoneLIVE tonal data, it is important to recognize how this data is built, and what it represents.

Tonal data represents the spectral data produced when a specific apparent dot area is rendered. A 50% tint provided by PantoneLIVE does not relate to the 50% input dot you specify in an application like Adobe® Illustrator®. If you specify 50% in Illustrator and your printing process is known to gain 25% (50% becomes a 75% measured dot) the PantoneLIVE 75% dot will accurately represent the color you can expect to see on final output.

While it is true a 50% tint gaining 30% and a 70% tint gaining 10% can appear different from the perspective of printing dot quality, the common 80% achieved apparent dot compares to the same CIELAB or spectral values provided general best practices in ink mixing, prepress and printing are observed.

To take advantage of the tonal data delivered by PantoneLIVE use software that understands these concepts and enables specification of dot gain to design elements. Esko software and the Pantone Color Book and Color Book plugins are ready to enable this capability.

To ensure your final product adheres closely to the expectations set by the PantoneLIVE tonal data, it is important to consider spectral, or multi-illuminant, matching in your ink mixing process. Simple CIELAB formulation matches that are significantly metameric can produce poor matches in non-solid areas of your design.

In general X-Rite recommends the best practice of matching to best-fit spectral targets defined in the PantoneLIVE Dependent Standards.

XRGA

Since 2010 all new X-Rite Graphic Arts hardware has conformed to XRGA metrology. The most central component, starting with a very well controlled ISO 17025 internal metrology system at X-Rite, is the white calibration function and its conformance to NIST traceable Master Standards. Additional tuning of the hardware's system response removes any effect of historical/legacy offsets to prepare for the best common future industry accepted performance. In addition to the hardware focus, the digital data for PANTONE Color publications for the Graphic Arts are also fully compliant with XRGA metrology – making X-Rite and Pantone solutions perform cohesively.

While integrating the PantoneLIVE Dependent Standard Libraries in software or workflow, numeric comparisons should only be performed with XRGA compliant measurement devices and with other XRGA data or color difference results will be misleading.

About X-Rite

X-Rite is a global leader in color science and technology. The Company, including design industry color leader Pantone LLC, develops, manufactures, markets and supports innovative color solutions through measurement systems, software, color standards and services. X-Rite's expertise in inspiring, selecting, measuring, formulating, communicating and matching color get color right the first time and every time, achieving better quality and reduced costs. X-Rite serves a range of industries, including printing, packaging, photography, graphic design, video, automotive, paints, plastics, textiles, dental and medical. For further information, please visit [X-Rite](#).

About Pantone

Pantone LLC¹, a wholly owned subsidiary of X-Rite, Incorporated, has been the world's color authority for nearly 50 years, providing design professionals with products and services for the colorful exploration and expression of creativity. Always a source for color inspiration, Pantone now offers paint and designer-inspired products and services for consumers. More information is available at [Pantone](#).

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